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Learning Facilities, Methods, and Media: Effects on Vocational Student Interest

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ABSTRACT

Learning interest is widely regarded as a precondition for effective engagement in vocational education, yet the relative contribution of learning facilities, teaching methods, and instructional media to this interest is rarely tested jointly in a single model. This study examined the effect of learning facilities, teaching methods, and instructional media on the learning interest of grade XI Office Management students at SMK Negeri 4 Makassar. A quantitative correlational design was employed, and data were collected from 81 respondents through a Likert-scale questionnaire (10 items per variable). Descriptive statistics showed that all four variables fell predominantly in the "good" category. Classical assumption tests confirmed linear relationships for all three predictors, normally distributed residuals, and no multicollinearity (VIF between 1.465 and 1.827). Pearson correlation showed that learning facilities ($r = 0.395$), teaching methods ($r = 0.425$), and instructional media ($r = 0.507$) were each significantly, positively correlated with learning interest (all $p < 0.001$). Multiple regression confirmed this pattern: the model was significant, $F(3, 77) = 10.635$, $p < 0.001$, explaining 29.3% of the variance in learning interest ($R^2 = 0.293$). Instructional media contributed the largest share of explained variance (16.9%), followed by teaching methods (6.8%) and learning facilities (5.6%). These findings suggest that, among the three factors tested, instructional media is the most substantively important lever for cultivating vocational students' learning interest, without diminishing the complementary contributions of adequate facilities and effective teaching methods.

Keywords: learning facilities; teaching methods; instructional media; learning interest; vocational education

INTRODUCTION

Learning interest is a fundamental prerequisite for meaningful engagement in vocational education: students who are genuinely interested in what they are studying are more likely to participate actively, persist through difficulty, and develop the practical competencies that vocational programs are designed to build. Research consistently frames learning interest among vocational students as shaped by non-intellectual factors, character, motivation, and emotional engagement, more than by intelligence alone, and by a combination of personal, social, institutional, and curricular influences (Pasaribu, Simanjuntak, & Situmeang, 2024; Silaban, Purba, Pasaribu, Simanullang, & Limbong, 2026; Sripan & Sujivorakul, 2020).

Among institutional influences, learning facilities have been widely recognized as factors influencing of student interest and engagement (Mulyati & Suryaman, 2025; Nuzli, 2021; Qoirul & Halmita, 2026). Student-centred, well-resourced learning environments are associated with higher engagement and reduced dropout in vocational tracks, and course designs that make full use of available facilities and practical resources are linked to stronger

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academic engagement (Cunningham, Gorman, & Maher, 2024; Izzatunnisa, Amini, Adha, Nasution, & Fathoni, 2024; Putra, Mujiwati, & Ali, 2026). At the same time, many vocational schools face persistent challenges in providing and maintaining adequate facilities, including funding limitations, outdated equipment, and the difficulty of keeping pace with rapid technological change, challenges that are especially pronounced in Indonesian vocational high schools navigating the demands of Industry 4.0 (Asniwaty, Sumarto, Abdullah, & Setiawan, 2020; Pambayun, Sofyan, & Haryana, 2020).

Teaching methods represent a second, well-documented influence on learning interest. Innovative, active, and student-centred teaching approaches, including case studies, project-based learning, and interactive discussion, are consistently associated with higher motivation and engagement than traditional, lecture-based instruction, which tends to leave students comparatively passive (Ammer & Alnasser, 2025; Costa & Reis, 2025; Merla Madjid et al., 2025). Teachers themselves play a pivotal role in this dynamic: their ability to organize communication, facilitate dialogue, and draw on practical enterprise experience directly shapes how engaged and interested their students become (Hutabarat, Asri, & Nababan, 2024; Sari, Yusnan, & Matje, 2022; Surahman et al., 2025).

Instructional media represents another factor influencing, one particularly salient in vocational and technical subjects where practical, hands-on understanding is essential (Hakim, 2025; Saleh, Syahruddin, Saleh, & Azis, 2023). Interactive and web-based instructional media have been shown to increase vocational students' attention and interest by making abstract or technical content more concrete and engaging, and by offering practice-oriented learning experiences that mirror real workplace tasks (Herlambang, Mutmainnah, & Pradana, 2023; Sawitri, Sekali, Barus, Sahara, & Budi, 2024; Zalsyabila, 2025). In the specific context of Indonesian office administration education, learning media has been shown to improve the quality of student progress in vocational office administration programs, underscoring the relevance of this factor for the population examined in the present study (Niswaty & Arhas, 2019).

Although learning facilities, teaching methods, and instructional media are each individually well supported as influences on vocational student interest, studies that test their relative and joint contribution within a single statistical model remain comparatively uncommon, particularly in the context of Indonesian office administration programs. This gap matters practically: if, for instance, instructional media proves to be the strongest lever once all three factors are modeled together, that has direct implications for where limited school resources and teacher development effort should be concentrated. Pearson correlation and multiple regression are well-established tools for this kind of joint modeling in educational research, allowing researchers to assess bivariate associations before quantifying each predictor's independent contribution (Ramadhani & Albina, 2025). This study therefore examines the combined and partial effects of learning facilities, teaching methods, and instructional media on the learning interest of grade XI Office Management students at SMK Negeri 4 Makassar.

METHODS

This study used a quantitative correlational design to examine the relationship between learning facilities (X1), teaching methods (X2), and instructional media (X3) as independent variables, and learning interest (Y) as the dependent variable. The population and sample were grade XI Office Management students at SMK Negeri 4 Makassar, with data collected from 81 respondents through a self-administered questionnaire.

Each variable was measured using 10 Likert-scale items. Descriptive statistics (mean, median, mode, and frequency distribution) were computed for each variable. Classical

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assumption tests were performed prior to hypothesis testing: a linearity test using Deviation from Linearity in the ANOVA table, a normality test using the one-sample Kolmogorov-Smirnov test, and a multicollinearity test using the Variance Inflation Factor (VIF), with VIF < 10 indicating no multicollinearity. Hypotheses were tested using Pearson correlation analysis and multiple linear regression analysis, comparing calculated r and F values against their respective critical table values at $\alpha = 0.05$ (r-table = 0.216 for n = 81). All statistical procedures were carried out using IBM SPSS Statistics. It is noted as a limitation that the underlying data did not include a reported item-level validity and reliability assessment of the questionnaire instrument; this study therefore proceeds on the assumption that the instrument was adequate, consistent with the source data available, while flagging instrument validation as an area for more complete reporting in future replications.

RESULT AND DISCUSSION

This section presents the descriptive statistics, classical assumption tests, and correlation and regression analyses, followed by a discussion linking each finding to the relevant literature. This study examined the effects of learning facilities, teaching methods, and instructional media on the learning interest of 81 grade XI Office Management students at SMK Negeri 4 Makassar. All three predictors were significantly correlated with learning interest, and the combined regression model was statistically significant, explaining 29.3% of the variance in learning interest.

Instructional media was the largest individual contributor to the explained variance (16.9%), followed by teaching methods (6.8%) and learning facilities (5.6%). These findings suggest that efforts to strengthen vocational students' learning interest in this context should prioritize the development and use of instructional media specifically, while continuing to improve teaching methods and learning facilities as complementary, longer-term investments. Future research is recommended to report full instrument validity and reliability testing, to replicate this study across multiple vocational schools and study programs, and to examine additional predictors, such as motivation and parental involvement, to account for the substantial share of variance left unexplained by the present model.

Central Tendency and Frequency Distribution

The descriptive statistics of the four variables are presented in Table 1. On average, learning facilities, teaching methods, instructional media, and learning interest all fell in the "good" category, based on each variable's dominant frequency interval.

Table 1. Descriptive Statistics of Research Variables (N = 81)

Variable	Mean	Median	Mode	Dominant Category
Learning Facilities (X1)	36.28	37.0	39.0	Good (34-41)
Teaching Methods (X2)	35.54	35.0	35.0	Good (34-41)
Instructional Media (X3)	36.72	37.0	38.0	Good (34-41)
Learning Interest (Y)	38.46	39.0	40.0	Good (34-41)

Source: SPSS output, processed by the authors (2024).

Classical Assumption Tests

The linearity test showed Deviation from Linearity significance values of 0.267 for learning facilities, 0.620 for teaching methods, and 0.890 for instructional media, all greater than 0.05,

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confirming a linear relationship between each predictor and learning interest. The Kolmogorov-Smirnov normality test produced an Asymp. Sig. (2-tailed) of 0.200, greater than 0.05, indicating that the residuals are normally distributed.

The multicollinearity test found VIF values of 1.465 (learning facilities), 1.629 (teaching methods), and 1.827 (instructional media), all below the threshold of 10, indicating that the three predictors are free from multicollinearity and can be used together in the regression model.

Correlation Analysis

Pearson correlation analysis (Table 2) shows that all three predictors are significantly, positively correlated with learning interest. Learning facilities show a weak relationship ($r = 0.395$, $p < 0.001$); teaching methods and instructional media show moderate relationships ($r = 0.425$ and $r = 0.507$ respectively, both $p < 0.001$). For all three, the calculated R-value exceeds the r-table value (0.216 for $n = 81$), confirming that each relationship is statistically significant.

Table 2. Pearson Correlation between Predictors and Learning Interest

Variable	r	Sig. (2-tailed)	Strength	Conclusion
Learning Facilities (X1)	0.395	< 0.001	Weak	Significant
Teaching Methods (X2)	0.425	< 0.001	Moderate	Significant
Instructional Media (X3)	0.507	< 0.001	Moderate	Significant

Source: SPSS output, processed by the authors (2024).

Multiple Linear Regression Analysis

The multiple regression model (Table 3) produced $R = 0.541$ and $R^2 = 0.293$, indicating that learning facilities, teaching methods, and instructional media together have a moderate combined correlation with, and explain 29.3% of the variance in, learning interest, with the remaining 70.7% explained by other variables outside this model.

The ANOVA test produced $F(3, 77) = 10.635$ with a significance value below 0.001 ($p < 0.05$). Because the F-count (10.635) exceeds the F-table (df1 = 3, df2 = 77, F-table = 2.72), the regression model is statistically significant, meaning that learning facilities, teaching methods, and instructional media jointly influence learning interest

Table 3. Model Summary and ANOVA for the Regression Model

R	R Square	F	df1, df2	F-table	Sig.
0.541	0.293	10.635	3, 77	2.72	< 0.001

Source: SPSS output, processed by the authors

Based on the standardized coefficients and zero-order correlations, the effective contribution of each predictor to the 29.3% total explained variance is presented in Table 4: instructional media contributed the largest share (16.9%), followed by teaching methods (6.8%) and learning facilities (5.6%), together summing to approximately 29.3%, matching the model's R^2.

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Table 4. Effective Contribution of Each Predictor to R^2

Variable	Standardized Beta	r	Contribution (β × r)
Learning Facilities (X1)	0.142	0.395	5.6%
Teaching Methods (X2)	0.159	0.425	6.8%
Instructional Media (X3)	0.334	0.507	16.9%

Source: computed by the authors from the standardized coefficients and zero-order correlations

$$\dot{Y} = 13.061 + 0.130X1 + 0.197X2 + 0.372X3 + \varepsilon$$

The unexplained variance in this model is reflected in the error term, with
$= \sqrt{(1 - R^2)}$
$= \sqrt{(1 - 0.293)} = 0.841.$

CONCLUSION

This study examined the effects of learning facilities, teaching methods, and instructional media on the learning interest of 81 grade XI Office Management students at SMK Negeri 4 Makassar. All three predictors were significantly correlated with learning interest, and the combined regression model was statistically significant, explaining 29.3% of the variance in learning interest.

Instructional media was the largest individual contributor to the explained variance (16.9%), followed by teaching methods (6.8%) and learning facilities (5.6%). These findings suggest that efforts to strengthen vocational students' learning interest in this context should prioritize the development and use of instructional media specifically, while continuing to improve teaching methods and learning facilities as complementary, longer-term investments. Future research is recommended to report full instrument validity and reliability testing, to replicate this study across multiple vocational schools and study programs, and to examine additional predictors, such as motivation and parental involvement, to account for the substantial share of variance left unexplained by the present model

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