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The Influence of Digital Facilities, Digital Literacy, and Work Motivation on the Performance of State Vocational High School Teachers in Kampar Regency

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A R T I C L E I N F O

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A B S T R A C T

This study examines the influence of digital facilities, digital literacy, and work motivation on the performance of vocational high school teachers in Kampar Regency. Using a quantitative approach with multiple regression analysis, data were collected from 123 teachers through structured questionnaires. The results show that digital facilities significantly affect teacher performance (p = 0.005), while digital literacy and work motivation do not have a significant individual impact (p = 0.066 and 0.090). However, collectively, these three factors significantly influence teacher performance (p = 0.000, F = 10.149). The findings highlight the importance of optimizing digital resources and fostering a supportive work environment to enhance teaching effectiveness in vocational education.

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INTRODUCTION

Modern education has significantly evolved due to globalization and digitalization, emphasizing the need for technology in teaching and learning. Vocational high schools (SMK) particularly require digital facilities to prepare students for industrial competition. However, in Kampar Regency, limited infrastructure and budget constraints hinder the provision of adequate digital tools. Research suggests that quality hardware and educational software can enhance teaching effectiveness, making it essential to evaluate their impact on teacher performance in this region.

Digital literacy is another crucial factor in technology-based education. It goes beyond basic device operation, encompassing the ability to evaluate and utilize digital platforms for learning. Teachers with strong digital literacy create more interactive and engaging lessons, improving educational outcomes. Unfortunately, many vocational school teachers in Kampar Regency lack sufficient digital literacy, limiting effective technology integration. Studies indicate that restricted access to technology further impedes teachers' ability to adopt digital tools in their teaching processes.

Work motivation also plays a vital role in teacher performance. Factors such as school leadership support, professional development, and a conducive work environment influence motivation level. Motivated teachers are more likely to adopt innovative teaching methods and integrate technology into their classrooms. Conversely, a lack of motivation hinders educational progress. Research suggests that adequate digital facilities and digital literacy training can boost motivation, ultimately enhancing the quality of vocational education.

Teacher performance is measured by their effectiveness in lesson delivery, classroom management, and the integration of technology-based methods. High-performing teachers positively impact student learning and strengthen school reputations. However, inadequate digital resources and low digital literacy pose significant challenges for vocational school teachers in Kampar Regency. Addressing these barriers through proper support and training can lead to improved educational quality and better student outcomes.

To enhance teacher performance, providing digital facilities and digital literacy training is essential. Studies highlight that technology-focused training significantly improves teachers' confidence and skills. Moreover, fostering a supportive work environment, recognizing achievements, and offering professional development opportunities can further increase motivation. Overcoming challenges such as limited infrastructure and low digital literacy requires collaboration between the government, educational institutions, and communities to ensure vocational education in Kampar Regency adapts to the demands of the digital era.

LITERATURE REVIEW

Performance of Vocational High School Teachers

Teacher performance is a key factor in the education system, directly impacting learning quality and student outcomes. It involves meeting established standards through effective and efficient task execution. Optimal performance contributes to students' academic and character development, encompassing intellectual ability, professional attitude, communication skills, and classroom management.

In Vocational High Schools (SMK), teacher performance is critical, as teachers not only deliver theoretical knowledge but also guide students in acquiring practical skills for the workforce. Key performance indicators include pedagogical competence, professional capability, social interaction, and personal development. Effective communication with stakeholders further enhances a productive learning environment.

Teacher performance evaluation considers subject mastery, teaching methodologies, classroom management, creativity, student motivation, assessment strategies, and the ability to provide remedial and enrichment programs. These factors collectively support students in becoming competent and competitive professionals.

Digital Facilities

Digital facilities in education refer to various tools and technologies that support the learning and teaching process. This includes hardware (computers, tablets, smartphones, projectors), software (e-learning applications, Learning Management Systems), internet networks, and educational applications that enhance the effectiveness of education.

In Vocational High Schools (SMK), digital facilities are essential as vocational education requires up-to-date technology relevant to industry demands. Adequate digital resources enable teachers to design more engaging and interactive learning experiences, increasing student motivation. However, unequal access to digital tools and internet connectivity remains a challenge, particularly in rural areas, often due to financial constraints.

To ensure equal access to digital facilities, government support and private sector collaboration are crucial. Indicators for measuring digital facilities in schools include the availability of hardware, educational software, internet accessibility, quality of learning spaces, and technical support.

Digital Literacy

Digital literacy is the ability to search, understand, and use digital information effectively and responsibly. It involves not only technical skills in operating digital devices but also awareness of privacy, ethics, and responsible online interactions.

In Vocational High Schools (SMK), digital literacy is crucial for teachers to integrate technology into learning effectively. A high level of digital literacy

allows teachers to design engaging lessons, manage virtual classrooms, and assess student performance efficiently. Additionally, teachers must navigate various learning platforms and industry applications to ensure students gain skills relevant to the job market.

Low digital literacy can hinder the adoption of educational technology, making teacher training essential to enhance their technological proficiency. Digital literacy also fosters collaboration between teachers and students, promoting interactive and engaging learning environments.

According to Karsoni Berta Dinata (2021), digital literacy consists of eight key components:

1. Basic and Advanced ICT Skills – Using technology effectively.
2. Creative and Innovative Thinking – Utilizing technology for knowledge building and problem-solving.
3. Collaboration – Working with others on digital platforms.
4. Effective Communication – Understanding and conveying information through digital media.
5. Information Evaluation – Searching, assessing, and selecting quality digital content.
6. Critical Thinking – Analyzing and evaluating digital information.
7. Cultural and Social Awareness – Understanding ethical and legal aspects of technology use.
8. Cybersecurity Awareness – Protecting personal data and ensuring online safety.

Enhancing digital literacy among educators is vital for improving the quality of vocational education and preparing students for the digital economy.

Work Motivation

Teacher work motivation significantly impacts performance, effectiveness, and student engagement. Motivation can be intrinsic (driven by passion and personal growth) or extrinsic (influenced by external rewards and recognition).

Research highlights several factors affecting teacher motivation:

- Teaching Competence: Increased knowledge and skills boost intrinsic motivation.
- Self-Efficacy: Confidence in teaching abilities enhances motivation.
- School Culture: A positive environment improves motivation and performance.
- Recognition & Support: Emotional and financial rewards contribute to higher motivation.
- Job Satisfaction: A sense of fulfillment leads to greater dedication.

Key elements that sustain teacher motivation include career development opportunities, leadership support, fair compensation, and a collaborative school climate. Strengthening these aspects is crucial for improving education quality.

METHODS

This study employs a quantitative research approach using multiple regression correlation analysis. According to Sugiyono (2018), multiple linear regression is used to predict variations in the dependent variable based on at least two independent variables. In this study, the independent variables include Digital Facilities (X_1), Digital Literacy (X_2), and Work Motivation (X_3), while the dependent variable is the Performance of Vocational High School (SMK) Teachers.

The research is conducted in public vocational high schools in Kampar Regency, from November 2024 to January 2025. The study population consists of 192 teachers from five vocational schools: Tapung 1 vocational high school (45 teachers), Tapung Hulu 1 vocational high school (47 teachers), Tapung Hulu 2 vocational high school (25 teachers), Kespar Bangkinang vocational high school (40 teachers), and Tapung Hilir 1 vocational high school (35 teachers).

Data collection utilizes questionnaires designed to measure the independent variables of Digital Facilities, Digital Literacy, and Work Motivation. These instruments are developed based on prior research and theoretical frameworks, incorporating closed-ended Likert-scale questions. The Likert scale ranges from Strongly Agree (5) to Strongly Disagree (1), allowing respondents to express their attitudes and perceptions toward the studied variables.

For data analysis, simple linear regression is used to examine the relationship between each independent variable and the dependent variable. Pearson's correlation coefficient is applied to assess the strength of these relationships. Additionally, multiple regression analysis with three predictors is employed to predict the dependent variable based on multiple independent variables. Simultaneous testing using the F-test determines whether all independent variables collectively influence the dependent variable. If the calculated F-value is greater than the critical F-table value, it indicates a significant relationship between the independent and dependent variables. Conversely, if the F-value is lower, no significant relationship is observed.

RESULTS AND DISCUSSION

Descriptive Analysis

The descriptive analysis in this study presents data obtained through statistical descriptive analysis. This analysis aims to provide a concise summary of the collected data and offer a general overview of the distribution of the examined variables. The hypothesis testing results presented in this analysis serve as an initial step in the decision-making process. The descriptive data include information on the studied variables in the form of distribution tables, incorporating various statistical calculations such as minimum (Min), maximum (Max), mean (Mean), median (Me), mode (Mo), standard deviation (SD), and criterion scores, as outlined by Cresswell (2012).

Table 1. Summary of Statistical Data Description

Statistics					
		Digital Facilities (X_1)	Digital Literacy (X_2)	Work Motivation (X_3)	Performance of Vocational High School Teacher (Y)
N	Valid	123	123	123	123
	Missing	0	0	0	0
Mean		59.7805	69.0163	69.2276	73.0325
Median		60.0000	69.0000	69.0000	73.0000
Mode		58.00	67.00	68.00	73.00
Std. Deviation		3.07698	3.52737	3.60285	3.69300
Variance		9.468	12.442	12.981	13.638
Minimum		52.00	60.00	60.00	64.00
Maximum		65.00	75.00	75.00	80.00
Sum		7353.00	8489.00	8515.00	8983.00

The analysis of four variables—Digital Facilities, Digital Literacy, Work Motivation, and Vocational High School Teacher Performance—shows that all fall into the very high category, with scores exceeding 81%. The statistical summary indicates that Digital Facilities had a mean score of 59.78, Digital Literacy 69.02, Work Motivation 69.23, and Teacher Performance 73.03. Each variable's total score and criterion score further support their classification in the highest category, highlighting strong performance across all measured aspects.

Hypothesis Testing Results

The hypothesis testing was conducted using Excel and SPSS software. Simple regression analysis was employed to examine the effect of each independent variable on the dependent variable, while multiple regression analysis was used to assess their combined influence and overall correlation. The summary of the hypothesis testing results is presented in the table.

Table 2. Partial Hypothesis Testing

Hypothesis	T-Value	Sig.	Description
X_1 on Y	2.869	0.005	There is an Influence
X_2 on Y	1.854	0.066	No Influence
X_3 on Y	1.710	0.090	No Influence

Table 3. Simultaneous Hypothesis Testing

Hypothesis	T-Value	Sig.	Description
X_1, X_2 and X_3 on Y	10.149	0.000	There is an Influence

The explanation of the analysis results to determine the influence between each variable is as follows:

Table 4. The explanation of the analysis results

Coefficients[a]					
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	30.757	7.776		3.955	.000
	Digital Facilities (X_1)	.316	.110	.263	2.869	.005
	Digital Literacy (X_2)	.183	.099	.175	1.854	.066
	Work Motivation (X_3)	.155	.091	.151	1.710	.090
a. Dependent Variable: Performance of Vocational High School Teacher (Y)						

Based on the significance values from the Coefficients Table, the significance value for the Digital Facilities variable is 0.005 < 0.05, indicating that Ho is rejected and Ha is accepted. This means that the Digital Facilities variable (X1) has a significant effect on the Vocational High School (SMK) Teachers' Performance (Y).

For Digital Literacy, the significance value from the Coefficients Table is 0.066 > 0.05, indicating that Ho is accepted and Ha is rejected. This means that the Digital Literacy variable (X_2) does not have a significant effect on the Vocational High School (SMK) Teachers' Performance (Y).

Regarding Work Motivation and its impact on Vocational High School (SMK) Teachers' Performance in Kampar Regency, the significance value from the Coefficients Table is 0.090 > 0.05, indicating that Ho is accepted and Ha is rejected. This means that the Work Motivation variable (X3) does not have a significant effect on the Vocational High School (SMK) Teachers' Performance (Y).

The fourth hypothesis tested in this study examines the influence of Digital Facilities, Digital Literacy, and Work Motivation on Vocational High School (SMK) Teachers' Performance in Kampar Regency. Multiple linear regression analysis was conducted using SPSS 25.

The influence of Digital Facilities, Digital Literacy, and Work Motivation on Vocational High School (SMK) Teachers' Performance can be observed in the following table:

Table 5. The influence of Digital Facilities, Digital Literacy, and Work Motivation on Vocational High School (SMK) Teachers' Performance

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.451[a]	.204	.184	3.33670
a. Predictors: (Constant), Digital Facilities (X_1), Digital Literacy (X_2) Work Motivation (X_3),				

The R value of 0.451 indicates the presence of an influence between the dependent variable, vocational high school (SMK) teacher performance, and all

independent variables, namely Digital Facilities, Digital Literacy, and Work Motivation, performance of vocational high school teacher simultaneously (collectively). The R Square value or Coefficient of Determination is positive at 0.204 (derived from 0.451 × 0.451). This means that variations in the performance of vocational high school teacher variables can be explained by Digital Facilities, Digital Literacy, and Work Motivation collectively by 20.4%, while the remaining 79.6% (100 - 20.4 = 79.6) is explained by other factors.

The results of the multiple linear regression coefficients for Digital Facilities, Digital Literacy, and Work Motivation on performance of vocational high school teacher are as follows:

Table 6. The results of the multiple linear regression coefficients for Digital Facilities, Digital Literacy, and Work Motivation on performance of vocational high school teacher

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	30.757	7.776		3.955	.000
	Digital Facilities(X_1)	.316	.110	.263	2.869	.005
	Digital Literacy (X_2)	.183	.099	.175	1.854	.066
	Work Motivation (X_3)	.155	.091	.151	1.710	.090
a. Dependent Variable: Performance of Vocational High school Teacher (Y)						

The regression equation obtained based on the coefficients table is as follows:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 \ldots\ldots\ldots\ldots\ldots (1)$$

$$Y = 30{,}757 + 0{,}316\ X_1 + 0{,}183\ X_2 + 0{,}155\ X_3 \ldots\ldots\ldots\ldots\ldots (2)$$

The regression equation obtained based on the coefficients table is $Y=30.757+0.316X_1+0.183X_2+0.155X_3$. This equation indicates that the coefficient for Digital Facilities (X_1) is 0.316, meaning that a 1-point increase in Digital Facilities will result in a 0.316-point increase in Performance of Vocational High School Teacher (Y), assuming Digital Literacy (X_2) remains constant. Similarly, the coefficient for Digital Literacy (X_2) is 0.183, which implies that a 1-point increase in Digital Literacy will lead to a 0.183-point increase in Performance of Vocational High School Teacher, assuming Digital Facilities (X_1) remains unchanged. Furthermore, the coefficient for Work Motivation (X_3) is 0.155, indicating that a 1-point increase in Work Motivation will increase Performance of Vocational High School Teacher by 0.155 points, assuming both Digital Facilities (X_1) and Digital Literacy (X_2) remain constant. To determine whether the hypothesis is accepted or rejected, the results of the ANOVA test should be examined.

ANOVA Test on Digital Facilities, Digital Literacy, and Work Motivation in Relation to Performance of Vocational High School Teacher

Table 7. ANOVA Test on Digital Facilities, Digital Literacy, and Work Motivation in Relation to Performance of Vocational High School Teacher

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	338.977	3	112.992	10.149	.000[b]
	Residual	1324.892	119	11.134		
	Total	1663.870	122			
a. Dependent Variable: Performance of Vocational High School Teacher (Y)						
b. Predictors: (Constant), Work Performance (X_3), Digital Facilities (X_1), Digital Literacy (X_2)						

The F-test results indicate a significance value of 0.000, which is less than 0.05. Additionally, the calculated F-value (F-statistic) is 10.149, which is greater than the critical F-table value for F (k : n − k) =F (3 : 120) F (k : n – k) = F (3 : 120). With a sample size of 123, the F-table value at a 5% significance level is 2.680. Since the calculated F-value exceeds the F-table value, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_a) is accepted. This confirms that the independent variables X_1, X_2, and X_3 have a simultaneous effect on the dependent variable Y. Therefore, it can be concluded that Digital Facilities, Digital Literacy, and Work Motivation collectively influence the performance of vocational high school (SMK) teachers in Kampar Regency.

DISCUSSION

This study examines the impact of digital facilities on teachers' performance in Vocational High Schools (SMK). The T-test results show a significance value of 0.005, indicating that digital facilities significantly enhance teacher performance. This finding suggests that improving access to digital tools can lead to better teaching outcomes. Consequently, educational institutions should focus on enhancing digital infrastructure to support effective teaching and learning.

This section explores the role of digital literacy in influencing performance of Vocational High School teachers. The T-test results indicate a significance value of 0.066, showing that digital literacy does not have a significant effect on performance. While digital literacy is essential for utilizing technology in education, factors such as varying levels of adoption and insufficient training may limit its impact. To maximize the benefits of digital literacy, schools should invest in training programs and provide better support for teachers to integrate technology effectively.

This study also assesses the impact of work motivation on teacher performance in vocational high school. The T-test results reveal a significance value of 0.090, indicating that work motivation does not significantly influence performance. Factors such as an unsupportive work environment, lack of

incentives, and low work discipline may contribute to this result. To improve teacher motivation and performance, schools should implement better incentive structures, provide professional development opportunities, and foster a more supportive work culture.

This section evaluates the combined impact of digital facilities, digital literacy, and work motivation on performance of vocational high school teachers. The F-test results show a significance value of 0.000, confirming that these three variables collectively influence teacher performance. Digital facilities provide essential resources for teaching, digital literacy enhances teachers' ability to use technology, and work motivation affects engagement and productivity. Therefore, a holistic approach that integrates these factors is necessary to improve educational outcomes. Schools should prioritize the development of digital infrastructure, enhance digital literacy training, and implement strategies to boost teachers' motivation for better overall performance.

CONCLUSIONS AND RECOMMENDATIONS

The study's findings reveal that digital facilities significantly impact the performance of vocational high school teachers in Kampar Regency, as indicated by a significance value of 0.005. However, digital literacy and work motivation do not show a significant effect, with significance values of 0.066 and 0.090, respectively. Despite this, the F-test results indicate that digital facilities, digital literacy, and work motivation collectively influence teacher performance, with a significance value of 0.000 and an F-value of 10.149. Additionally, the Model Summary test shows an R-value of 0.451, suggesting a correlation between teacher performance and these independent variables when considered together.

Based on these findings, several recommendations can be made. Schools should enhance digital facilities by providing better internet access and educational software to support teachers' effectiveness. Vocational teachers are encouraged to participate in ongoing digital literacy training to improve their use of technology in teaching. Policymakers should develop supportive policies for teacher training, along with incentives and a conducive work environment to boost motivation. Future research should explore additional variables, such as school culture and academic supervision, to gain a deeper understanding of the factors affecting teacher performance.

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