JIKAP
Jurnal Informasi dan Komunikasi Administrasi Perkantoran
Vol. 10, No. 3, 2026
Hlm. 361

The effect of technology use and teacher teaching methods on students' learning interest at SMK Negeri 1 Banyudono

Fina Luthfi Maharani*, Cicilia Dyah Sulistyaningrum Indrawati

Pendidikan Administrasi Perkantoran, Universitas Sebelas Maret, Surakarta, Indonesia

Email: finaluthfimaharani@student.uns.ac.id

Abstrak

Perkembangan teknologi digital telah membawa perubahan dalam proses pembelajaran, terlebih pada Sekolah Menengah Kejuruan (SMK) yang relevan karena selaras dengan orientasi SMK sebagai pendidikan vokasional dengan penguasaan keterampilan, termasuk dalam teknologi. Selain itu, perlu adanya strategi pembelajaran guru dalam penerapan metode mengajar yang tepat sehingga mampu meningkatkan minat belajar siswa. Maka integrasi metode mengajar guru dengan penggunaan teknologi dalam proses pembelajaran penting untuk dilakukan guna menciptakan proses pembelajaran yang mampu menarik minat belajar siswa. Penelitian ini bertujuan untuk mengetahui apakah terdapat pengaruh (1) penggunaan teknologi terhadap minat belajar siswa pada mata pelajaran Projek Kreatif dan Kewirausahaan (PKK) kelas XI MPLB SMK Negeri 1 Banyudono, (2) metode mengajar guru terhadap minat belajar siswa, dan (3) penggunaan teknologi dan metode mengajar guru secara bersamaan terhadap minat belajar siswa. Penelitian ini menggunakan pendekatan kuantitatif metode kausalitas dengan teknik sampel jenuh. Data dikumpulkan melalui kuesioner. Uji validitas menggunakan Product Moment Pearson dan uji reliabilitas menggunakan Cronbach Alpha. Analisis data menggunakan regresi linier berganda. Hasil penelitian menunjukkan bahwa penggunaan teknologi berpengaruh positif dan signifikan terhadap minat belajar siswa (sig. 0,018 < 0,05; thitung 2,428 > ttabel 1,998), metode mengajar guru berpengaruh positif dan signifikan terhadap minat belajar siswa (sig. 0,000 < 0,05; thitung 5,917 > ttabel 1,998), dan secara simultan kedua variabel berpengaruh positif dan signifikan terhadap minat belajar siswa (sig. 0,000 < 0,05; Fhitung 36,660 > Ftabel 3,14). Nilai R square sebesar 54,2% menunjukkan bahwa penggunaan teknologi dan metode mengajar guru berkontribusi sebesar 54,2% terhadap minat belajar siswa, sementara 45,8% dipengaruhi faktor lain di luar penelitian.

Kata kunci: teknologi pembelajaran; media pembelajaran digital; strategi mengajar; pola mengajar

Abstract

The rapid advancement of digital technology has fundamentally transformed the learning process, particularly in vocational high schools (SMK, Sekolah Menengah Kejuruan), where technology integration is especially pertinent given the vocational orientation of such institutions toward practical skill mastery. Alongside technological developments, effective

* *Corresponding author*

Citation in APA style: Maharani, F. L., & Indrawati, C. D. S. (2026). The effect of technology use and teacher teaching methods on students' learning interest at SMK Negeri 1 Banyudono. *Jurnal Informasi dan Komunikasi Administrasi Perkantoran, 10*(3), 361-370.
https://dx.doi.org/10.20961/jikap.v10i3.118328

instructional strategies are essential to fostering students' learning interest. The purposeful integration of teacher teaching methods with technology use in the learning process is therefore critical to creating engaging and meaningful educational experiences. This study aims to determine whether (1) technology use influences students' learning interest in the Creative Project and Entrepreneurship (PKK) subject among grade XI MPLB students at SMK Negeri 1 Banyudono, (2) teacher teaching methods influence students' learning interest, and (3) technology use and teacher teaching methods simultaneously influence students' learning interest. A quantitative approach with a causal research design was employed, utilizing a saturated sampling technique. Data were collected through structured questionnaires. Validity was assessed using Pearson Product Moment correlation, and reliability was evaluated using Cronbach's Alpha. Data analysis employed multiple linear regression. The results indicate that technology use had a positive and significant effect on students' learning interest ($p = .018 < .05$; $t = 2.428 >$ t-table = 1.998), teacher teaching methods had a positive and significant effect ($p = .000 < .05$; $t = 5.917 >$ t-table = 1.998), and both variables simultaneously had a positive and significant effect on students' learning interest ($p = .000 < .05$; $F = 36.660 >$ F-table = 3.14). The coefficient of determination ($R^2 = .542$) indicates that technology use and teacher teaching methods collectively explained 54.2% of the variance in students' learning interest, while the remaining 45.8% is attributed to other factors not examined in this study.

Keywords: learning technology; digital learning media; teaching strategies; teaching patterns

Received May 4, 2026; Revised June 18, 2026; Accepted June 18, 2026; Published Online June 22, 2026
https://dx.doi.org/10.20961/jikap.v10i3.118328

Introduction

Education constitutes one of the most fundamental pillars in forming individuals of quality and character. The Fourth Industrial Revolution has catalyzed transformative changes across multiple sectors, with education being among the most significantly affected. A key determinant of successful learning outcomes is students' intrinsic learning interest—a factor that shapes their level of engagement, skill development, and academic focus. As Tiwow et al. (2022) noted, effective teaching and learning activities require student interest to facilitate comprehension of instructional material. Students with high learning interest tend to be more active, skilled, focused, and enthusiastic in their learning engagement, which in turn promotes deeper mastery of content and optimizes academic achievement.

The advancement of information and communication technology in the field of education has generated substantial changes in how learning is conducted. Educational technology encompasses systems that support learning activities and enable the attainment of learning objectives. Caswanda et al. (2024) argued that integrating technology-based curricula—through digital applications, tools, and project-based learning supported by technology—represents an effective instructional strategy that promotes active student participation. The use of interactive technology such as applications, platforms, and digital presentations can cultivate an engaging learning environment that serves both as a medium and a resource for students. Hidayatullah et al. (2023) similarly affirmed that integrating technology into education has the potential to make teaching methods more dynamic and interactive. Within the vocational context, technology use at the SMK level is particularly relevant, as it aligns with the vocational orientation of skill mastery, including technological competence.

Keller's (1987) ARCS model provides a theoretical framework for understanding how students' learning interest can be enhanced through four key components: attention, relevance, confidence, and satisfaction. Technology-integrated learning has the capacity to capture students' attention, increase the perceived relevance of instructional material, build learner confidence, and generate satisfaction in the learning process.

Accordingly, the ARCS model offers a robust explanatory lens for the relationship between technology use and learning interest.

Beyond technological factors, the instructional methods employed by teachers play an equally vital role. Dewi (2021) found that teaching methods significantly influence the development of student learning interest. Teacher teaching methods represent the instructional strategies applied to achieve learning objectives. When teachers employ diverse, contextual, and communicative methods, students are more likely to become actively involved in the learning process and develop genuine interest. Teachers who successfully adapt their instructional approaches to the varied characteristics of their students—including the integration of theory with hands-on practice using technology—face the ongoing challenge of sustaining student learning motivation.

SMK Negeri 1 Banyudono, as a vocational education institution, is expected to continuously improve the quality of learning to produce competent graduates prepared for the professional world. Rahayu et al. (2023) noted that digital technology is increasingly utilized in entrepreneurship education through social media platforms, multimedia, and general computing tools. In this context, student competencies need to be further supported by effective teacher teaching methods. This study therefore investigates how technology use and teacher teaching methods influence students' learning interest in the Creative Project and Entrepreneurship (PKK) subject at SMK Negeri 1 Banyudono.

Field observations at SMK Negeri 1 Banyudono revealed that instructional practices in the grade XI MPLB program involve assigning tasks that require students to independently explore and apply various digital applications. This places considerable demands on students' learning interest, as technology is not always comprehensively taught in school. A preliminary questionnaire administered to 21 students revealed several concerning findings: 66.7% of students frequently received tasks requiring the use of applications that had not been previously taught; 81.0% were required to independently explore technology use given limited classroom instruction; 76.2% indicated that school technology was not being used to its full potential due to various constraints; and 71.4% reported frequent distraction during learning activities. Early observational data also indicated that students were often distracted during lessons, assignment completion rates were low, and many students submitted work late or failed to submit at all—collectively pointing to low levels of learning interest among the student population.

Based on these findings, this study was designed to examine three hypotheses: (1) technology use influences students' learning interest at SMK Negeri 1 Banyudono; (2) teacher teaching methods influence students' learning interest; and (3) technology use and teacher teaching methods simultaneously influence students' learning interest. The study tests both partial and simultaneous effects of the two independent variables on students' learning interest.

The theoretical foundation of this study draws on Jean Piaget's (1952) constructivist learning theory, which holds that students construct knowledge through active learning experiences. Within this framework, teachers are not merely information transmitters but facilitators who help students understand content through interaction, practice, and the use of instructional media. The novelty of this study lies in its simultaneous examination of both technology use and teacher teaching methods within the vocational education context of SMK Negeri 1 Banyudono. While prior studies have generally examined these variables independently, this study integrates them into a unified research model to assess their partial and simultaneous effects on students' learning interest. Furthermore, the vocational school context—characterized by skill-based, technology-inclusive learning—remains underexplored in the existing literature, making this study a meaningful contribution to the field.

Method

Research Design and Variables

This study was conducted at SMK Negeri 1 Banyudono over the period from September 2025 to May 2026. A quantitative causal research design was employed, incorporating two independent variables—technology use (X1) and teacher teaching methods (X2)—and one dependent variable—students' learning interest (Y). Responses were recorded on a four-point Likert scale: "Strongly Agree," "Agree," "Disagree," and "Strongly Disagree." Data were collected through structured questionnaires.

Population and Sampling

The study population comprised all 71 students enrolled in grade XI of the Office Management and Business Services (MPLB) program at SMK Negeri 1 Banyudono. Consistent with the saturated sampling principle, all population members were initially selected as the study sample given that the total population fell below 100 subjects. Following data collection, a screening procedure was applied using the Local Outlier Factor (LOF) method to identify respondents whose response patterns deviated statistically from the local data density. Six respondents were identified as outliers based on LOF scores exceeding the established threshold and were subsequently excluded from the final analysis, yielding a final analytical sample of 65 students.

Instrument try-out testing was conducted with 30 grade XI students from the Marketing (PM) program—a population outside the study sample but sharing comparable characteristics with the main respondents. This approach was necessitated by the saturated sampling design, which precluded the use of the main sample population for pilot testing.

Research Instruments

All instruments were independently developed by the researchers based on theoretical indicators identified through a review of the relevant literature, adapted to reflect field conditions. The students' learning interest instrument (Y) encompassed indicators of enjoyment, learning attraction, learning attention, learning motivation, and learning desire. The technology use instrument (X1) covered indicators of digital media utilization, technology appropriateness, ease of access, interactivity, and clarity of learning materials. The teacher teaching methods instrument (X2) assessed method appropriateness, clarity of delivery, student engagement, use of examples or illustrations, and teacher-student interaction. Each instrument comprised 15 initial items, assessed through validity testing on the pilot sample.

Validity testing employed Pearson Product Moment correlation, with items deemed valid when the calculated r-value exceeded the r-table value at a 5% significance level. Items failing this criterion were discarded. Following validation, the students' learning interest instrument (Y) retained 12 valid items (3 discarded), the technology use instrument (X1) retained 12 valid items (3 discarded), and the teacher teaching methods instrument (X2) retained 12 valid items (3 discarded). Reliability testing using Cronbach's Alpha confirmed satisfactory reliability for all three instruments: learning interest ($\alpha = .966$), technology use ($\alpha = .973$), and teacher teaching methods ($\alpha = .970$), all substantially exceeding the threshold of .60.

Data Analysis

Data analysis was conducted using multiple linear regression to evaluate the influence of the two independent variables on the dependent variable. Prior to regression analysis, the following classical assumption tests were performed: normality (Kolmogorov-Smirnov), linearity, multicollinearity (Tolerance and VIF), heteroscedasticity (Glejser test and scatterplot), and autocorrelation (Durbin-Watson). Hypothesis testing involved the t-test (partial effects), F-test (simultaneous effects), and coefficient of determination (R^2). Additionally, effective contribution (EC) and relative contribution (RC) analyses were conducted to assess the proportional contribution of each independent variable to the dependent variable.

Results

Descriptive Statistics

Data were collected from 65 grade XI MPLB students at SMK Negeri 1 Banyudono. Each variable was measured using a 12-item questionnaire. Table 1 presents the descriptive statistics for all three variables.

Table 1.

Descriptive Statistics for Research Variables

	Students' Learning Interest (Y)	Technology Use (X1)	Teacher Teaching Methods (X2)
N (Valid)	65	65	65
N (Missing)	0	0	0
Mean	39.86	40.40	39.86
Std. Error of Mean	.364	.470	.421
Std. Deviation	2.936	3.786	3.391

Variance	8.621	14.337	11.496
Range	13	18	14
Minimum	33	30	33
Maximum	46	48	47
Sum	2591	2626	2591

Note. N = 65 students. Data processed by the researchers (2026).

As shown in Table 1, the students' learning interest variable (Y) yielded a minimum score of 33, a maximum of 46, a mean of 39.86, and a standard deviation of 2.936. The technology use variable (X1) obtained a minimum score of 30, a maximum of 48, a mean of 40.40, and a standard deviation of 3.786. The teacher teaching methods variable (X2) produced a minimum score of 33, a maximum of 47, a mean of 39.86, and a standard deviation of 3.391.

Classical Assumption Tests

The normality test using the Kolmogorov-Smirnov method yielded an Asymp. Sig. (2-tailed) value of .200, exceeding the .05 threshold, thereby confirming that the regression residuals are normally distributed (Isnaini et al., 2025). Linearity testing demonstrated a linear relationship between technology use (X1) and learning interest (Y), with a deviation from linearity significance of .936 (> .05) and a linearity significance of .000 (< .05). Similarly, teacher teaching methods (X2) and learning interest (Y) displayed a linear relationship, with a deviation from linearity value of .135 (> .05) and a linearity significance of .000 (< .05), consistent with the criteria outlined by Handayani et al. (2022) and Nasar et al. (2024).

Multicollinearity testing indicated that both X1 and X2 exhibited Tolerance values of .753 and VIF values of 1.329, satisfying the criteria of Tolerance > .10 and VIF < 10, confirming the absence of multicollinearity (Yaldi et al., 2022). Heteroscedasticity testing via the Glejser test yielded significance values of .902 for technology use and .381 for teacher teaching methods, both exceeding .05, indicating the absence of heteroscedasticity. The scatterplot corroborated this conclusion through a random dispersion of residual points with no discernible pattern. Finally, the Durbin-Watson statistic of 2.145 fell within the acceptable range (dU = 1.662 < DW = 2.145 < 4 - dU = 2.338), confirming the absence of autocorrelation (Ghozali, 2021).

Multiple Linear Regression and Partial Hypothesis Testing (t-Test)

Following confirmation that all classical assumptions were met, multiple linear regression analysis was performed. As presented in Table 2, the resulting regression equation is:

$\hat{Y} = 12.088 + 0.187X1 + 0.508X2$

Table 2.

Multiple Linear Regression Coefficients and t-Test Results

Model	B	Std. Error	Beta (β)	t	Sig.
(Constant)	12.088	3.292	–	3.672	.001
Technology Use (X1)	.187	.077	.241	2.428	.018
Teacher Teaching Methods (X2)	.508	.086	.586	5.917	.000

Note. Dependent Variable: Students' Learning Interest (Y). Data processed by the researchers (2026).

As shown in Table 2, the constant value of 12.088 indicates that when both independent variables equal zero, the predicted value of students' learning interest is 12.088. The regression coefficient for technology use (X1 = .187) indicates that each one-unit increase in technology use is associated with a .187-unit increase in learning interest, holding teacher teaching methods constant. The regression coefficient for teacher teaching methods (X2 = .508) indicates that each one-unit increase in teaching methods is associated with a .508-unit increase in learning interest, holding technology use constant.

Technology use (X1) obtained a t-statistic of 2.428, exceeding the t-table value of 1.998 (df = 62, α = .05), with a significance value of .018 (< .05), confirming a positive and significant partial effect on students' learning interest (H1 accepted). Teacher teaching methods (X2) obtained a t-statistic of 5.917, exceeding 1.998,

with a significance value of .000 (< .05), confirming a positive and significant partial effect (H2 accepted). Notably, the standardized beta coefficient for teacher teaching methods (β = .586) was substantially higher than that of technology use (β = .241), indicating the greater relative influence of teaching methods.

Simultaneous Hypothesis Testing (F-Test)

The results of the F-test are presented in Table 3. As shown in Table 3, the F-statistic of 36.660 exceeded the F-table value of 3.14 (α = .05), with a significance value of .000 (< .05), confirming that technology use and teacher teaching methods jointly exert a positive and significant simultaneous effect on students' learning interest (H3 accepted; Susanti & Saumi, 2022).

Table 3.

Analysis of Variance (ANOVA) for the Regression Model

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	298.957	2	149.478	36.660	.000
Residual	252.797	62	4.077	–	–
Total	551.754	64	–	–	–

Note. Dependent Variable: Students' Learning Interest (Y). Predictors: (Constant), Technology Use (X1), Teacher Teaching Methods (X2). Data processed by the researchers (2026).

Coefficient of Determination

The results of the coefficient of determination analysis are displayed in Table 4. As indicated in Table 4, the R^2 value of .542 demonstrates that technology use and teacher teaching methods together account for 54.2% of the variance in students' learning interest (Prasmono & Ahdika, 2023). The remaining 45.8% is attributable to other factors outside the scope of this study, such as intrinsic student motivation, family support, classroom environment, or learning facilities.

Table 4.

Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	.736	.542	.527	2.019

Note. Predictors: (Constant), Technology Use (X1), Teacher Teaching Methods (X2). Data processed by the researchers (2026).

Effective and Relative Contribution Analysis

Table 5 presents the correlation and regression coefficients used as the basis for computing effective and relative contributions. As shown in Table 5, the correlation coefficient between technology use and learning interest was .532, and between teacher teaching methods and learning interest was .706, indicating a stronger association between teaching methods and the dependent variable.

Table 5.

Correlation and Regression Coefficients

Variable	Regression Coefficient (Beta)	Correlation Coefficient	R Square (%)
Technology Use (X1)	0.241	0.532	54.2%
Teacher Teaching Methods (X2)	0.586	0.706	

Note. Data processed by the researchers (2026).

Based on the values presented in Table 5, the effective and relative contributions of each independent variable were calculated. As presented in Table 6, the effective contribution of technology use (X1) to learning interest was 12.82%, while teacher teaching methods (X2) contributed 41.37%, for a combined effective contribution of 54.2%.

Table 6.

Effective Contribution of X1 and X2 to Y

Effective Contribution	Value	Result
Technology Use (X1)	0.241 × 0.532 × 100%	= 12.82%
Teacher Teaching Methods (X2)	0.586 × 0.706 × 100%	= 41.37%
Total		= 54.2%

Note. EC = Beta × Correlation Coefficient × 100%. Data processed by the researchers (2026).

Table 7 presents the relative contributions, which distribute the total explained variance proportionally between the two predictors. As shown in Table 7, teacher teaching methods (X2) accounted for 76.328% of the jointly explained variance, compared to 23.653% for technology use (X1), confirming that teacher teaching methods exert a more dominant influence on students' learning interest than technology use.

Table 7.

Relative Contribution of X1 and X2 to Y

Relative Contribution	Value	Percentage
Technology Use (X1)	12.82% / 54.2%	= 23.653%
Teacher Teaching Methods (X2)	41.37% / 54.2%	= 76.328%
Total		= 100%

Note. RC = EC / R^2 × 100%. Total RC = 100%. Data processed by the researchers (2026).

Discussion

The Effect of Technology Use on Students' Learning Interest

The first hypothesis test confirmed that technology use (X1) exerts a positive and significant partial effect on students' learning interest at SMK Negeri 1 Banyudono, with a t-statistic of 2.428 (> 1.998) and a significance value of .018 (< .05), leading to the acceptance of H1. The standardized beta coefficient of .241 indicates that each unit improvement in technology use is associated with a corresponding .241-unit increase in learning interest.

These findings are consistent with those of Alamsyah et al. (2023), who demonstrated that appropriate technology use in education makes learning more engaging and enjoyable, thereby increasing student activity and creativity. Gaho (2023) similarly found that technology substantially benefits the learning process and positively influences student learning interest. Aulia et al. (2025) further confirmed that technology use significantly affects learning interest.

In the context of the Creative Project and Entrepreneurship (PKK) subject, technology functions as both a learning medium and a resource that supports students in understanding theoretical and practical content. Specific tools—such as Canva for designing brand identities and promotional materials, social media platforms for market analysis, business strategy simulations, and AI tools for idea generation and marketing content creation—make the learning process more creative, adaptive, and contextually relevant. These applications align with Keller's (1987) ARCS model, as technology-enhanced instruction captures students' attention, increases the relevance of material, builds confidence through interactive practice, and generates learning satisfaction.

Among all items on the technology use questionnaire, the highest-scoring item (score = 237) was: "Digital videos and images help me better understand the material," suggesting that multimedia-based learning resources play a meaningful role in facilitating both conceptual understanding and practical application. The lowest-scoring item (score = 203) was: "Digital learning materials are easy for me to access," indicating that some students continue to experience barriers to accessing digital content, partly due to limited technological infrastructure at the school.

The Effect of Teacher Teaching Methods on Students' Learning Interest

The second hypothesis test confirmed that teacher teaching methods (X2) exert a positive and significant partial effect on students' learning interest, with a t-statistic of 5.917 (> 1.998) and a significance value of .000 (< .05), resulting in the acceptance of H2. The standardized beta coefficient of .586 indicates that improvements

in teacher teaching methods are associated with substantially stronger increases in learning interest relative to technology use.

These findings corroborate Situmeang et al. (2024), who identified teacher teaching methods as a key external factor shaping students' learning interest. Khalijah et al. (2023) similarly found that teaching methods significantly mediate students' interest and attention, particularly when instructional approaches are engaging and accessible. Sensanen et al. (2023) also demonstrated that teacher teaching methods positively influence students' learning interest. Collectively, these findings affirm that the more appropriate and effective a teacher's instructional methods, the greater the resulting student learning motivation.

In the PKK subject, the teacher's role in guiding students through planning, executing, and evaluating entrepreneurship-related projects fosters active engagement, creativity, critical thinking, and collaborative skills. The highest-scoring item on the teaching methods questionnaire (score = 235) was: "The teacher encourages students to collaborate and contribute actively in group project tasks," reflecting that collaborative instruction effectively enhances students' sense of involvement and creates meaningful learning experiences. Conversely, the lowest-scoring item (score = 119) was: "The teacher's explanations are easy to understand," suggesting that clarity of instructional delivery remains an area requiring improvement and that supplementary tools—such as technology—may help bridge gaps in comprehension.

Simultaneous Effect of Technology Use and Teacher Teaching Methods on Learning Interest

The F-test confirmed that technology use and teacher teaching methods jointly exert a positive and significant simultaneous effect on students' learning interest, with an F-statistic of 36.660 (> F-table = 3.14) and a significance value of .000 (< .05), supporting the acceptance of H3. The regression equation $\hat{Y} = 12.088 + 0.187X1 + 0.508X2$ confirms that both independent variables contribute positively to learning interest, with teacher teaching methods exhibiting a more pronounced effect.

The coefficient of determination ($R^2 = .542$) indicates that the two predictors together explain 54.2% of the variance in students' learning interest, while the remaining 45.8% is attributed to other factors. These may include intrinsic student characteristics such as motivation, academic aptitude, self-confidence, and physical health, as well as external factors including family support, classroom environment, and learning facilities.

These findings are consistent with Keller's (1987) ARCS model, which posits that attention, relevance, confidence, and satisfaction in learning can increase student motivation and interest. They also support Piaget's (1952) constructivist theory, which emphasizes that active, interactive, and meaningful learning experiences—enabled through appropriate technology and sound instructional methods—can empower students to construct knowledge independently and deepen their engagement with learning.

The dominant influence of teacher teaching methods over technology use (relative contributions of 76.328% versus 23.653%, respectively) reflects the centrality of instructional design in shaping learning outcomes. In the PKK subject, which is project-based and demands active problem-solving, teachers who employ pedagogically sound methods stimulate intrinsic curiosity and motivation. Technology, while an important enabler, functions primarily as a supportive medium whose effectiveness is contingent on how skillfully it is integrated into the teacher's instructional approach.

The highest-scoring item on the learning interest questionnaire (score = 239) was: "I am motivated to achieve good learning outcomes," indicating that students generally possess motivation for academic achievement. The lowest-scoring item (score = 196) was: "I am enthusiastic about completing tasks assigned by the teacher," suggesting that task engagement remains a challenge and underscoring the importance of applying appropriate instructional methods to sustain student effort and enthusiasm.

Conclusion

This study investigated the effects of technology use and teacher teaching methods on students' learning interest at SMK Negeri 1 Banyudono using multiple linear regression analysis. Three principal conclusions were drawn. First, technology use exerted a positive and significant partial effect on students' learning interest. Second, teacher teaching methods similarly produced a positive and significant partial effect. Third, both variables simultaneously exerted a positive and significant effect on students' learning interest. The coefficient of determination ($R^2 = .542$) indicates that these two variables jointly explained 54.2% of the variance in learning interest, with the remaining 45.8% attributable to factors beyond the scope of this study.

Teacher teaching methods emerged as the more dominant predictor, confirming that in the project-based learning environment of the PKK subject, technology serves primarily as a supportive medium within the broader framework of teacher-designed instruction. Effective and contextually appropriate teaching methods that actively involve students are therefore more critical to stimulating learning interest than the mere availability of technological tools.

These findings carry important theoretical contributions for the study of student learning interest and offer practical guidance for educators. Teachers are encouraged to develop more innovative, technology-integrated instructional strategies to enhance the quality of learning and stimulate student interest. Students are encouraged to utilize technology purposefully to support their learning. From an institutional perspective, schools should prioritize teacher professional development in technology-integrated pedagogy and work to alleviate infrastructural constraints that limit students' access to digital learning materials.

This study is subject to several limitations. The sample was restricted to grade XI MPLB students at a single school, limiting generalizability to other programs or institutions. The research focus was confined to two predictor variables, and data collection relied exclusively on self-report questionnaires. Future research should expand the sample to encompass additional vocational programs and institutions, incorporate complementary data collection methods such as observation and interviews, and explore additional variables—such as digital literacy, classroom environment quality, and teacher competency—to provide a more comprehensive understanding of the factors influencing students' learning interest in vocational education settings.

References

Alamsyah, Moh. A., Pettalongi, S. S., & Nurdin, N. (2023). Peran teknologi pendidikan dalam meningkatkan minat belajar siswa di era Society 5.0. *Prosiding Kajian Islam dan Integrasi Ilmu di Era Society 5.0 (KIIIES 5.0), 2*(1), 132–137. https://jurnal.uindatokarama.ac.id/index.php/kiiies50/article/view/1939/1005

Aulia, B. S., Azzahra, A. N. D., Suci, D. W., Naiborhu, M. B., Yusriyah, A. R., & Wulandari, A. (2025). The effect of technology use on student learning interest at SMA Negeri 13 Surabaya. *Jurnal Pendidikan dan Pembelajaran Matematika, 9*(2), 33–42. https://doi.org/10.22373/b7k56x76

Caswanda, C., Sutisna, E., & Saputra, K. E. A. (2024). Peran manajemen pendidikan pada implementasi teknologi dalam pembelajaran di sekolah. *Jurnal Ilmu Pendidikan dan Psikologi, 2*(1), 57–67. https://journal.pipuswina.com/index.php/jippsi/article/view/118/76

Chandra, Y. I., Kosdiana, K., & Riastuti, M. (2022). Aplikasi perhitungan statistik koefisien regresi korelasi linier untuk produksi minyak dan gas bumi. *Jurnal Esensi Infokom, 6*(2), 19–25. https://doi.org/10.55886/infokom.v6i2.500

Dewi, S. L. (2021). Pengaruh metode mengajar terhadap minat belajar siswa sekolah dasar pada pelajaran matematika. *Jurnal Pembelajaran Matematika Inovatif, 4*(4), 755–756. https://doi.org/10.22460/jpmi.v4i4.p755-764

Gaho, A. (2023). Analisis penggunaan teknologi dalam pembelajaran terhadap minat belajar siswa di SMK Negeri 2 Toma. *Civic Society Research and Education: Jurnal Pendidikan Pancasila dan Kewarganegaraan, 4*(2), 45–55. https://jurnal.uniraya.ac.id/index.php/JPKn/article/view/1189/985

Ghozali, I. (2021). *Aplikasi analisis multivariate dengan program IBM SPSS 26* (10th ed.). Badan Penerbit Universitas Diponegoro.

Handayani, P. T., Wijono, D., & Sulistyowati, E. (2022). Analisis pengaruh kualitas pelayanan pada loyalitas pelanggan dengan kepuasan pelanggan sebagai variabel mediasi. *JEMBA: Jurnal Ekonomi, Manajemen, Bisnis dan Akuntansi, 1*(4), 655–666. https://doi.org/10.53625/jemba.v1i4.2716

Hidayatullah, M. T., Asbari, M., Ibrahim, M. I., Hadidtia, A., & Faidz, H. (2023). Urgensi aplikasi teknologi dalam pendidikan di Indonesia. *Journal of Information Systems and Management, 2*(6), 70–73. https://doi.org/10.4444/jisma.v2i6.785

Isnaini, M., Win Afgani, M., Haqqi, A., & Azhari, I. (2025). Teknik analisis data uji normalitas. *Jurnal Cendekia Ilmiah, 4*(2), 1377–1384. https://doi.org/10.56799/jceki.v4i2.7007

Keller, J. M. (1987). Development and use of the ARCS model of instructional design. *Journal of Instructional Development, 10*(3), 2–10. https://doi.org/10.1007/bf02905780

Khalijah, W. N., Jannah, M., Rehan, H. Z., Yohana, & Yohani. (2023). Peranan metode pembelajaran terhadap minat dan prestasi belajar Al-Qur'an Hadis. *Al-Wasathiyah: Journal of Islamic Studies, 2*(2), 267–278. https://journal-ikadi.com/ojs/index.php/alwasathiyah/article/view/97/119

Mustafa, P. S. (2022). Statistika inferensial meliputi uji beda dalam pendidikan jasmani: Sebuah tinjauan. *Didaktika: Jurnal Pemikiran Pendidikan, 28*(2), 71–85. https://doi.org/10.30587/didaktika.v28i2.4166

Nasar, A., Saputra, D. H., Arkaan, M. R., Ferlyando, M. B., Andriansyah, M. T., & Pangestu, P. D. (2024). Uji prasyarat analisis. *Jurnal Ekonomi dan Bisnis, 2*(6), 786–799. http://j-economics.my.id/index.php/home/article/view/187/221

Nasution, L. M. (2017). Statistik deskriptif. *Hikmah, 14*(1), 49–55. https://e-jurnal.staisumatera-medan.ac.id/index.php/hikmah/article/view/16

Piaget, J. (1952). *The origins of intelligence in children*. W. W. Norton & Company. https://doi.org/10.1037/11494-000

Prasmono, A. S. P., & Ahdika, A. (2023). Analisis regresi berganda pada faktor-faktor yang mempengaruhi kinerja fisik preservasi jalan dan jembatan di Provinsi Sumatera Selatan. *Emerging Statistics and Data Science Journal, 1*(1), 47–56. https://journal.uii.ac.id/esds/article/view/27022/14718

Rahayu, S., Susilawati, T., Iskandar, D., Nuramat, F., Najib, M., & Majid, A. F. (2023). Komunikasi fundamental pada pendidikan kewirausahaan bagi generasi digital. *ADI Bisnis Digital Interdisiplin Jurnal, 4*(2), 81–87. https://adi-journal.org/index.php/abdi/article/view/997/684

Sensanen, E. A., Rogahang, H. J., & Sangkaeng, A. C. W. (2023). Pengaruh metode pembelajaran guru terhadap minat belajar siswa di SMA Negeri 1 Beo. *Humanlight Journal of Psychology, 4*(2), 92–107. https://doi.org/10.51667/jph.v4i2.1639

Sholeh, M., Rachmawati, R. Y., & Cahyo, E. N. (2022). Penerapan regresi linear ganda untuk memprediksi hasil nilai kuesioner mahasiswa dengan menggunakan Python. *Jurnal Dinamika Informatika, 11*(1), 13–24. https://jdi.upy.ac.id/index.php/jdi/article/view/124/62

Situmeang, D. M., Manik, A. M., Manik, G. M., Siahaan, A. D. R., Saragi, F., & Manik, R. E. A. (2024). Analisis metode mengajar guru dalam meningkatkan minat belajar siswa. *Journal on Education, 6*(4), 19814–19822. https://jonedu.org/index.php/joe/article/download/5937/4795

Slameto. (2015). *Belajar dan faktor-faktor yang mempengaruhinya* (Rev. ed.). Rineka Cipta.

Susanti, I., & Saumi, F. (2022). Penerapan metode analisis regresi linear berganda untuk mengatasi masalah multikolinearitas pada kasus Indeks Pembangunan Manusia (IPM) di Kabupaten Aceh Tamiang. *Gamma-Pi: Jurnal Matematika dan Terapan, 4*(2), 10–17. https://ejurnalunsam.id/index.php/jgp/article/view/5591/3578

Tiwow, D., Wongkar, V., Mangelep, N. O., & Lomban, E. A. (2022). Pengaruh media pembelajaran animasi Powtoon terhadap hasil belajar ditinjau dari minat belajar peserta didik. *Journal Focus Action of Research Mathematic (Factor M), 4*(2), 107–122. https://doi.org/10.30762/factor_m.v4i2.4219

Yaldi, E., Pasaribu, J. P. K. P., Suratno, E., Kadar, M., Gunardi, Naibaho, R., Hati, S. K., & Aryati, V. (2022). Penerapan uji multikolinieritas dalam penelitian manajemen sumber daya manusia. *Jurnal Ilmiah Manajemen dan Kewirausahaan (JUMANAGE), 1*(2), 94–102. https://ejournal.unama.ac.id/index.php/jumanage/article/view/89/65

Zulfikar, R., Sari, F. P., Fatmayati, A., Wandini, K., Haryati, T., Jumini, S., Nurjanah, Annisa, S., Kusumawardhani, O. B., Mutiah, R., Linggi, A. I. L., & Fadilah, H. (2024). *Metode penelitian kuantitatif: Teori, metode dan praktik*. CV Widina Media Utama. https://repository.penerbitwidina.com/publications/567988/metode-penelitian-kuantitatif-teori-metode-dan-praktik