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Prioritizing Digital Training For Teachers: An Importance-Performance Map Analysis Of Digital Self-Efficacy And Teacher Performance

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Abstract

Schools invest in digital training for teachers, but they rarely know which aspects of that training, or of teachers' readiness, deserve priority. This study goes beyond testing whether digital training affects teacher performance by identifying where improvement efforts should be focused. Data from a census of 80 teachers at SMA Negeri 1 Selesai were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) followed by an Importance-Performance Map Analysis (IPMA), with teacher performance as the target construct. The structural model showed good fit (SRMR = 0.038) and explained 78.3% of the variance in teacher performance. Digital training affected teacher performance directly (β = 0.636) and indirectly through digital self-efficacy (β = 0.224). The IPMA revealed that digital training is the most important driver of performance (importance = 0.826) but performs only moderately (60.56 out of 100), with training duration and intensity and supporting facilities carrying the greatest weight. Digital self-efficacy has lower importance (0.363) but the lowest performance (34.06), especially in integrating technology into instruction and overcoming technical difficulties. Schools should therefore intensify training and its infrastructure while deliberately building teachers' digital confidence through classroom application and peer mentoring.

Keywords: **Digital Training, Digital Self-Efficacy, Teacher Performance, Importance-Performance Map Analysis, PLS-SEM.**

INTRODUCTION

Digital technology has transformed the way schools teach and learn, pushing them to move away from traditional classroom processes. In Indonesia, this shift is reinforced by the Merdeka Curriculum, which positions technology integration as a core element of

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educational innovation. Teachers are no longer expected merely to deliver content; they are now required to act as learning facilitators who can use a variety of digital tools and platforms to create interactive classrooms. This change has also redefined how teacher performance is judged, placing greater weight on digital pedagogical competence and the ability to manage technology-enhanced learning (Sudarsana et al., 2020). Building teachers' capacity to adopt and use digital technologies has therefore become a strategic priority for schools that wish to remain relevant in a technology-driven era.

In response, educational stakeholders have invested heavily in professional development programs aimed at strengthening teachers' digital competence. These programs typically cover technical and pedagogical skills such as operating Learning Management Systems (LMS), developing digital content, and using artificial intelligence for assessment and evaluation (Anugrahana, 2020). Prior studies indicate that well-designed and systematic training can improve teacher performance and instructional effectiveness (Lubis et al., 2025; Pradana & Susanty, 2021). In practice, however, a clear gap often remains between what training aims to achieve and what actually happens in the classroom. Many teachers who have completed digital training still fall back on traditional methods because they perceive digital technologies as complicated, time-consuming, and difficult to apply consistently.

This gap between training and classroom practice points to an internal psychological factor that has received less attention, namely digital self-efficacy. According to social cognitive theory (Bandura, 1997), technical knowledge and skills alone do not produce meaningful behavioral change unless individuals also believe they are capable of performing the task successfully. In the adoption of educational technology, digital self-efficacy acts as a key psychological mechanism that determines whether teachers are willing to engage with and apply digital tools in their teaching. Teachers with higher digital self-efficacy tend to experiment more with new technologies, cope better with technical difficulties, and persist in integrating digital innovations into their practice (Hatlevik et al., 2018). In contrast, teachers who lack confidence in their digital competence may treat training as a mere formality, so that it has little effect on instructional quality and professional performance.

The same gap between technical training and psychological readiness is visible at SMA Negeri 1 Selesai. Preliminary observations show that school management has actively encouraged teachers to attend seminars, workshops, and professional development programs on educational digitalization. Even so, teachers' digital performance remains uneven and has not yet reached its potential. Senior teachers frequently experience digital anxiety, or technostress, which undermines their confidence in operating current learning technologies independently. Younger teachers, on the other hand, often struggle to align digital learning resources with changing curriculum

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demands. These conditions indicate that psychological barriers, particularly low digital self-efficacy, may be a key reason why digital training has not yet translated into tangible improvements in teacher performance.



Figure 1. Preliminary Survey Results (2026)
Source: Authors' Compilation Based on Preliminary Survey Data (2026).

Figure 1 shows that the weak link between technical training and psychological readiness is not only a theoretical issue but is also evident in the daily teaching practices of teachers at SMA Negeri 1 Selesai. A pre-survey of 25 teachers revealed that the school's digital transformation efforts have not yet delivered their intended outcomes because of underlying psychological barriers. Specifically, 68% of respondents (17 teachers) had not attended comprehensive and continuous digital training in the previous year. This limited exposure appears to shape their teaching, as 76% (19 teachers) reported rarely or never using digital learning tools such as Learning Management Systems (LMS), Canva, or interactive presentation platforms in class. Instead, most still rely on conventional lectures supported mainly by printed materials.

The survey data further suggest that the low adoption of educational technology is closely tied to teachers' internal psychological conditions. As many as 72% of respondents (18 teachers) admitted to having low digital self-efficacy. They described feelings of digital anxiety (technostress), uncertainty when facing unfamiliar technologies, and worry about making technical mistakes in front of students. These findings make it clear that a lack of confidence in digital competence is a major obstacle that prevents teachers from turning the outcomes of digital training into innovative and productive teaching. In other words, the problem is not only whether training is available, but also whether teachers are psychologically ready to apply newly acquired skills in real classroom settings.

These conditions show that knowing whether digital training affects teacher performance is no longer sufficient; schools also need to know which aspects of training and of teachers' readiness should be improved first. An earlier article from this research project established that digital self-efficacy partially mediates the effect of digital training

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on teacher performance at SMA Negeri 1 Selesai (Firmansyah et al., 2026). However, conventional PLS-SEM results report only the strength of each relationship and do not show how well each driver is currently performing, so they offer limited guidance for setting priorities with limited school resources. Importance-Performance Map Analysis (IPMA) addresses this gap by combining the importance of each construct and indicator with its current performance (Ringle & Sarstedt, 2016), yet it has rarely been applied to teacher digital training in Indonesia. Accordingly, this study aims to identify the priority areas of digital training and digital self-efficacy for improving teacher performance at SMA Negeri 1 Selesai. The novelty of this study lies in applying IPMA at both the construct and indicator levels to a census of teachers in an Indonesian public senior high school, turning the mediation model into an evidence-based priority map for school-based digital capacity building.

LITERATURE REVIEW

Digital Training

In this study, digital training is understood as a planned professional learning activity in which technology is both the content and the medium used to strengthen teachers' pedagogical and professional capabilities. Human Capital Theory treats such training as an investment: the knowledge and skills it builds raise the productive capacity of the people who receive it (Becker, 1993; Malikhah & Nasution, 2023). For teachers, this investment typically takes the form of learning to operate Learning Management Systems (LMS), interactive applications, and other digital instructional tools that can be used in daily teaching (Antonopoulou & Matzavinou, 2025).

Whether such training actually pays off depends on how well its content fits teachers' tasks, how capable the facilitators are, whether the necessary devices and connectivity are available, and how motivated teachers are to keep learning (Kuo & Kuo, 2025). Studies in Indonesian schools likewise show that digital training strengthens teacher professionalism only when it is organized systematically rather than as isolated events (Ali, 2024; Darmilisani et al., 2024). From the IPMA perspective adopted here, these elements are not equally valuable: some contribute more to performance than others, and schools with limited budgets need to know which ones to prioritize. Digital Training was measured with five indicators adapted from Kuo and Kuo (2025): the relevance of training materials to teachers' duties (DT1), the availability of supporting facilities and infrastructure (DT2), the quality of trainers and facilitators (DT3), the duration and intensity of training (DT4), and the application of acquired skills in teaching practice (DT5).

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Digital Self-Efficacy

Self-efficacy is a central concept in Social Cognitive Theory, which holds that what people believe they can do shapes how much effort they invest, how they behave, and how well they ultimately perform (Bandura, 1986). Applied to technology use in schools, digital self-efficacy describes a teacher's belief that he or she can use digital tools successfully to support teaching (Gal et al., 2025). Teachers who hold this belief tend to try new applications more readily, design lessons more creatively, and persist rather than give up when technical problems occur.

Bandura (1997) identifies four sources from which such beliefs develop: personal mastery experiences, observing others succeed, encouragement from others, and emotional states such as anxiety or enthusiasm (see also Kuo & Kuo, 2025). For teachers, these sources determine not only how capable they feel with technology but also whether they are willing to bring it into the classroom. Because self-efficacy is a belief rather than a skill, it can remain low even after training, which makes it a natural candidate for priority analysis. Digital Self-Efficacy was measured with five indicators adapted from Bandura (1997) and Gal et al. (2025): confidence in operating digital hardware and software (DSE1), in integrating technology into instruction (DSE2), in overcoming technical difficulties (DSE3), in adapting to new technologies (DSE4), and in using technology to enrich learning interactions (DSE5).

Teacher Performance

Teacher performance concerns how well teachers carry out their core professional duties, namely planning lessons, delivering instruction, and assessing learning. Following Robbins (2006), performance can be seen as the product of ability, motivation, and the opportunity to perform. In digitally oriented schools, this definition widens to include the capacity to use technology in ways that make learning more innovative and engaging (Ali, 2024; Firmansyah et al., 2023a).

Prior research links teacher and employee performance to professional competence, work motivation, organizational support, leadership, infrastructure, and technological proficiency (Antonopoulou & Matzavinou, 2025; Ferine et al., 2021; Firmansyah et al., 2023b; Pratama, 2019; Setiawan & Pratama, 2019). High-performing teachers in a digital setting are those who can plan technology-supported lessons, create interactive classrooms, and assess students through digital platforms. In this study, Teacher Performance serves as the target construct of the IPMA and was measured with five indicators adapted from Antonopoulou and Matzavinou (2025): designing digital-based lesson plans (TP1), implementing technology-supported instruction (TP2), using digital media for classroom interaction (TP3), assessing learning outcomes with digital applications (TP4), and innovating in instructional methods (TP5).

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Importance-Performance Map Analysis

Standard PLS-SEM reporting focuses on path coefficients, which indicate how strongly one construct affects another. IPMA extends this by contrasting the total effect of each predictor on a target construct (importance) with the average score of that predictor rescaled to a 0–100 range (performance) (Ringle & Sarstedt, 2016). Predictors with high importance but relatively low performance are the most promising targets for managerial action, because improving them is expected to yield the largest gains in the target outcome. Applied to teacher development, IPMA allows schools to move beyond asking whether training and self-efficacy matter, which has already been established for this setting (Firmansyah et al., 2026), towards asking which specific aspects of each should be improved first. Because the analysis can be carried out at both construct and indicator level, it is well suited to translating statistical results into concrete priorities for school management.

METHODS

This study adopts a quantitative, explanatory design and uses SMA Negeri 1 Selesai as its research site. The school was chosen because it has been actively pursuing digital transformation, sending its teachers to a range of digital training programs intended to improve the quality and effectiveness of teaching (Batubara & Insan, 2022). Its teaching staff comprises 80 teachers who teach both general and specialized subjects. Since the population was small enough to be surveyed in full, a census approach was used, and all 80 teachers participated as respondents. Surveying the entire population removes sampling error at the school level, although, as discussed in the limitations, it also confines the findings to this single institution.

The characteristics of the 80 respondents are presented in Table 1. Most teachers were aged over 40 years (57.5%), had more than 10 years of teaching experience (65.0%), and were female (60.0%), indicating that the sample was dominated by experienced teachers, a group often associated with greater difficulty in adopting new digital tools.

Characteristic	Category	Frequency	Percentage (%)
Age	25–30 years	10	12.50
	31–40 years	24	30.00
	41–50 years	28	35.00
	51–60 years	18	22.50
Teaching experience	1–5 years	12	15.00
	6–10 years	16	20.00

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Characteristic	Category	Frequency	Percentage (%)
	11–15 years	20	25.00
	16–20 years	17	21.25
	More than 20 years	15	18.75
Gender	Male	32	40.00
	Female	48	60.00

Table 1. Respondent Characteristics (n = 80)
Source: Primary Data Processed (2026)

Each construct was measured with five items on a five-point Likert scale (1 = strongly disagree, 5 = strongly agree), distributed through a structured questionnaire. The data were analyzed with Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS 4. PLS-SEM was preferred because it is oriented towards prediction, handles models with mediating paths, and performs well with moderate sample sizes without requiring multivariate normality (Ghozali, 2021; Hair et al., 2022). The analysis proceeded in three steps. First, the measurement model was checked for indicator reliability, internal consistency, convergent validity, discriminant validity (Fornell-Larcker criterion and HTMT), and collinearity. Second, the structural model was evaluated through R^2, f^2, SRMR, and path coefficients, with significance determined by bootstrapping at the 5% level. Third, an IPMA was run with Teacher Performance as the target construct to identify which constructs and indicators combine high importance with low performance (Ringle & Sarstedt, 2016). The dataset is shared with an earlier article from the same project (Firmansyah et al., 2026), which tested the mediation model; this article uses the same data to answer a different question, namely where improvement efforts should be concentrated.

RESULTS AND DISCUSSION

Measurement Model (Outer Model)

Before the structural relationships and the IPMA can be interpreted, the measurement model must show that each set of indicators measures its construct reliably and validly. This is particularly important for IPMA, because performance scores are computed from indicator weights, so unreliable indicators would distort the priority map.

Convergent Validity

Convergent validity concerns whether the indicators of a construct converge on a common underlying concept. It was assessed through the outer loadings of the indicators and the Average Variance Extracted (AVE) of each construct.

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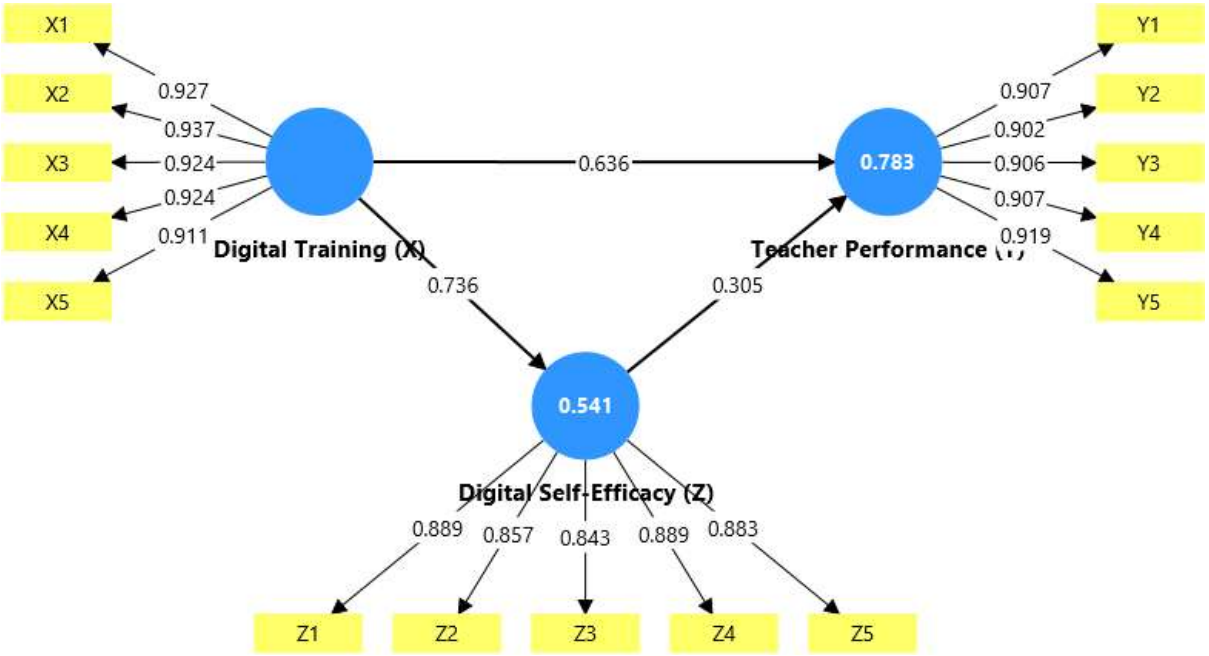


Figure 2. Outer Model
Source: SmartPLS 4.1.1.2 (2026)

As Figure 2 shows, every indicator loaded above 0.70 on its construct, so all indicators were retained.

Because the full measurement model has been reported in the earlier publication from this project (Firmansyah et al., 2026), only a summary is presented here (Table 2). All outer loadings ranged from 0.843 to 0.937, above the 0.70 threshold. Cronbach's alpha (0.921–0.958) and composite reliability (0.941–0.967) exceeded 0.70, and AVE values (0.761–0.855) exceeded 0.50, confirming internal consistency reliability and convergent validity.

Construct	Outer loadings	Cronbach's alpha	Composite reliability (rho_c)	AVE	Outer VIF
Digital Training (X)	0.911–0.937	0.958	0.967	0.855	4.535–5.925
Digital Self-Efficacy (Z)	0.843–0.889	0.921	0.941	0.761	2.481–3.163
Teacher Performance (Y)	0.902–0.919	0.947	0.959	0.825	3.548–4.204

Table 2. Summary of Measurement Model Evaluation
Source: SmartPLS 4.1.1.2 (2026)

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Discriminant validity was supported by the Fornell-Larcker criterion, as the square root of each construct's AVE (0.872–0.925) exceeded its correlations with other constructs, and by the cross-loadings, as every indicator loaded highest on its own construct. The HTMT values were 0.783 (Digital Training–Digital Self-Efficacy) and 0.827 (Teacher Performance–Digital Self-Efficacy), below 0.90, while the HTMT between Teacher Performance and Digital Training (0.902) was marginally above this threshold; this value should therefore be interpreted with caution, and testing whether its bootstrap confidence interval falls below 1 is recommended (Henseler et al., 2015). Several Digital Training indicators showed outer VIF values slightly above 5 (DT2 = 5.925, DT3 = 5.127, DT4 = 5.158), indicating a degree of indicator redundancy within this construct, which is consistent with its very high loadings.

Structural Model (Inner Model)

The structural model (inner model) was evaluated to examine the relationships among the latent variables proposed in the research framework. This analysis is important because it determines the explanatory power of the model and assesses the extent to which the hypothesized relationships are supported by empirical data. Evaluating the structural model provides insights into the predictive capability and theoretical relevance of the proposed research model.

The model showed a good fit, with an SRMR of 0.038 (below 0.08) and an NFI of 0.906. Digital Training explained 54.1% of the variance in Digital Self-Efficacy ($R^2 = 0.541$; adjusted $R^2 = 0.536$), while Digital Training and Digital Self-Efficacy together explained 78.3% of the variance in Teacher Performance ($R^2 = 0.783$; adjusted $R^2 = 0.777$). Inner VIF values (1.000–2.181) were below 3, indicating no collinearity problem among predictors. The f^2 values showed large effects of Digital Training on Digital Self-Efficacy ($f^2 = 1.181$) and on Teacher Performance ($f^2 = 0.855$), and a medium effect of Digital Self-Efficacy on Teacher Performance ($f^2 = 0.196$). Bootstrapping results showed that Digital Training had a significant direct effect on Teacher Performance ($\beta = 0.636$, $t = 8.791$, $p < 0.001$) and on Digital Self-Efficacy ($\beta = 0.736$, $t = 14.346$, $p < 0.001$), and that Digital Self-Efficacy had a significant effect on Teacher Performance ($\beta = 0.305$, $t = 3.946$, $p < 0.001$).

The indirect effect analysis confirmed the mediating role of Digital Self-Efficacy in the relationship between Digital Training and Teacher Performance. The indirect effect was positive and statistically significant ($\beta = 0.224$, $t = 3.733$, $p < 0.001$). This indicates that Digital Training enhances Teacher Performance not only directly but also indirectly by strengthening teachers' Digital Self-Efficacy. Since the direct effect of Digital Training on Teacher Performance remained significant, Digital Self-Efficacy serves as a partial mediator in the proposed model.

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The hypothesis testing results, including the direct and indirect effects, are summarized in Table 3.

Hypothesis	Path	β	T statistics	P values	Decision
H1	Digital Training (X) -> Teacher Performance (Y)	0.636	8.791	0.000	Accepted
H2	Digital Training (X) -> Digital Self-Efficacy (Z)	0.736	14.346	0.000	Accepted
H3	Digital Self-Efficacy (Z) -> Teacher Performance (Y)	0.305	3.946	0.000	Accepted
H4	Digital Training (X) -> Digital Self-Efficacy (Z) -> Teacher Performance (Y)	0.224	3.733	0.000	Accepted (partial mediation)

Table 3. Summary of Hypothesis Testing
Source: SmartPLS 4.1.1.2 (2026)

Importance-Performance Map Analysis (IPMA)

IPMA extends the standard PLS-SEM results by contrasting the importance of each predictor, measured by its unstandardized total effect on the target construct, with its performance, measured by the average latent variable score rescaled to a range of 0 to 100 (Ringle & Sarstedt, 2016). With Teacher Performance as the target construct, the performance of Teacher Performance itself was 47.25, indicating that teachers' digital-era performance is still below the midpoint of the scale. The construct-level results are presented in Table 4.

Construct	Importance (total effect)	Performance (0–100)
Digital Training (X)	0.826	60.56
Digital Self-Efficacy (Z)	0.363	34.06

Table 4. Construct-Level IPMA for Teacher Performance
Source: Data Processed (2026)

Digital Training has the highest importance (0.826): a one-point increase in its performance is associated with a 0.826-point increase in Teacher Performance, holding other factors constant. Its performance (60.56), however, is only moderate, which leaves room for improvement. Digital Self-Efficacy has a lower importance (0.363) but by far the lowest performance (34.06), meaning that teachers' confidence in using digital tools is the weakest point in the model. The indicator-level results in Table 5 identify where these gaps are located.

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Indicator	Description	Importance	Performance (0–100)
DT1	Relevance of training materials	0.150	59.69
DT2	Availability of supporting facilities and infrastructure	0.180	60.31
DT3	Quality of trainers and facilitators	0.152	62.19
DT4	Duration and intensity of training	0.186	60.94
DT5	Application of skills in teaching practice	0.158	59.69
DSE1	Confidence in operating digital hardware and software	0.070	36.25
DSE2	Confidence in integrating technology into instruction	0.077	32.81
DSE3	Confidence in overcoming technical difficulties	0.069	32.81
DSE4	Confidence in adapting to new technologies	0.071	33.44
DSE5	Confidence in using technology to enhance interaction	0.076	35.00

Table 5. Indicator-Level IPMA for Teacher Performance
Source: Data Processed (2026)

Among the Digital Training indicators, the duration and intensity of training (DT4 = 0.186) and the availability of supporting facilities and infrastructure (DT2 = 0.180) have the highest importance, while the relevance of training materials (DT1) and the application of skills in teaching practice (DT5) have the lowest performance (59.69). Among the Digital Self-Efficacy indicators, confidence in integrating technology into instruction (DSE2) and confidence in overcoming technical difficulties (DSE3) have the lowest performance (32.81), even though DSE2 is the most important indicator within this construct (0.077). These results suggest two priorities: first, improving the intensity of training and the facilities that support it, which yield the greatest gains in teacher performance; and second, building teachers' confidence in integrating technology into lessons and solving technical problems independently, which are currently the weakest areas.

Structural Relationships

The structural results confirm the mediation model reported for the same project (Firmansyah et al., 2026). Digital Training improved Teacher Performance directly (β = 0.636) and indirectly through Digital Self-Efficacy (β = 0.224), so that its total effect

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reached 0.860, and Digital Self-Efficacy acted as a partial mediator. This pattern is consistent with Human Capital Theory, which views training as an investment in productive capacity (Becker, 1993), and with Social Cognitive Theory, which holds that mastery experiences strengthen the efficacy beliefs that shape behavior (Bandura, 1997). Because these relationships have been discussed in the earlier article, the discussion below focuses on what the IPMA adds: where schools should direct their improvement efforts.

Prioritizing Improvement: Insights from IPMA

The IPMA shows that significance in a path model does not automatically indicate where improvement is most needed. Digital Training is the most important driver of Teacher Performance, yet its performance (60.56) is only moderate. Within this construct, the duration and intensity of training and the availability of supporting facilities carry the greatest weight. This suggests that short, one-off workshops held without adequate devices or connectivity are unlikely to raise performance substantially; what matters more is sustained exposure supported by usable infrastructure (Pratama, 2019). At the same time, the lowest performance for the application of skills in teaching practice (DT5) indicates that the transfer of training into the classroom remains weak, which is consistent with the pre-survey finding that 76% of teachers rarely or never used digital learning tools in class.

Digital Self-Efficacy presents a different picture. Its importance is lower than that of Digital Training, but its performance (34.06) is the lowest of all constructs, and the average item scores (2.31–2.45 on a five-point scale) indicate that most teachers do not yet feel confident with digital tools. The weakest areas are confidence in integrating technology into instruction and in overcoming technical difficulties, the same concerns that teachers expressed as technostress and fear of making mistakes in front of students. Given that the sample is dominated by teachers aged over 40 and with more than 10 years of experience (Table 1), these findings point to a confidence gap rather than merely a skills gap. In IPMA terms, Digital Training is the area to maintain and intensify, whereas Digital Self-Efficacy is the area with the largest room for improvement, and both should be addressed together rather than separately.

Theoretical and Practical Implications

Theoretically, this study shows that combining path analysis with IPMA yields a more complete picture of training effectiveness than significance testing alone. The results extend Human Capital Theory (Becker, 1993) by indicating that the return on training investment depends not only on whether training is provided but also on its intensity and supporting infrastructure, and they support Social Cognitive Theory

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(Bandura, 1997) by showing that low efficacy beliefs remain a bottleneck even when training is available. Models of teacher training effectiveness should therefore account for both the strength and the current level of each driver.

Practically, the IPMA provides a clear order of priorities for SMA Negeri 1 Selesai and similar schools. First, training should be made more intensive and continuous, for example through scheduled follow-up sessions rather than single workshops, and supported by reliable devices and connectivity. Second, training should include structured classroom application, such as assigning teachers to design and deliver at least one technology-supported lesson after each session. Third, confidence-building measures should target the two weakest areas, integrating technology into lessons and solving technical problems, through peer mentoring between younger and senior teachers, a school-based digital help desk, and step-by-step practice that allows teachers to experience early success. Schools can repeat the IPMA periodically to track whether these weak points improve.

CONCLUSION

This study examined which aspects of digital training and digital self-efficacy should be prioritized to improve teacher performance at SMA Negeri 1 Selesai. The structural results confirm that Digital Training improves Teacher Performance both directly ($\beta = 0.636$) and indirectly through Digital Self-Efficacy ($\beta = 0.224$), with a total effect of 0.860, and that the model explains 78.3% of the variance in Teacher Performance.

The IPMA adds that Digital Training is the most important driver of Teacher Performance (importance = 0.826) but performs only moderately (60.56), with the duration and intensity of training and supporting facilities carrying the greatest weight. Digital Self-Efficacy has a lower importance (0.363) but the lowest performance (34.06), particularly in integrating technology into instruction and overcoming technical difficulties.

Overall, improving teacher performance requires schools to intensify digital training and its supporting infrastructure while deliberately closing the confidence gap among teachers. Training programs that combine sustained practice, classroom application, and mentoring are expected to deliver the greatest gains in teacher performance.

LIMITATION

Several limitations should be considered when interpreting these findings. The IPMA is only as informative as the model on which it is based: it ranks Digital Training and Digital Self-Efficacy relative to each other, but cannot reveal the importance of factors that were not modelled, such as school leadership, organizational support, or workload.

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In addition, the performance scores reflect teachers' self-assessments collected at a single point in time, so they may be affected by social desirability and do not show how priorities change as teachers gain experience with technology.

The study was also confined to one senior high school, and the IPMA was conducted for the sample as a whole. Although the respondent profile suggests that senior teachers dominate the sample, differences between groups, for example by age or teaching experience, were not tested statistically. Future research could extend the model with organizational variables, use multi-group analysis to compare IPMA results for junior and senior teachers, and adopt longitudinal designs to examine whether improving the weakest IPMA areas leads to measurable gains in teacher performance.

REFERENCES

Ali, W. (2024). Teacher professionalism in the era of digital transformation in Indonesia: A systematic literature review. Proceedings of the Cirebon International Conference on Education and Science (CICES).

Antonopoulou, H., & Matzavinou, P. (2025). Teachers' digital leadership and competencies in primary education: A cross-sectional behavioral study. Education Sciences, 15(2), 215.

Anugrahana, A. (2020). Hambatan, solusi dan harapan: Pembelajaran daring selama masa pandemi Covid-19 oleh guru sekolah dasar. Jurnal Pendidikan Dan Kebudayaan, 10(3), 282–289.

Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Prentice-Hall.

Bandura, A. (1997). Self-efficacy: The exercise of control. Freeman.

Batubara, S. S., & Insan, M. Y. (2022). Analisis Determinan Kinerja Pegawai di Lingkungan Biro Rektor Universitas Negeri Medan. Maneggio: Jurnal Ilmiah Magister Manajemen, 5(1), 1–10.

Becker, G. S. (1993). Human Capital: A Theoretical and Empirical Analysis, with Special Reference to Education (3rd ed.). University of Chicago Press.

Darmilisani, D., Istiqamah, N. K., & Hasibuan, R. F. (2024). Analisis disiplin kerja, aksebilitas dan produktivitas terhadap kinerja guru di SMAN 4 Medan. Jurnal Bina Bangsa Ekonomika, 17(1), 585–598.

Ferine, K. F., Aditia, R., Rahmadana, M. F., & Indri. (2021). An empirical study of leadership, organizational culture, conflict, and work ethic in determining work performance in Indonesia's education authority. Heliyon, 7(7), e07698. https://doi.org/10.1016/j.heliyon.2021.e07698

Firmansyah, F., Ferine, K. F., & Nizamuddin, N. (2023a). Analysis of the use of information technology and organizational culture on employee performance with

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competence as an intervening variable at the Panca Budi Development University, Medan. Sinomics Journal, 2(5). https://doi.org/10.54443/sj.v2i5.239

Firmansyah, F., Ferine, K. F., & Nizamuddin, N. (2023b). Determinants of performance of development Universitas Pembangunan Panca Budi Medan. International Conference on Health Science, Green Economics, Educational Review and Technology, 5(1), 357–372.

Firmansyah, Pratama, S., & Gustiawan, S. (2026). The effect of digital training on teacher performance: The mediating role of digital self-efficacy among teachers at SMA Negeri 1 Selesai. EKOMBIS REVIEW: Jurnal Ilmiah Ekonomi dan Bisnis, [volume(issue)], [pages]. https://doi.org/[DOI]

Gal, C., Ryder, C. H., & Amsalem, S. R. (2025). Shaping inclusive classrooms: Key factors influencing teachers' attitudes toward inclusion of students with special needs. Education Sciences, 15(5), 541.

Ghozali, I. (2021). Partial Least Squares: Konsep, Teknik dan Aplikasi Menggunakan Program SmartPLS 3.0 (3rd ed.). Badan Penerbit Universitas Diponegoro.

Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2022). A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM) (3rd ed.). Sage Publications.

Hatlevik, O. E., Guðmundsdóttir, G. B., & Loi, M. (2018). Digital diversity among upper secondary students: A multilevel analysis of the relationship between cultural capital, self-efficacy, and digital competence. Computers & Education, 123, 107–116.

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. Journal of the Academy of Marketing Science, 43(1), 115–135. https://doi.org/10.1007/s11747-014-0403-8

Kuo, Y. C., & Kuo, Y. T. (2025). An exploratory study of K–12 teachers' perceptions of adopting open educational resources in teaching. Education Sciences, 15(4), 468.

Lubis, M. K., Ferine, K. F., & Anwar, Y. (2025). The effect of work training and work ethic on teacher performance through work motivation at State Vocational High School 1 Stabat. Multidisciplinary Output Research for Actual and International Issue (MORFAI Journal), 6(2). https://doi.org/10.5281/zenodo.20280736

Malikhah, I., & Nasution, A. P. (2023). Analisis kompetensi SDM dan pemanfaatan teknologi informasi terhadap produktivitas kerja pelaku usaha di Desa Pematang Serai Kabupaten Langkat. Maneggio: Jurnal Ilmiah Magister Manajemen, 6(1). https://doi.org/10.30596/maneggio.v6i1.14586

Pradana, M. A., & Susanty, A. (2021). Pengaruh pelatihan terhadap kinerja karyawan dengan kompetensi sebagai variabel intervening. Jurnal Ilmu Manajemen, 9(2), 450–462.

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Pratama, S. (2019). Analisa pengaruh sumberdaya manusia, prasarana dan lingkungan kerja terhadap kinerja studi pada pegawai Universitas Pembangunan Panca Budi Medan. Jumant, 11(1), 235–250.

Ringle, C. M., & Sarstedt, M. (2016). Gain more insight from your PLS-SEM results: The importance-performance map analysis. Industrial Management & Data Systems, 116(9), 1865–1886. https://doi.org/10.1108/IMDS-10-2015-0449

Robbins, S. P. (2006). Organizational behavior (11th ed.). Pearson Prentice Hall.

Setiawan, A., & Pratama, S. (2019). Pengaruh gaya kepemimpinan, komunikasi efektif dan pengambilan keputusan terhadap kinerja karyawan pada CV. Bintang Anugerah Sejahtera. Jumant, 11(1), 19–34.

Sudarsana, I. K., Lestari, N. G. A. M. Y., Wedayanti, N. P. L., & Putrilitananda, P. D. (2020). Modernisasi pembelajaran di era digital. Yayasan Kita Menulis.

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