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SELF-EFFICACY AS A MEDIATOR OF LEADERSHIP, LEARNING ORGANIZATION, MOTIVATION, AND TEACHERS' INNOVATIVE BEHAVIOR

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Abstrak: *Penelitian ini mengkaji ketimpangan perkembangan perilaku inovatif guru sekolah dasar negeri dalam merespons tuntutan perubahan pembelajaran. Penelitian ini bertujuan untuk menganalisis pengaruh langsung kepemimpinan transformasional, organisasi pembelajar, motivasi, dan efikasi diri terhadap perilaku inovatif guru, serta menguji peran mediasi efikasi diri. Penelitian menggunakan desain kuantitatif eksplanatori. Data dikumpulkan melalui kuesioner tertutup dengan skala Likert yang diberikan kepada 374 guru sekolah dasar negeri di Kabupaten Serang, yang dipilih menggunakan teknik proportional stratified sampling dari populasi sebanyak 5.645 guru. Pengujian hipotesis dilakukan menggunakan Structural Equation Modeling (SEM) berbasis Partial Least Squares (PLS). Hasil penelitian menunjukkan bahwa kepemimpinan transformasional, organisasi pembelajar, motivasi, dan efikasi diri berpengaruh positif terhadap perilaku inovatif guru. Ketiga variabel eksogen tersebut juga berpengaruh positif terhadap efikasi diri. Efikasi diri muncul sebagai prediktor terkuat dan berperan sebagai mediator parsial pada seluruh hubungan tidak langsung. Temuan ini memberikan kontribusi terhadap bidang manajemen pendidikan dengan menegaskan pentingnya penguatan kepercayaan diri profesional guru dalam mengembangkan inovasi di sekolah.*
Kata kunci:
Perilaku Inovatif Guru; Organisasi Pembelajar; Motivasi; Efikasi Diri; Kepemimpinan Transformasional.

Abstract: This study examines the uneven development of innovative behavior among public elementary school teachers in responding to changing learning demands. It aims to analyze the direct effects of transformational leadership, learning organization, motivation, and self-efficacy on teachers' innovative behavior and to test the mediating role of self-efficacy. A quantitative explanatory design was employed. Data were collected through a closed-ended Likert-scale questionnaire administered to 374 public elementary school teachers in Serang Regency, selected through proportional stratified sampling from a population of 5,645 teachers. Hypotheses were tested using Structural Equation Modeling based on Partial Least Squares. The findings show that transformational leadership, learning organization, motivation, and self-efficacy positively affect teachers' innovative behavior. The three exogenous variables also positively influence self-efficacy. Self-efficacy emerged as the strongest predictor and partially mediated all indirect relationships. These results contribute to educational management by emphasizing the importance of strengthening teachers' professional confidence in developing school innovation.
Keywords:
Innovative Teacher Behavior; Learning Organization; Motivation; Self-Efficacy; Transformational Leadership.

Introductions

The changing ecosystem of elementary education has placed teachers in an increasingly dynamic professional space. In elementary classrooms, teachers are expected not only to transmit subject matter but also to design age-appropriate learning experiences, respond to diverse student characteristics, integrate concrete and digital learning resources, and adjust assessment practices to classroom needs. In this context, teachers' innovative behavior has become increasingly important because instructional innovation is not limited to the use of technology. It also involves teachers' capacity to adjust strategies, use emerging opportunities, and develop new approaches that improve the quality of learning. Recent studies on teacher innovative behavior show that innovation is increasingly needed when teachers face curriculum reform, technological transformation, and adaptive learning demands (Dumbi & Indrasari, 2024; Lu, Xu, & Tian, 2025; Sofwan et al., 2024).

At the elementary school level, the demand for innovation does not always move in parallel with teachers' readiness to transform instructional practices. Some teachers demonstrate creativity in selecting strategies, media, and learning approaches, whereas others continue to rely on routine, conventional, and less responsive teaching patterns. Education office records on teacher innovation in public elementary schools in Serang Regency indicate that the adoption of innovative teaching practices is uneven across schools, particularly in the use of learning media, classroom strategies, and collaborative instructional improvement. This local condition suggests that teachers' innovative behavior cannot be explained only by individual creativity. Conceptually, it can be understood as a process involving school-level support, teachers' motivation, and psychological readiness. Therefore, transformational leadership, learning organization, and motivation are positioned as antecedents, self-efficacy as the psychological mechanism, and teachers' innovative behavior as the behavioral outcome in the proposed model (Dinas Pendidikan Kabupaten Serang, 2023; Hidayat & Patras, 2024; Setyaningrum, Taufiqulloh, & Habibi, 2024).

Principal transformational leadership is one organizational factor that can create space for teachers' innovation. Transformational leadership consists of idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. In elementary schools, these dimensions are reflected when principals provide a clear vision for instructional improvement, model openness to change, encourage teachers to question routine teaching patterns, and give individualized support for professional growth. Such leadership can help teachers feel trusted and supported when experimenting with new instructional ideas. Recent empirical studies also show that principal transformational leadership is related to teachers' innovative behavior, although the strength of the relationship may vary according to school context, teacher characteristics, and mediating psychological conditions (Bao, 2024; Hidayat & Patras, 2024; Umalihayati, Fajari, Mutoharoh, Nuryati, & Ma'arif, 2026).

Beyond leadership, schools as learning organizations provide an important condition for sustaining teacher innovation. A school that functions as a learning organization offers opportunities for continuous learning, dialogue, team collaboration, knowledge sharing, empowerment, and strategic learning leadership. These conditions are especially relevant in elementary schools because teachers often need to exchange classroom experiences, develop teaching media together, and reflect on how students respond to instructional changes. Work motivation also provides the personal energy that encourages teachers to improve teaching practices, search for new strategies, and persist through the difficulties of change. In work motivation theory, motivation can be understood through achievement needs, affiliation needs, power needs, and autonomous work regulation that drives individuals to act beyond routine tasks (Febriyanti, Suharyati, & Sunaryo, 2025; Gagné et al., 2015; Li, Pei, & Zhao, 2025).

However, leadership support, organizational learning culture, and motivation do not automatically become innovative action when teachers lack belief in their own capabilities. Self-efficacy explains why some teachers are more willing to try new methods, take pedagogical risks, and persist when instructional innovation does not immediately produce the expected results. In elementary school practice, self-efficacy is important because teachers must manage heterogeneous learners, integrate multiple subjects, prepare concrete learning materials, and maintain classroom engagement while trying new approaches. Teachers with stronger self-efficacy tend to view these demands as manageable professional challenges rather than obstacles to be avoided. In educational settings, self-efficacy has been shown to relate to teachers' ability to manage instruction, sustain effort, and direct professional action toward innovative practices (Bandura, 1977, 1997; Gkontelos, Vaiopoulou, & Stamovlasis, 2023).

The current empirical landscape indicates that the relationships among transformational leadership, learning organization, motivation, self-efficacy, and teachers' innovative behavior have not been fully established within an integrated explanatory framework. Some studies emphasize transformational leadership and school climate (Bao, 2024; Hidayat & Patras, 2024), others examine learning organization and self-efficacy (Febriyanti, Suharyati, &

Sunaryo, 2025), while others discuss motivation and self-efficacy as pathways to innovative teaching (Li, Pei, & Zhao, 2025). These studies provide important evidence, yet fewer models simultaneously combine leadership, learning organization, motivation, and self-efficacy in one mediating framework, particularly among public elementary school teachers in a local Indonesian district. This gap is important because teacher innovation in elementary schools is shaped not only by the presence of supportive leadership or motivation but also by the extent to which those factors strengthen teachers' confidence to convert ideas into classroom practice (Hosseini & Haghighi Shirazi, 2021; Huang, Mansor, Kamaruzaman, & Xue, 2026; Siregar, Widodo, Permana, Sriyono, & Saputro, 2026).

Based on this gap, the present study proposes a model that positions self-efficacy as a mediator in the relationships among transformational leadership, learning organization, motivation, and teachers' innovative behavior. The novelty of this study lies in four contributions. Contextually, it focuses on public elementary school teachers in Serang Regency, where innovation readiness varies across schools. Conceptually, it integrates organizational, learning-cultural, motivational, and psychological factors in one explanatory model. Methodologically, it tests both direct and indirect paths through SEM-PLS. Theoretically, it clarifies self-efficacy as a psychological conversion mechanism through which school support and work motivation are translated into teachers' innovative behavior. Accordingly, this study aims to examine the direct predictive relationships among transformational leadership, learning organization, motivation, self-efficacy, and teachers' innovative behavior, and to test the indirect relationships of transformational leadership, learning organization, and motivation with teachers' innovative behavior through self-efficacy (De Jong & Den Hartog, 2010; Janssen, 2000; Liu, Yin, Wang, & Lu, 2024).

Method

This study was designed to test a model that positions teachers' innovative behavior as an outcome of the relationships among transformational leadership, learning organization, motivation, and self-efficacy. The mediating role of self-efficacy was grounded in social cognitive theory, which explains that environmental and personal factors influence behavior partly through individuals' beliefs in their own capabilities (Bandura, 1977, 1997). In the proposed model, transformational leadership and learning organization represent school-level support, motivation represents personal work drive, self-efficacy represents the psychological mechanism, and teachers' innovative behavior represents the professional behavioral outcome. The hypotheses were organized into three groups: direct predictors of teachers' innovative behavior, predictors of self-efficacy, and indirect pathways through self-efficacy. A quantitative explanatory design was used because the study aimed to examine predictive relationships among latent variables in a single empirical model. SEM-PLS was considered appropriate because the model was prediction-oriented, involved multiple reflective latent constructs, tested mediation paths, and used survey data from a heterogeneous teacher population across districts (Hair et al., 2011; Hair et al., 2019).

Table 1. Research Hypotheses

Hypothesis	Proposed Relationship	Path
H1	Transformational leadership positively affects teachers' innovative behavior.	X1 -> Y
H2	Learning organization positively affects teachers' innovative behavior.	X2 -> Y
H3	Motivation positively affects teachers' innovative behavior.	X3 -> Y
H4	Transformational leadership positively affects teacher self-efficacy.	X1 -> M
H5	Learning organization positively affects teacher self-efficacy.	X2 -> M
H6	Motivation positively affects teacher self-efficacy.	X3 -> M
H7	Teacher self-efficacy positively affects teachers' innovative behavior.	M -> Y

H8	Teacher self-efficacy mediates the effect of transformational leadership on teachers' innovative behavior.	X1 -> M -> Y
H9	Teacher self-efficacy mediates the effect of learning organization on teachers' innovative behavior.	X2 -> M -> Y
H10	Teacher self-efficacy mediates the effect of motivation on teachers' innovative behavior.	X3 -> M -> Y

Source: Authors' elaboration, 2025.

The study population consisted of public elementary school teachers in Serang Regency, totaling 5,645 teachers across 707 schools in 29 districts. A sample of 374 teachers was determined using Slovin's formula with a 5% margin of error. Because teacher distribution varied across districts, the districts were treated as strata and respondents were selected proportionally to ensure balanced representation. Proportional stratified sampling was employed to reflect the heterogeneous distribution of public elementary school teachers across the regency.

The study measured five main constructs: transformational leadership, learning organization, motivation, self-efficacy, and teachers' innovative behavior. Transformational leadership was assessed through idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration (Bass & Riggio, 2006). Learning organization was evaluated through continuous learning, dialogue and inquiry, team learning and collaboration, embedded systems, empowerment, system connection, and strategic leadership. Motivation was measured using need for achievement, need for affiliation, and need for power (Gagné et al., 2015; McClelland, 1987). Self-efficacy encompassed level, generality, and strength (Bandura, 1977). Teachers' innovative behavior was assessed through idea generation, idea exploration, idea championing, and idea implementation (De Jong & Den Hartog, 2010). Data were collected using a closed-ended Likert-scale questionnaire distributed both directly in schools and online via Google Forms to reach respondents across all districts.

Data were analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with SmartPLS. The analysis involved two stages: evaluation of the measurement model and evaluation of the structural model. The measurement model was assessed using Cronbach's Alpha, rho_A, Composite Reliability, and Average Variance Extracted (AVE), with minimum criteria of 0.70 for reliability coefficients and 0.50 for AVE. After the constructs met the validity and reliability criteria, the structural model was evaluated by examining R-square, standardized path coefficients, t-statistics, p-values, and indirect effects. The significance of direct and indirect paths was tested using bootstrapping with 5,000 subsamples. Because the data were collected through a cross-sectional survey, the results were interpreted as predictive associations rather than definitive causal effects (Joe F Hair, Ringle, & Sarstedt, 2011; Joseph F Hair, Risher, Sarstedt, & Ringle, 2019; Vinzi, Trinchera, & Amato, 2010).

Findings

The SEM-PLS results are presented in four parts: measurement model evaluation, explanatory power of the structural model, direct path testing, and indirect path testing through self-efficacy.

The measurement model was evaluated to ensure that the research constructs met validity and reliability criteria. The results show that all constructs had Cronbach's Alpha, rho_A, and Composite Reliability values above 0.70. In addition, the AVE values for all constructs were above 0.50. These results indicate that self-efficacy, transformational leadership, motivation, learning organization, and teachers' innovative behavior met the minimum criteria for structural model testing. However, the very high reliability coefficients should be interpreted cautiously because values above 0.95 may indicate possible item overlap that can be refined in future instrument development.

Table 2. Measurement Model

Construct	Cronbach's Alpha	rho_A	Composite Reliability	AVE	Decision
Self-Efficacy (ED)	0.967	0.968	0.970	0.606	Valid
Transformational Leadership (KT)	0.966	0.968	0.969	0.597	Valid
Motivation (MO)	0.970	0.972	0.972	0.626	Valid

Learning Organization (OP)	0.974	0.975	0.976	0.662	Valid
Teachers' Innovative Behavior (PI)	0.968	0.969	0.971	0.612	Valid

Source: Processed primary data, 2025.

Learning organization had the highest AVE value at 0.662, whereas transformational leadership had the lowest AVE value at 0.597. Nevertheless, all AVE values exceeded the minimum threshold of 0.50, indicating that each construct adequately explained the variance of its indicators. Composite Reliability values ranged from 0.969 to 0.976, demonstrating very strong internal consistency across all constructs.

After the measurement model met validity and reliability criteria, the analysis proceeded to the structural model. The structural model was evaluated by examining R-square values to determine the ability of exogenous variables to explain endogenous variables. The results show that the R-square value for self-efficacy was 0.210, whereas the R-square value for teachers' innovative behavior was 0.545. This means that transformational leadership, learning organization, and motivation explained 21.0% of the variance in self-efficacy, while transformational leadership, learning organization, motivation, and self-efficacy explained 54.5% of the variance in teachers' innovative behavior.

Table 3 . R-square Values

Endogenous Construct	R-square	Adjusted R-square	Interpretation
Self-Efficacy (ED)	0.210	0.204	Low
Teachers' Innovative Behavior (PI)	0.545	0.540	Moderate

Source: Processed primary data, 2025.

The R-square value of 0.545 for teachers' innovative behavior indicates that the model has adequate explanatory power. More than half of the variance in teachers' innovative behavior can be explained by the variables included in the model. In contrast, the R-square value of 0.210 for self-efficacy suggests that other factors outside the model may also contribute to teachers' self-efficacy.

Direct effects were tested using bootstrapping by examining standardized path coefficients, t-statistics, and p-values. The hypotheses were interpreted according to three structural groups: organizational and motivational predictors of teachers' innovative behavior, predictors of self-efficacy, and the self-efficacy path to teachers' innovative behavior. The results show that all direct paths had p-values below 0.05; therefore, all direct-effect hypotheses were supported. Self-efficacy had the strongest direct standardized coefficient in predicting teachers' innovative behavior ($\beta = 0.368$), followed by learning organization ($\beta = 0.247$), transformational leadership ($\beta = 0.217$), and motivation ($\beta = 0.170$).

Table 4. Direct Effects

Hypothesis	Path	Coefficient	t-statistic	p-value	Decision
H1	KT -> PI	0.217	5.489	0.000	Supported
H2	OP -> PI	0.247	5.909	0.000	Supported
H3	MO -> PI	0.170	4.038	0.000	Supported
H4	KT -> ED	0.176	3.440	0.001	Supported
H5	OP -> ED	0.189	3.361	0.001	Supported
H6	MO -> ED	0.225	4.523	0.000	Supported
H7	ED -> PI	0.368	9.143	0.000	Supported

Source: Processed primary data, 2025.

Based on these results, self-efficacy was the most dominant direct predictor of teachers' innovative behavior. This indicates that teachers' belief in their own capabilities contributes more strongly to innovative behavior than the direct effects of transformational leadership, learning organization, and motivation. In predicting self-efficacy, motivation had the largest coefficient at 0.225, indicating that motivation was the strongest predictor of teacher self-efficacy in this model.

Indirect effects were tested to examine the mediating role of self-efficacy in the relationships among transformational leadership, learning organization, motivation, and teachers' innovative behavior. The

bootstrapping results show that all indirect paths had p-values below 0.05. Thus, self-efficacy mediated the effects of transformational leadership, learning organization, and motivation on teachers' innovative behavior.

Table 5. Indirect Effects

Hypothesis	Indirect Path	Coefficient	t-statistic	p-value	Decision
H8	KT -> ED -> PI	0.065	3.254	0.001	Supported
H9	OP -> ED -> PI	0.070	3.204	0.001	Supported
H10	MO -> ED -> PI	0.083	3.931	0.000	Supported

Source: Processed primary data, 2025.

The strongest mediating path was the effect of motivation on teachers' innovative behavior through self-efficacy, with a coefficient of 0.083. This was followed by the indirect effect of learning organization on teachers' innovative behavior through self-efficacy at 0.070 and the indirect effect of transformational leadership through self-efficacy at 0.065. Because both direct and indirect effects were significant, self-efficacy can be understood as a partial mediator in this research model.

Discussion

The results show that transformational leadership, learning organization, and motivation positively predict teachers' innovative behavior. This finding indicates that innovation among elementary school teachers is associated with both individual and school-level conditions. Among the three direct antecedents, learning organization showed the strongest coefficient (β = 0.247), followed by transformational leadership (β = 0.217) and motivation (β = 0.170). This pattern suggests that collaborative learning culture, dialogue, and shared instructional reflection may provide a stronger immediate context for teacher innovation than individual motivation alone. Transformational leadership remains important because its dimensions idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration can create a climate in which teachers are encouraged to question routine practices, try new methods, and receive support when innovation is uncertain (Bao, 2024; Dumbi & Indrasari, 2024; Sofwan et al., 2024). Therefore, the findings strengthen the argument that teacher innovation requires not only personal motivation, but also a school ecosystem that allows collaboration and renewal of instructional practice.

Transformational leadership, learning organization, and motivation also positively affect teacher self-efficacy. Motivation was the strongest predictor of self-efficacy in the model (β = 0.225), followed by learning organization (β = 0.189) and transformational leadership (β = 0.176). This means that teachers' confidence in handling instructional challenges is closely related to their internal drive to achieve, collaborate, and improve, while school learning culture and principal leadership provide contextual reinforcement. Teachers who are motivated, involved in collective learning, and supported by principals are more likely to believe that they can manage classroom change and develop new instructional practices. This finding is consistent with evidence showing that self-efficacy, transformational leadership, and school climate contribute to teacher innovativeness in Indonesia (Hidayat & Patras, 2024), and that motivation and self-efficacy function as important pathways to innovative teaching (Li et al., 2025), while strengthening learning organization and self-efficacy is relevant for increasing teacher innovativeness (Febriyanti et al., 2025).

Self-efficacy emerged as the strongest predictor of teachers' innovative behavior based on the highest standardized path coefficient (β = 0.368). This result indicates that teachers' professional confidence is a central psychological condition for generating, championing, and implementing new ideas. In self-efficacy theory, individuals who believe in their capabilities tend to sustain effort and persist when they encounter obstacles (Bandura, 1977, 1997). In the elementary teacher context, this confidence may help teachers redesign lessons, manage heterogeneous learners, and refine instructional strategies after trial and error. Nevertheless, because the data were self-reported and cross-sectional, this finding should be interpreted as a strong predictive association rather than direct behavioral evidence from classroom observation. This finding is also supported by Gkontelos et al. (2023), who found that self-efficacy is associated with teachers' innovative work behavior.

The mediation results show that self-efficacy partially mediates the relationships of transformational leadership, learning organization, and motivation with teachers' innovative behavior. The partial mediation claim is supported by the significance of both direct and indirect effects and by the VAF values of 23.05% for transformational leadership, 22.08% for learning organization, and 32.81% for motivation. These values indicate that self-efficacy explains a meaningful portion of the pathway from organizational and motivational factors to innovative behavior, while the antecedent variables still retain direct predictive roles. In this context, principal support, school learning culture, and work motivation become more effective when they strengthen teachers'

confidence to act innovatively. The strongest indirect pathway was motivation → self-efficacy → teachers' innovative behavior, suggesting that motivational energy becomes more relevant to innovation when it is accompanied by teachers' belief that they can implement new ideas in teaching (De Jong & Den Hartog, 2010; Gagné et al., 2015).

Theoretically, this study strengthens the understanding of teachers' innovative behavior by linking specific model constructs: transformational leadership and learning organization as organizational antecedents, motivation as a personal motivational antecedent, self-efficacy as a psychological mechanism, and teachers' innovative behavior as the instructional outcome. The model shows that innovation is not determined only by school support or motivation, but also by teachers' psychological readiness to take pedagogical risks and translate ideas into classroom practice. Practically, schools can operationalize these findings through structured mentoring, lesson study, peer coaching, teacher reflection forums, innovation awards, and principal-led professional dialogues that provide intellectual stimulation and individualized support. Such strategies can help innovation become a sustainable professional behavior rather than merely an administrative demand (Adhinugraha, Hardhienata, Sunaryo, Zaini, & Rozi, 2024; Liu et al., 2024).

Conclusion

This study concludes that transformational leadership, learning organization, motivation, and self-efficacy play important roles in shaping teachers' innovative behavior among public elementary school teachers in Serang Regency. All direct relationships in the model were significant, including the effects of transformational leadership, learning organization, and motivation on teachers' innovative behavior, as well as their effects on self-efficacy. Self-efficacy also emerged as the strongest predictor of teachers' innovative behavior. This finding shows that teacher innovation is not determined only by principal support, school learning culture, or work motivation, but also by teachers' beliefs in their own ability to generate, champion, and implement new ideas in instruction.

Theoretically, this study reinforces the role of self-efficacy as a psychological mechanism that connects organizational and motivational factors with teachers' innovative behavior. The model shows that transformational leadership, learning organization, and motivation work not only directly, but also through the strengthening of teachers' professional confidence. Practically, the findings suggest that improving teachers' innovative behavior requires a supportive school ecosystem. Principals need to develop leadership that offers inspiration, dialogue space, personal support, and intellectual stimulation. Schools should also strengthen teacher learning communities, professional collaboration, innovation mentoring, and appreciation for experimentation so that teachers feel more confident in innovating.

This study has several limitations. It was conducted only among public elementary school teachers in Serang Regency; therefore, generalization to private schools, other educational levels, or different regions should be made cautiously. In addition, the cross-sectional design cannot explain changes in teachers' innovative behavior over time. The use of self-reported questionnaire data may also involve subjective response bias. Future studies are encouraged to use longitudinal designs, mixed-method approaches, or additional observation and interview data. Further research may also examine other variables, such as digital competence, organizational support, innovation climate, knowledge sharing, or work engagement, to expand the model of teachers' innovative behavior.

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