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The Influence of Teacher Professional Training, Work Motivation, and Digital Literacy on Junior High School Teacher Performance in Region 1 Of Siak District

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A B S T R A C T
In the era of 21st-century educational transformation, enhancing teacher competence remains a strategic challenge for the successful implementation of new curricula and technology-based learning. However, the contributions of professional training, work motivation, and digital literacy to teacher performance in underdeveloped regions require empirical exploration. This study aimed to analyze the effects of professional training (X_1), work motivation (X_2), and digital literacy (X_3) on the performance of junior high school teachers in Region 1 of Siak District. A quantitative ex post facto design was employed, involving 115 teachers selected via proportional random sampling. These findings underscore the need for integrated strategies to enhance teacher performance through contextualized training programmes, motivational support systems, and individualized digital literacy development. Practical implications include designing adaptive training, establishing a performance-based reward system, providing technical mentoring, and fostering multi-stakeholder collaboration to improve learning quality.

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INTRODUCTION

Teacher performance is a key indicator in determining educational success in schools, where high-performing teachers are able to create active learning processes oriented toward students' learning outcomes (Dudung, 2018; Eliza et al., 2022). Beyond academic competence, the quality of teacher performance is also influenced by external factors such as professional training, work motivation, and digital literacy (Putri et al., 2023). In the context of national education policy, enhancing teacher professionalism through continuous programmes has become a priority agenda to address the challenges of 21st-century education transformation (Dudung, 2018). However, studies in Junior High Schools (SMP) in Region 1 of Siak Regency reveal low participation in online training, where most teachers join only for administrative requirements rather than a conscious drive to develop competence (Eliza et al., 2022; Putri et al., 2023). Interview data also confirm disparities in digital readiness and motivation, so training has not optimally improved overall teacher performance. Thus, strengthening teacher performance in the region requires a comprehensive approach integrating professional training, work motivation, and digital literacy as foundational pillars of educational success.

Professional teacher training is a crucial instrument for improving the quality of learning in schools, where adaptively and innovatively designed training enables teachers to develop teaching methods relevant to student needs (Eliza et al., 2022; Putri et al., 2023; Hadde Syukria, interview). Previous studies affirm that teachers who actively participate in training have higher confidence in planning technology-based instruction (Eliza et al., 2022). However, in Siak Regency, teacher participation in online training remains limited, with many joining only when there are administrative obligations rather than a motivation to develop competence (Hadde Syukria, interview). Limited access and digital readiness become inhibiting factors, as conveyed by Haslinda, a social science teacher, who stated her reluctance to attend online training except to obtain certificates. In addition, training effectiveness is strongly influenced by teachers' emotional engagement and internal motivation, so online training alone is insufficient without an awareness of the importance of continuous learning (Ikbal, 2018). This condition indicates the need for a comprehensive evaluation of teacher training implementation in the region, in terms of quality, accessibility, and efforts to build teachers' intrinsic motivation for active engagement.

Beyond training, work motivation is a determining factor in teachers' dedication to their professional duties at school (Fariha, 2023; Sholeh, 2023; Haslinda, interview). Motivation, both intrinsic and extrinsic, has been shown to encourage teachers to manage classrooms and develop teaching materials more creatively and enthusiastically (Fariha, 2023). However, based on observations and interviews with Haslinda, a number of teachers were found to often arrive late to class and show low work enthusiasm, indicating motivational issues that have yet to be addressed systematically (Haslinda, interview). A work environment that does not support initiative also weakens teachers' motivation to innovate and collaborate in teaching, so their potential is not fully realized (Ardiansyah & Pujianto, 2023). This is exacerbated by an individualistic work culture in which teachers' initiatives to hold internal seminars often receive

limited collegial support. Therefore, increasing work motivation cannot be carried out in a partial manner; it must be integrated through creating a positive school environment, providing recognition, and strengthening a collaborative culture so that teacher performance can improve collectively and sustainably.

Technological developments require teachers to possess digital literacy as a core competence for facing modern learning challenges (Lase et al., 2022; Sriwulan, 2022; Hadde Syukria, interview). Digital literacy not only supports the effectiveness of teaching and learning processes but also increases student participation and motivation in class. However, field findings show a gap in technological mastery among teachers, where younger teachers tend to be more adaptive, while senior teachers—especially those over 50 years—still have difficulty utilizing digital devices optimally (Hadde Syukria, interview). This issue is reinforced by Haslinda's acknowledgement that she feels less capable of operating technology, thus unable to integrate digital learning effectively. Research by Sumarni et al. (2022) asserts that low ICT proficiency is a major barrier to digital transformation in schools. In addition, Adji et al. (2022) state that more specific and personal digital literacy training is needed so senior teachers can adapt to change. Accordingly, strategies for developing digital literacy in schools must consider individual needs and each teacher's readiness in a continuous manner.

Although the COVID-19 pandemic accelerated digital transformation in education, not all teachers were able to adapt optimally to these changes (Loretha & Albar, 2023; Irdaleni, interview; Hadde Syukria, interview). Irdaleni, a science teacher, stated that the pandemic provided a positive impetus for teachers to become accustomed to using technology in learning, yet skill gaps among individuals remain. This finding aligns with Loretha & Albar (2023), who found that technology utilization during the pandemic significantly improved teachers' digital skills. On the other hand, Hadde Syukria emphasized that not all teachers actively participated in digital literacy training, resulting in disparities in technological mastery within schools. Differences in teachers' backgrounds and readiness present their own challenges in building a digital culture at school. Therefore, effective digital literacy development strategies must consider the characteristics, experiences, and motivations of each teacher so that the adaptation process is inclusive and sustainable (Sumarni et al., 2022; Adji et al., 2022). These efforts are an important step toward achieving equitable and just educational digital transformation in Siak Regency.

Problems related to teacher training, motivation, and digital literacy in Siak Regency are made more complex by limited resources and minimal local policy support (Mubarak & Anhar, 2024; Mubarok et al., 2024; Haslinda, interview). Teachers in underdeveloped areas often face limited access to quality training relevant to their needs. In addition, social and economic challenges—such as low appreciation of the teaching profession and limited technological facilities at schools—also affect teachers' work enthusiasm and professionalism. This condition impacts suboptimal teacher performance and learning quality, as reflected in interviews and field observations in SMP Region 1 of Siak Regency. If these obstacles are not promptly addressed, educational quality in the region will continue to lag and struggle to compete nationally. Therefore, locally-based

solutions involving all stakeholders—from the local government, education office, and principals to teacher communities—are required. Collaborative synergy and joint commitment are key to creating supportive work environments that encourage collective and sustainable improvements in teacher performance.

Based on the above discussion, efforts to improve the performance of junior high school teachers in Region 1 of Siak Regency are strongly influenced by three main factors: professional training, work motivation, and digital literacy (Dudung, 2018; Eliza et al., 2022; Putri et al., 2023). These three are interrelated and contribute simultaneously to creating high-quality learning processes that are adaptive to change. The integration of professional training and work motivation has been proven to encourage teachers to be more proactive and innovative in managing learning, while digital literacy is an increasingly important supporting factor in modern education (Lase et al., 2022; Sumarni et al., 2022). Nevertheless, challenges related to training access, environmental support, and disparities in technology mastery remain obstacles that must be addressed through comprehensive strategies grounded in real needs (Mubarak & Anhar, 2024; Mubarok et al., 2024). This study specifically aims to analyze the extent to which professional training, work motivation, and digital literacy affect junior high school teachers' performance in Region 1 of Siak Regency, so the results can inform the formulation of policies to sustainably improve educational quality in the region.

METHOD

Research Design

This study employed a quantitative approach with an ex post facto explanatory-survey design. This design was selected because it allows the researcher to test the effects of three independent variables—teachers' professional training, work motivation, and digital literacy—on teacher performance without manipulating respondents' natural conditions, while objectively analyzing the numerical data collected. The explanatory-survey design provides space to build a multiple regression model that can assess the simultaneous contribution of the three variables within one comprehensive analytical framework.

Research Location and Period

The research was conducted at all public junior high schools (SMP) in Region 1 of Siak Regency, Riau Province, from February to May 2025. Region 1 was chosen because it represents varied levels of teacher participation in professional training and technology adoption, so the findings are expected to be relevant for regions with similar characteristics.

Population and Sample

The population comprised 164 public junior high school teachers in Region 1 of Siak Regency, distributed across twelve public schools. Sample size was determined using the Isaac & Michael table at a 5% significance level, yielding 115 respondents representing all schools, although the distribution was not fully proportional due to limits on teachers willing to complete the

questionnaire. Proportional random sampling was used to maintain representativeness and minimize bias.

Variables and Operational Definitions

The dependent variable was junior high school teachers' performance (Y), while the independent variables were teachers' professional training (X_1), work motivation (X_2), and digital literacy (X_3). Operational definitions for each variable were elaborated into measurable indicators and assessed using a five-point Likert scale.

Research Instrument

The instrument was a closed-ended questionnaire containing 16 items for each of the variables X_1, X_2, X_3, and Y. Item construction was preceded by expert judgment by two lecturers in educational management to examine construct alignment and language clarity.

Validity Testing

Item validity was tested with 30 teachers outside the main sample using Product-Moment correlation; items were considered valid if r_calculated > r_table 0.361 ($\alpha = 0.05$). All items on the four variables were declared valid based on SPSS 25 analysis.

Reliability Testing

Reliability was measured using Cronbach's alpha; $\alpha \geq 0.600$ was considered reliable. The results showed $\alpha = 0.963$ (X_1), 0.974 (X_2), 0.968 (X_3), and 0.972 (Y), indicating very high internal consistency across all scales.

Data Collection Technique

Primary data were collected by administering questionnaires directly to 115 selected teachers; respondents completed the forms independently with the researcher's assistance to minimize input errors.

Data Analysis Technique

Classical Assumption Tests:

Normality: Kolmogorov–Smirnov testing confirmed normally distributed residuals.

Multicollinearity: VIF < 10 and Tolerance > 0.10 indicated no multicollinearity.

Heteroscedasticity: Glejser testing indicated homogeneous error variance.

Multiple Linear Regression:

The estimated model: $Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \varepsilon$, where Y = teacher performance; X_1 = professional training; X_2 = work motivation; X_3 = digital literacy. Significance testing included partial (t-test) for each β, simultaneous (F-test), and the coefficient of determination (R^2) to assess model strength at $\alpha = 0.05$.

RESULTS

Descriptive Statistics of Variables

Table 6 summarizes the tendencies of each construct. The mean score for Professional Training (X_1) was 51.61 (SD = 9.36), classified as "Very High," indicating that most teachers felt they had received sufficient professional development to update pedagogical competence. Work Motivation (X_2) recorded a mean of 53.28 (SD = 10.06), also at the "Very High" level, reflecting strong intrinsic-extrinsic drives while carrying out duties. Meanwhile, Digital Literacy

(X_3) showed a mean of 51.31 (SD = 9.72), categorized as "High," indicating that technology adoption is widespread but not yet fully optimal. Finally, Teacher Performance (Y) had a mean of 53.65 (SD = 10.09) at the "Very High" level, indicating remaining room to consolidate instructional quality.

Partial Hypothesis Testing

Multiple linear regression indicated that Professional Training had a positive and significant effect on performance ($\beta = 0.250$; $t = 2.808$; $p = 0.006$), making structured training programmes a capacity-building priority. Work Motivation emerged as the most dominant predictor ($\beta = 0.685$; $t = 8.796$; $p < 0.001$); interventions that foster recognition, meaningful goals, and a supportive work climate are expected to produce the largest performance gains. Conversely, Digital Literacy was not significant in partial analysis ($\beta = 0.031$; $t = 0.388$; $p = 0.699$), indicating that technological mastery does not automatically convert into performance without motivational or pedagogical mediation.

Simultaneous Hypothesis Testing

ANOVA yielded $F = 311.817$ with significance 0.000, far below the 0.05 threshold. Thus, the null hypothesis is rejected: Professional Training, Work Motivation, and Digital Literacy collectively have a significant effect on teacher performance. In other words, performance improvement cannot depend on a single isolated factor; multi-dimensional approaches must be implemented in SMP Region 1 of Siak Regency to ensure sustained instructional behavior change.

Model Strength

The model summary reported a multiple correlation coefficient $R = 0.945$—indicating a very strong relationship between the three predictors and performance. The coefficient of determination $R^2 = 0.894$ means that 89.4% of the variance in teacher performance can be explained by the combination of training, motivation, and digital literacy; the remaining 10.6% likely stems from external factors such as school leadership or facilities. A standard error of estimate of 3.33 indicates that the model's predictions are relatively precise, making it a sound basis for evidence-based policy at the school level.

DISCUSSION

The discussion confirms that junior high school teachers' performance in Region 1 of Siak Regency is significantly influenced by professional training, work motivation, and digital literacy, as evidenced by an R^2 of 0.894 showing that these three variables explain 89.4% of performance variation (Eliza et al., 2022; Mubarak & Anhar, 2024; Fariha, 2023). This finding aligns with the mean performance score categorized as "Very High" (53.65), indicating that competence enhancement efforts are underway but still require cross-variable consolidation (Putri et al., 2023). Multiple regression also shows that professional training and work motivation contribute more to performance improvement than digital literacy, which was not significant in the partial analysis ($\beta = 0.031$; $p = 0.699$), reinforcing the argument that technological proficiency has not yet been fully integrated into instructional practice (Sumarni et al., 2022; Adji et al., 2022). Therefore, teacher development interventions in Siak need to prioritize a combination of adaptive training, motivational strengthening, and technological mentoring so that quality transformation proceeds optimally.

Professional training has a positive and significant effect on teacher performance, reflected in a t-value of 2.808 with p = 0.006 (Eliza et al., 2022; Hadde Syukria, interview; Putri et al., 2023). The mean professional training score of 51.61 in the "Very High" category indicates that most teachers have received sufficient development experiences to enhance their pedagogical competence (Fitria et al., 2019). Even so, field facts show that participation in training—particularly online—often remains driven by administrative demands rather than an intrinsic motivation for self-development (Hadde Syukria, interview). This aligns with Ikbal (2018), who argues that training effectiveness depends heavily on teachers' emotional involvement and internal motivation, not merely on access provision. Hence, strengthening motivation and awareness of the importance of continuous learning is key so that professional training has a tangible impact on instructional transformation rather than serving as administrative formality, allowing teachers across Siak Regency to gain substantive benefit.

Meanwhile, work motivation emerges as the most dominant factor affecting teacher performance, indicated by $\beta = 0.685$ and $t = 8.796$ with $p = 0.000$ (Fariha, 2023; Sholeh, 2023; Haslinda, interview). The average work motivation score of 53.28, categorized as "Very High," illustrates that intrinsic and extrinsic drives are well-established in carrying out professional duties (Ardiansyah & Pujianto, 2023). However, field findings also show disparities in motivation, with some teachers frequently late to class and displaying low work enthusiasm (Haslinda, interview). A work culture that is insufficiently collaborative further hampers innovation, as teachers' initiatives to develop internal seminars do not always receive collegial support (Ardiansyah & Pujianto, 2023). Therefore, strategies to enhance work motivation must involve building supportive environments, fair recognition systems, and a collective culture so that motivation and performance grow sustainably at both individual and school-community levels.

Teachers' digital literacy in Siak is relatively high, with a mean score of 51.31, yet analysis shows that its partial effect on performance is not significant ($\beta = 0.031$; $t = 0.388$; $p = 0.699$) (Lase et al., 2022; Sumarni et al., 2022; Adji et al., 2022). This implies that although most teachers—especially younger ones—are familiar with digital devices, not all can integrate technology effectively into daily instructional practice (Hadde Syukria, interview). Senior teachers still face challenges operating digital tools, as acknowledged by Haslinda, who reported difficulties utilizing technology optimally. Sumarni et al. (2022) also highlight low ICT mastery as a key hurdle in educational digital transformation, while Adji et al. (2022) recommend individualized digital literacy training. Consequently, developing digital literacy must be complemented with personalized training, technical mentoring, and motivational enhancement so every teacher—regardless of age or background—can adapt to modern educational technology demands.

Digital transformation in SMP Region 1 of Siak Regency was accelerated by the COVID-19 pandemic, which compelled teachers to adapt to online learning; however, differences in readiness and digital skills remain noticeable (Loretha & Albar, 2023; Irdaleni, interview; Hadde Syukria, interview). Irdaleni viewed the pandemic as a positive momentum to strengthen digital literacy, yet

disparities persist in accessing and utilizing learning technologies. Loretha & Albar (2023) corroborate this, noting significant increases in teachers' digital skills during the pandemic, although participation in digital training varied. Hadde Syukria further emphasized that not all teachers seized digital literacy training opportunities, leading to uneven technological mastery in schools. Sumarni et al. (2022) and Adji et al. (2022) agree that barriers to digital literacy stem not only from technical skills but also from mental readiness and motivation to learn new things. Thus, future digital literacy development must be tailored to teacher profiles and needs to ensure equitable and sustainable adaptation across schools.

Limited resources and policy support in Siak Regency hinder the optimization of teacher training, motivation, and digital literacy (Mubarak & Anhar, 2024; Mubarok et al., 2024; Putri et al., 2023). Teachers still face obstacles in accessing relevant, quality training, affecting equitable competence development across schools. Moreover, social and economic issues—such as low appreciation of the teaching profession and limited technology in schools—affect teachers' enthusiasm and professionalism (Putri et al., 2023). Descriptive data indicate that although the categories for professional training, work motivation, and digital literacy are high, gaps persist between schools due to unequal institutional support and facilities (Eliza et al., 2022). Therefore, active involvement of local government, the education office, and principals is needed to formulate need-based policies and equalize facilities. Synergy among stakeholders can strengthen collaborative cultures and speed up educational quality transformation. In conclusion, data-driven policies and interventions must be integrated into education planning in underdeveloped regions to ensure that improvements in teacher performance produce comprehensive and sustainable impacts across all schools in Siak Regency.

Overall, this study affirms the importance of synergy among professional training, work motivation, and digital literacy in building optimal teacher performance in SMP Region 1 of Siak Regency (Eliza et al., 2022; Fariha, 2023; Lase et al., 2022). The strong dominance of work motivation in the regression model underscores the need for psychological empowerment strategies and a collaborative work culture at every school (Sholeh, 2023; Ardiansyah & Pujianto, 2023). Professional training must be designed more contextually, responsive to teachers' needs, and integrated with supervision and ongoing mentoring to provide tangible impact on instructional practice (Fitria et al., 2019; Putri et al., 2023). Although digital literacy was not statistically significant in the partial model, it must still be developed as a key instrument to strengthen innovation and instructional adaptation in the technological era (Sumarni et al., 2022; Adji et al., 2022). Going forward, education policy in Siak Regency should focus on reinforcing these three pillars through cross-stakeholder collaboration, equitable facilities, and professional learning communities to achieve sustainable quality improvements that are adaptive to global challenges.

CONCLUSIONS

Based on the findings regarding the effects of teachers' professional training, work motivation, and digital literacy on junior high school teachers' performance in Region 1 of Siak Regency, several key conclusions can be drawn. First, teacher performance in this region is generally categorized as very high, with a mean of 53.65 and a standard deviation of 10.09. The coefficient of determination (R^2) of 0.894 indicates that 89.4% of the variance in teacher performance is explained by the combination of professional training, work motivation, and digital literacy, with the remainder influenced by other external factors. Second, teachers' professional training has a positive, significant partial effect on performance ($\beta = 0.250$; $t = 2.808$; $p = 0.006$), confirming the importance of structured, contextual training supported by continuous supervision. Third, work motivation is the most dominant factor with $\beta = 0.685$ and $t = 8.796$ ($p < 0.001$), so strategies to increase motivation—through recognition, a positive work environment, and collaborative culture—are essential to keep teacher performance optimal and consistent. Fourth, digital literacy has a high average score but is not a significant partial predictor ($\beta = 0.031$; $t = 0.388$; $p = 0.699$), indicating the importance of need-based digital training and gradual, targeted technology integration. These findings imply that efforts to improve teacher performance must be carried out integratively, emphasizing professional training, motivational empowerment, and digital literacy strengthening to achieve learning quality that is adaptive and relevant to modern educational challenges in Siak Regency.

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