

Exploring the Influence of Principal Leadership and Self-Development on Teacher Competence: Does the Mediation of Self-Experience Matter?

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ABSTRACT

Purpose – This study aims to examine the influence of principal leadership and self-development on teacher competence, with self-experience serving as a mediating variable. It investigates both direct and indirect relationships to understand how these variables contribute to professional capacity building in education.

Design/methods/approach – This research employed a quantitative approach using an ex post facto design. The sample consisted of 58 teachers from two Islamic junior high schools in East Java, selected through purposive sampling. Data were collected using a structured questionnaire covering four variables: principal leadership, self-development, self-experience, and teacher competence. A five-point Likert scale was used, and the data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The evaluation included tests for convergent and discriminant validity, reliability, coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), and both direct and indirect path coefficients.

Findings – The results show that principal leadership has a significant direct effect on teacher competence ($\beta = 0.468$, $T = 3.002$, $p < 0.01$), but no significant effect on self-experience ($\beta = -0.066$, $p > 0.05$). Self-development significantly influences self-experience ($\beta = 0.882$, $T = 5.897$, $p < 0.001$), though its direct effect on teacher competence is not significant ($\beta = 0.197$, $p > 0.05$). Self-experience positively influences teacher competence ($\beta = 0.324$) but does not serve as a statistically significant mediator in the relationship between either principal leadership or self-development and teacher competence. The model explains 81% of the variance in teacher competence ($R^2 = 0.810$) and shows strong predictive relevance ($Q^2 = 0.566$).

Research implications – Fi Schools and educational policymakers should support leadership development and design self-development programs that emphasize reflective practice. Teachers should be encouraged to engage in activities that integrate personal teaching experiences into their professional growth strategies to optimize instructional effectiveness.

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1. Introduction

Teacher competence refers to a teacher's ability to carry out their duties and responsibilities in a responsible and effective manner. Pedagogical competence is defined as a teacher's ability to manage student learning, which includes understanding students, planning and implementing instruction, evaluating learning outcomes, and nurturing students' talents and interests (Cañadas, 2023; Kartika & Jumadi, 2022; Suryaman et al., 2024). Personality competence positions the teacher as an individual with an ideal character. Hence, teachers are often considered role models who must possess the ability



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to develop their personal character. This competence includes personal development, interpersonal communication, guidance and counseling, and school administration (Afdal et al., 2023; Dhillon & Kaur, 2023). Social competence is based on the notion of humans as social and ethical beings. A teacher's social competence includes the ability to communicate effectively with students and their surroundings such as parents, neighbors, and colleagues (C. Huang et al., 2023; Kim et al., 2018).

Professional competence refers to the essential knowledge, expertise, and skills that educators must possess in fulfilling their teaching roles (Antera, 2021; T. Wang & Tian, 2023). A teacher is deemed professional when they master both theoretical and practical teaching skills and apply them effectively in real-world settings. This aligns with the findings of Arofah's research which asserts that teachers must possess four core competencies in performing their duties: pedagogical, personality, professional, and social (Baumgartner, 2022; Cañadas, 2023; Demissie et al., 2022; Kartika & Jumadi, 2022; T. Wang & Tian, 2023). These competencies are critical in enhancing the quality of education. Therefore, it is important to examine the factors influencing teacher competence, such as principal leadership, self-development, and self-experience.

In efforts to improve education quality, teacher competence remains the most critical factor. Enhancing teacher competence is often linked to the leadership of school principals (Texeira-Quiros & Justino, 2022). A successful school principal understands the complex nature of the school as an organization and is capable of carrying out leadership responsibilities effectively. The principal plays a pivotal role in the success of a school or institution, as the achievement of educational goals and quality is heavily influenced by their leadership (Berkovich & Eyal, 2017; Navaridas-Nalda et al., 2020). Supporting this perspective, it is highlighted that the principal is a key figure in steering the school towards desired changes (Mei Kin et al., 2018).

In addition to examining principal leadership, teacher competence enhancement can also be approached through teacher self-development. Self-development refers to efforts aimed at increasing one's professionalism to acquire competencies in accordance with national education policies and the development of science, technology, and the arts, typically achieved through participation in professional activities (Singh & Loh, 2024; Voelkel Jr. & Chrispeels, 2017). Teachers' self-development is of critical importance in enhancing their professional competence. Through continuous self-development, teachers can update their knowledge and skills in line with current trends in curriculum design, teaching methodologies, and educational technologies. Studies show that teacher competence directly impacts student achievement (Ken et al., 2023; Murwaningsih & Fauziah, 2023). High-quality self-development can strengthen a teacher's teaching skills, leading to positive outcomes for students' academic performance and development.

Self-experience refers to the knowledge and skills acquired through performing tasks, conducting observations, or encountering real-life situations (Galdames-Calderon, 2023; Gkonou & Miller, 2021). Teachers' personal experiences can significantly contribute to their professional growth. Encountering various challenges and classroom situations enhances teachers' understanding of student needs and effective teaching strategies (Antera, 2021; Truzoli et al., 2021). This study aims to explore the influence of principal leadership and self-development on teacher competence, while considering the mediating role of self-experience. Self-experience also facilitates the process of self-reflection, through which teachers can evaluate their performance, identify areas for improvement, and plan further development strategies. Reflection guided by personal experience can help teachers refine their instructional practices. Direct engagement in applying new learning concepts or strategies acquired through professional development can substantially reinforce teacher competence (Daumiller et al., 2021; Gu & Wang, 2021; Oliveira et al., 2021).

This study offers a deeper understanding of the factors affecting teacher competence and provides valuable insights into school management practices aimed at improving education quality.

Self-experience acts as a key mediator in the relationship between principal leadership and teacher self-development on teacher competence. Recognizing its urgency and leveraging self-experience effectively can enhance the success of teacher development efforts and ultimately contribute to the overall improvement of educational quality.

2. Literature Review and Hypothesis Development

2.1. *The Influence of Principal Leadership on Self-Experience and Teacher Competence*

The influence of principal leadership on teacher competence is highly significant in improving the quality of teaching and learning. Effective leadership encompasses not only the management of administrative and managerial tasks but also a commitment to the professionalism and self-development of teachers (Berkovich & Eyal, 2017; Mei Kin et al., 2018). A visionary principal can guide teachers toward achieving higher standards of competence. By providing clear direction, empowering, and supporting teachers, principals can create a learning environment that fosters collaboration, growth, and innovation. Furthermore, leadership that considers the individual needs and aspirations of teachers can enhance their motivation and engagement in performing their duties, thereby positively impacting the effectiveness and quality of teaching in schools (Berkovich & Eyal, 2017; Ken et al., 2023). Based on the alignment between theoretical concepts and previous research findings, the following hypothesis is proposed:

H-DIR 1&2: Principal leadership has a significant effect on improving teacher competence and self-experience.

2.2. *The Influence of Self-Development on Self-Experience and Teacher Competence*

The urgency of self-development's impact on teacher competence is increasingly relevant in the context of a constantly evolving educational landscape (Codina & Robinson, 2024; Legrain et al., 2019). As key agents in educating future generations, teachers must continuously update and enhance their skills to meet the ever-changing demands of modern education. Teacher self-development extends beyond improving technical teaching skills; it also involves refining interpersonal, leadership, and other professional abilities essential to creating an inclusive, student-centered, and growth-oriented learning environment (Lindner et al., 2021; Murwaningsih & Fauziah, 2023). In line with the continuity between conceptual frameworks and prior research, the following hypothesis is formulated:

H-DIR 3&4: Self-development significantly affects teacher competence and self-experience.

2.3. *The Influence of Self-Experience on Teacher Competence*

The influence of self-experience on teacher competence becomes increasingly crucial in a rapidly changing educational context (Galdames-Calderon, 2023; Oliveira et al., 2021). Teachers' self-experience includes personal, professional, and learning experiences that shape their understanding and perspectives on education. Teachers with rich and diverse self-experiences tend to possess deeper insights into student needs, effective instructional strategies, and classroom management techniques (Gkonou & Miller, 2021; Truzoli et al., 2021). Moreover, self-experience enhances teacher motivation, engagement, and commitment to the profession. In light of the theoretical-practical coherence, the following hypothesis is proposed:

H-DIR 5: Self-experience significantly influences teacher competence.

2.4. *The Mediating Role of Self-Experience in the Influence of Principal Leadership and Self-Development on Teacher Competence*

The mediating role of self-experience in the relationship between principal leadership and teacher competence highlights the importance of understanding how individual experiences affect interactions within the work environment, particularly in educational settings (Antera, 2021; Cañadas, 2023; Sutrisno et al., 2023; Y. Wang et al., 2022). Additionally, the mediation of self-experience can support principals in cultivating an inclusive and growth-oriented school culture. By considering teachers' experiences in decision-making and program planning, principals can foster a work environment that encourages engagement, collaboration, and mutual support. By nurturing awareness of self-experience and creating space for reflective practice, principals can assist teachers in strengthening their professional identity, increasing motivation, and promoting critical thinking about teaching practices. Therefore, the mediation of self-experience in the context of principal leadership is essential for creating a work environment that enables teachers to realize their full potential and contribute meaningfully to the school's educational goals (Baumgartner, 2022; Demissie et al., 2022; Rahimi & Tafazoli, 2022). Based on the alignment between conceptual insights and empirical findings, the following hypothesis is stated:

H-IND 1&2: Self-experience mediates the positive influence of principal leadership and self-development on teacher competence.

3. Method

3.1. *Research Design and Participants*

This study employed an explanatory and correlational research design using Partial Least Squares Structural Equation Modeling (PLS-SEM), an approach used to explore the relationships between variables within a conceptual model. PLS-SEM is a multivariate statistical method utilized to analyze the relationships among latent or measured variables within a structural model. By adopting this approach, the study integrates explanatory and correlational elements to better understand the complexity of inter-variable relationships within the conceptual framework. PLS-SEM allows researchers to examine the model holistically, including identifying causal and correlational relationships among variables, thus providing a deeper understanding of the observed phenomena.

This study applied non-probability sampling with a purposive sampling technique. The sample consisted of 58 teachers from MTsN 9 Magetan and MTsN 6 Madiun.

3.2. *Data Collection*

The data collection technique used in this study was a questionnaire comprising four variables. The independent variables included school principal leadership and self-development; the mediating variable was self-experience, and the dependent variable was teacher competence. A Likert scale was used, consisting of four response options ranging from strongly disagree to strongly agree. Data were collected via an online survey using Google Forms.

The process of constructing the questionnaire began with identifying key indicators for each variable based on existing literature, followed by the formulation of specific statements to reflect each indicator.

Respondents were given clear instructions on how to complete the questionnaire, informed of the research objectives and the importance of their participation, and assured of the confidentiality of their responses. Specific guidance was also provided to explain how to use the Likert scale and to remind respondents to answer each item honestly based on their personal

experiences and perceptions. Once the questionnaires were completed and returned, the data were analyzed to evaluate the relationships between the studied variables, thereby aiding in the understanding of how principal leadership, self-development, and self-experience influence teacher competence. The research variables and instruments are presented in Table 1.

Table 1. Constructs of Research Variables

Variable	Indicator	Construct Code	References
Principal Leadership (X1)	Agent of renewal	PL1	(Berkovich & Eyal, 2017; Chen, 2024; Galdames-Calderon, 2023; Mei Kin et al., 2018, 2018)
	Information provider	PL2	
	Active reformer	PL3	
	Teacher involvement	PL4	
	Recognition provider	PL5	
	Opportunity facilitator	PL6	
	Motivator	PL7	
	Personal approach	PL8	
Self-Development (X2)	Mastery of teaching methods	SD1	(Codina & Robinson, 2024; Murwaningsih & Fauziah, 2023; Singh & Loh, 2024; Voelkel Jr. & Chrispeels, 2017)
	Mastery of media	SD2	
	Application of training knowledge	SD3	
	Development of teaching models	SD4	
	Academic publication	SD5	
	Technology development	SD6	
	Development of teaching materials	SD7	
	Lesson plan development	SD8	
Self-Experience (Z)	Training	SE1	(Gkonou & Miller, 2021; Oliveira et al., 2021; Truzoli et al., 2021; Y. Wang et al., 2022)
	Evaluation of teaching methods	SE2	
	Self-confidence	SE3	
	Classroom management	SE4	
	Teaching experience	SE5	
	Collaboration	SE6	
Teacher Competence (Y)	Solution provider	TC1	(Antera, 2021; Kartika & Jumadi, 2022; Rahimi & Tafazoli, 2022; Sutrisno et al., 2023; T. Wang & Tian, 2023)
	Application of teaching models	TC2	
	Student mentoring	TC3	
	Effective communication	TC4	
	Parental engagement	TC5	
	Professional teacher community	TC6	
	Good personality	TC7	
	Emotional stability	TC8	
	Adherence to professional ethics	TC9	
	Honesty	TC10	
	Instructional media	TC11	
	Reference books	TC12	
	Variety of teaching methods	TC13	

3.3. Data Analysis

The statistical analysis in this study employed the Partial Least Squares Structural Equation Modeling (PLS-SEM) technique. The first stage, the assessment of the outer model, focused on evaluating the measurement model to establish the validity and estimate the reliability of both indicators and constructs. The requirements for this stage included a loading factor (λ) greater than 0.70 and an Average Variance Extracted (AVE) value above 0.50 for reflective constructs (Daryono et al., 2024; Fauzan et al., 2023; Supriyanto & Amrin, 2022). Reliability estimation was performed using Cronbach's Alpha, Rho_A, and Composite Reliability (CR), with acceptable values exceeding 0.70.

The next stage, goodness of fit testing, aimed to examine the predictive power and model adequacy. One of the key criteria was predictive relevance, assessed through the strength of the model's predictive power using the blindfolding procedure (Fauzan et al., 2023; Hariyanto et al., 2022). Finally, the inner model evaluation was conducted to test the significance of both direct effects (H-DIR 1–5) and indirect effects (mediating roles, H-IND 1–2).

4. Results

4.1. PLS-SEM Analysis: Evaluation of the Structural Model (Inner Model)

The evaluation of the measurement model is essential to ensure that the indicators used to measure constructs or latent variables align with the research objectives and possess high quality. The primary goal of measurement model evaluation is to assess construct validity. By analyzing the relationships between indicators and the constructs they represent, researchers can verify that the indicators genuinely reflect the intended aspects of the constructs. Through the analysis of factor loadings, reliability, and discriminant validity, researchers can determine which indicators should be retained in the analysis and which should be excluded.

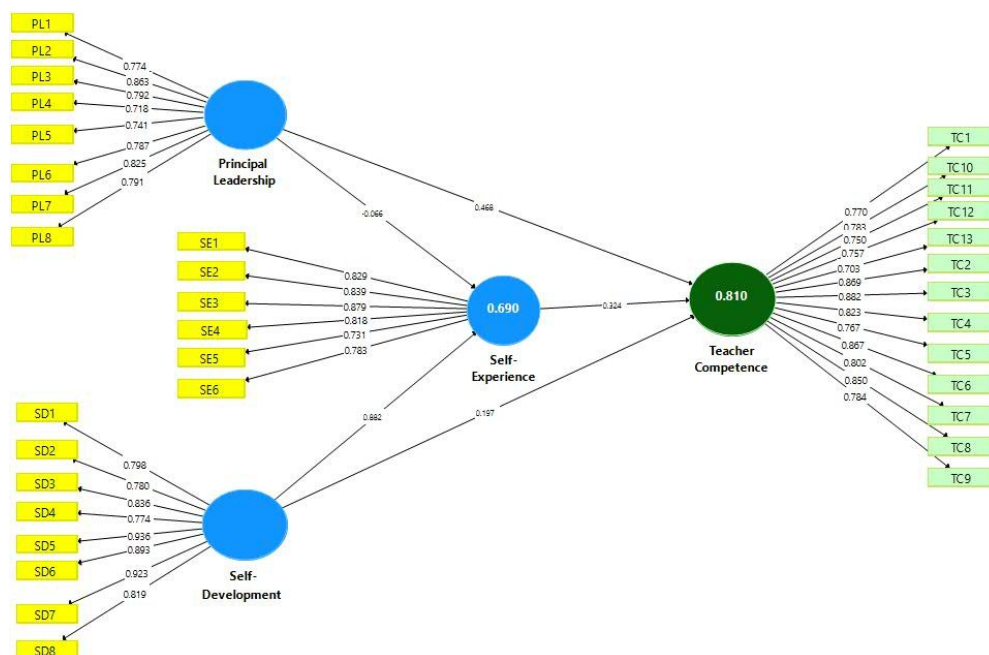


Figure 1. Measurement Model Evaluation

Based on Table 2, the overall loading factor values for each sub-variable are greater than 0.70 (ranging from 0.703 for *Learning Method Variation* to 0.936 for *Publication*). This indicates that the correlation level between the sub-variables and their respective constructs is between 70.30% and 93.60%. The Average Extracted Variance (AVE) values for each variable are also above 0.50, with values ranging from 0.620 for *Principal Leadership (X1)* to 0.717 for *Self-Development (X2)*. Therefore, it can be concluded that each sub-variable and variable in the research model supports the criteria for convergent validity.

Based on the factor loading coefficient values, the most dominant item in measuring teacher competence is the *Publication* construct, with a loading factor of 0.936 (SD5). This implies that the *Publication* construct explains 93.60% of the variance in teacher competence. Conversely, the weakest item is the *Learning Method Variation* construct, with a loading factor of 0.703 (TC13 = 70.30%).

A variable is considered reliable if it has Cronbach's Alpha (CA), rho_A, and Composite Reliability (CR) values greater than 0.70. Figure 2 shows that all variables have CA values ranging from 0.898 to 0.953, rho_A values from 0.900 to 0.955, and CR values from 0.922 to 0.959. Hence, it can be concluded that the internal consistency reliability of the instrument across the three aspects exceeds 0.70, indicating a strong reliability in measuring teacher competence.

Table 2. Measurement Model Evaluation

Variable	Indicator	Convergent Validity		Reliability and Consistency		
		FL ($\geq 0,70$)	AVE ($\geq 0,70$)	CA ($\geq 0,70$)	Rho_A ($\geq 0,70$)	CR ($\geq 0,70$)
Principal's Leadership (X1)	PL1	0,774	0,620	0,912	0,915	0,929
	PL2	0,863				
	PL3	0,792				
	PL4	0,718				
	PL5	0,741				
	PL6	0,787				
	PL7	0,825				
	PL8	0,791				
Self-Development (X2)	SD1	0,798	0,717	0,943	0,945	0,953
	SD2	0,780				
	SD3	0,836				
	SD4	0,774				
	SD5	0,936				
	SD6	0,893				
	SD7	0,923				
	SD8	0,819				
Self-Experience (Z)	SE1	0,829	0,664	0,898	0,900	0,922
	SE2	0,839				
	SE3	0,879				
	SE4	0,818				
	SE5	0,731				
	SE6	0,783				
Teacher Competence (Y)	TC1	0,770	0,644	0,953	0,955	0,959
	TC2	0,869				
	TC3	0,882				
	TC4	0,823				
	TC5	0,767				
	TC6	0,867				
	TC7	0,802				
	TC8	0,850				
	TC9	0,784				
	TC10	0,783				
	TC11	0,75				

TC12	0,757
TC13	0,703

The Fornell-Larcker test is one of the methods used in Partial Least Squares Structural Equation Modeling (PLS-SEM) to evaluate the discriminant validity of constructs within a model. This test aims to ensure that different constructs in the model can be distinguished from one another. It is conducted by comparing the variance explained by a construct with the variance explained by other constructs in the model. If the variance explained by a construct is greater than the variance explained by other constructs, then the construct has good discriminant validity. Based on Table 3, the correlation value between the variables School Principal Leadership → Teacher Competence is 0.832, which is higher than the correlation values between School Principal Leadership and other variables (0.788; 0.797; 0.637). The same approach is applied to assess the correlations of other variables.

Table 3. Discriminant Validity: The Fornell-Larcker Criterion

Variable	X1	X2	Y	Z
Principal Leadership (X1)	0.888			
Self-Development (X2)	0.797	0.847		
Teacher Competence (Y)	0.832	0.839	0.802	
Self-Experience (Z)	0.637	0.829	0.786	0.815

One of the main purposes of the HTMT (Heterotrait-Monotrait Ratio) test is to assess discriminant validity within a model. HTMT is used to evaluate the extent to which constructs measured by different indicators represent distinct constructs in the model. HTMT is also useful in assessing multicollinearity among constructs. Multicollinearity may occur when constructs are highly correlated, which can pose problems in estimating and interpreting the results of SEM analysis. Based on Table 4, the results show that all HTMT matrix values are ≤ 0.90 (ranging from 0.692 to 0.897). Educational institutions can design self-development programs for teachers that focus on self-reflection and self-understanding. These programs should provide opportunities for teachers to reflect on their own experiences, identify strengths and weaknesses, and plan further steps for personal development. It can be concluded that the HTMT correlations among all variables in this study's instrument meet the discriminant validity requirement in measuring the improvement of teacher competence.

Table 4. Discriminant Validity: HTMT

Variable	X1	X2	Y	Z
Principal Leadership (X1)				
Self-Development (X2)	0.854			
Teacher Competence (Y)	0.888	0.883		
Self-Experience (Z)	0.692	0.897	0.844	

4.2. PLS-SEM Analysis: Evaluation of the Structural Model (Inner Model)

Structural evaluation in PLS-SEM analysis primarily aims to assess the predictive accuracy of the proposed model. This is achieved by evaluating the extent to which the model can explain the empirical data variation and accurately predict the endogenous variables. Overall, the structural evaluation seeks to enhance understanding of the phenomenon under investigation within the research context. By analyzing the relationships among variables, researchers can identify the contributing factors to the phenomenon and gain deeper insights into the underlying dynamics.

The R^2 (coefficient of determination) indicates how well the PLS-SEM model explains the variation in the observed endogenous variables (constructs). A higher R^2 value signifies a greater proportion of construct variance that the model can explain. R^2 also allows comparisons between

different PLS-SEM models. Researchers can use R^2 values to compare the effectiveness of different models in explaining the variance in observed constructs. Based on Table 5, the R^2 coefficient for the Teacher Competence variable is 0.810, meaning that the variables Principal Leadership, Self-Development, and Self-Experience influence Teacher Competence by 81.00%, while the remaining 19.00% is influenced by other variables outside the model.

The f^2 (effect size) is one of the measures in PLS-SEM used to evaluate the strength of the influence of latent variables on observed constructs. Specifically, f^2 measures the predictive strength of a latent variable on a specific construct within the model. More precisely, f^2 is calculated by dividing the squared regression loading of the latent variable on a given construct by the residual error variance of that construct. The result indicates the extent to which the latent variable contributes to explaining the variation of the observed construct. f^2 assists in determining the significance of each latent variable's contribution to the observed construct and allows comparisons between the contributions of multiple latent variables to the same construct. This helps identify which latent variable has the strongest influence on the observed construct. Based on the output, the most dominant variable influencing Teacher Competence is Principal Leadership ($f^2 = 0.420$), which falls into the medium category, while the weakest variable is Self-Development ($f^2 = 0.039$), categorized as small.

Tabel 5. Pengukuran Model Struktural: R^2 , f^2 , Q^2

Variable	R^2		Effect Size (f^2)		Cross-Validated Construct (Q^2)				
	Value	Decision	Value	Decision	Redundancy		Communality		Predictive Strength
PL (X 1)	-	-	0,420	Large	464.000	-	232.438	0,499	Strong
SD (X 2)	-	-	0,039	Small	464.000	-	173.045	0,627	Strong
SE (Z)	0,690	Medium	0,172	Medium	192.531	0,447	166.181	0,522	Strong
TC (Y)	0,810	Strong	-	-	373.895	0,504	326.952	0,566	Strong

The subsequent test involves examining the predictive relevance value (Q^2), which aims to validate the model's predictive ability in accordance with real-world conditions. Based on Table 5, all Q^2 values exceed the cutoff point (greater than zero). The results of the predictive relevance (Q^2) calculation show values ranging from 0.447 to 0.504 for the Cross-validated Redundancy Construct and from 0.499 to 0.627 for the Cross-validated Communality Construct. Therefore, the measurement model for Teacher Competence is able to explain approximately 44.70% to 62.70% of the phenomenon under study. The results from both procedures indicate that the model has strong predictive power for teacher competence.

4.3. Path Analysis and Hypothesis Testing

One of the primary objectives of hypothesis testing is to examine the relationships among variables within the proposed model. This is achieved by analyzing the strength and significance of the relationships among the identified variables. The evaluation of direct effects allows researchers to assess the consistency between empirical findings and the theoretical framework supporting the model. Furthermore, this testing also analyzes the significance of mediation effects within the research model. This is essential to understand the underlying mechanisms of the relationships among variables and how certain variables may mediate or alter the relationships between others.

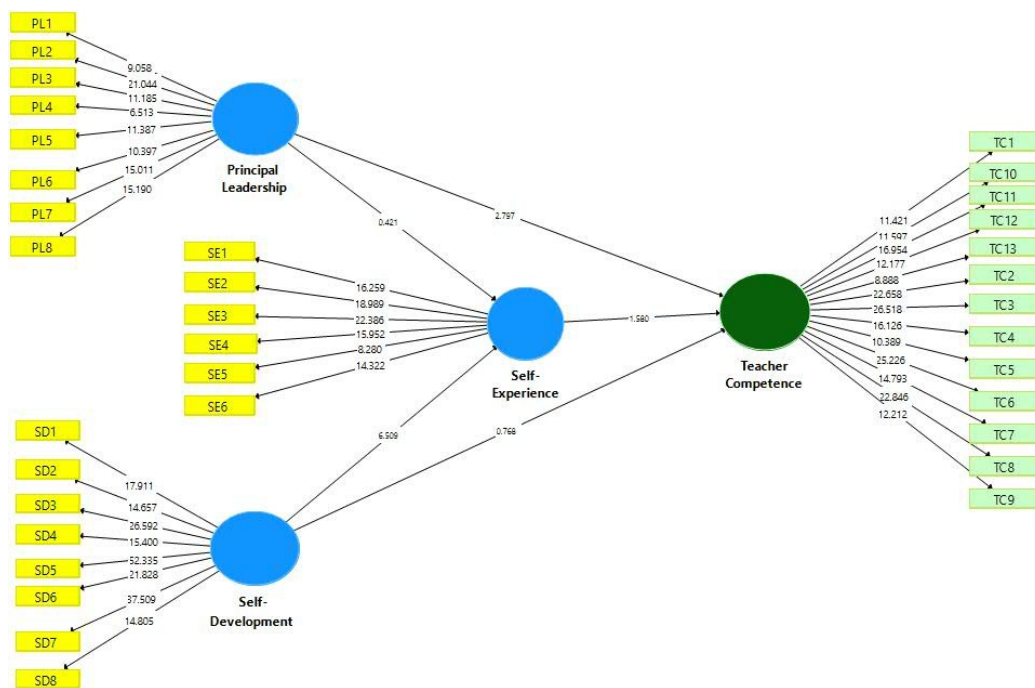


Figure 2. Structural Model Evaluation

Based on Table 6, hypothesis H-DIR 1 (Principal Leadership (X1) → Teacher Competence (Y)) yields a β -value of 0.468, T-statistic = 3.002 (≥ 1.96), and p -value = 0.003 (< 0.05). This indicates that the Principal Leadership variable (X1) has a significant and positive effect on Teacher Competence (Y). This means that an increase in Principal Leadership (X1) corresponds to an increase in Teacher Competence (Y), and vice versa.

H-DIR 2 (Principal Leadership (X1) → Self-Experience (Z)) produces a β -value of -0.066, T-statistic = 0.391 (< 1.96), and p -value = 0.696 (> 0.05). This indicates that Principal Leadership (X1) has a negative and insignificant effect on Self-Experience (Z).

For the path from Self-Development (X2) → Teacher Competence (Y), the analysis shows a β -value of 0.197, T-statistic = 0.770 (< 1.96), and p -value = 0.442 (> 0.05). This implies that although an increase in Self-Development (X2) leads to an increase in Teacher Competence (Y), the effect is not statistically significant.

H-DIR 4 (Self-Development (X2) → Self-Experience (Z)) produces a β -value of 0.882, T-statistic = 5.897 (≥ 1.96), and p -value = 0.000 (< 0.05), indicating that Self-Development (X2) has a significant and positive effect on Self-Experience (Z). This suggests that an increase in Self-Development (X2) leads to an increase in Self-Experience (Z), and vice versa.

H-DIR 5 (Self-Experience (Z) → Teacher Competence (Y)) yields a β -value of 0.324, T-statistic = 1.552 (< 1.96), and p -value = 0.121 (> 0.05). This suggests that although Self-Experience (Z) positively affects Teacher Competence (Y), the effect is not statistically significant.

Among all paths, the highest β -value is found in the relationship between Self-Development (X2) and Self-Experience (Z), which is 0.882. Therefore, Self-Development and Self-Experience are the most influential contributors to enhancing Teacher Competence.

Table 6. Path Coefficient Results: Direct Effects

Hyp.	Path Analysis	β -Value (+)/(-)	Sample Mean	SDV	T-Statistic (≥ 1.96)	P-Value (≤ 0.05)	Decision
H-DIR 1	PL $\rightarrow$ TC	0.468	0.459	0.156	3.002	0.003	Accepted
H-DIR 2	PL $\rightarrow$ SE	-0.066	-0.057	0.168	0.391	0.696	Rejected
H-DIR 3	SD $\rightarrow$ TC	0.197	0.190	0.257	0.770	0.442	Rejected
H-DIR 4	SD $\rightarrow$ SE	0.882	0.881	0.150	5.897	0.000	Accepted
H-DIR 5	SE $\rightarrow$ TC	0.324	0.339	0.209	1.552	0.121	Rejected

4.4. The Mediating Role of Self-Experience in the Influence of Principal Leadership and Self-Development on Teacher Competence

Based on Table 7, in hypothesis H-IND 1, the test results on the mediating effect of the Self-Experience variable (Z) indicate a negative effect (β -value = -0.021) and an insignificant result (T-statistic $0.364 < 1.96$ and p -value $0.716 > 0.05$) between the Principal Leadership factor (X1) and Teacher Competence (Y). Therefore, H-IND 1 states: "There is a negative and insignificant effect of the mediating role of self-experience in the relationship between principal leadership and teacher competence."

In hypothesis H-IND 2, the test results on the mediating effect of the Self-Experience variable (Z) indicate a positive effect (β -value = 0.286) but also an insignificant result (T-statistic $1.667 < 1.96$ and p -value $0.096 > 0.05$) between the Self-Development factor (X2) and Teacher Competence (Y). Therefore, H-IND 2 states: "There is a positive and insignificant effect of the mediating role of self-experience in the relationship between self-development and teacher competence."

Table 7. Path Coefficient Results: Indirect Effects

Hyp.	Path Analysis	β -value (+/-)	SDV	T-statistic (> 1.96)	p-value	Decision	Mediation Role
H-IND 1	PL $\rightarrow$ SE $\rightarrow$ TC	-0.021	0.059	0.364	0.716	Rejected	No Mediation
H-IND 2	SD $\rightarrow$ SE $\rightarrow$ TC	0.286	0.171	1.667	0.096	Rejected	Partial Mediation

5. Discussion

The results of the hypothesis test H-DIR1 show a T-statistic value of 3.002, indicating statistical significance because the T-statistic > 1.96 ; therefore, the first hypothesis is accepted. School principal leadership has a positive influence on improving teacher competence. This finding aligns with previous research showing that principal leadership significantly enhances teacher competence by providing clear direction, strong motivation, and continuous support to teachers (Mei Kin et al., 2018). However, this finding contradicts a study indicating that school leadership does not significantly improve teacher competence due to a lack of effective communication, insufficient support for teachers' professional development, and an inability to address challenges (Galdames-Calderon, 2023). The positive relationship is further supported by research asserting that principal leadership contributes to teacher competence by delivering relevant and accurate information, which helps teachers understand expectations and perform optimally (So-oabeb & Plessis, 2023).

The leadership of a school principal plays a crucial role in shaping the self-experience of all members of the school community (Berkovich & Eyal, 2017; Ken et al., 2023). The leadership style adopted by a principal can create an environment that influences individuals' perceptions, attitudes, and behaviors within the school context. When a principal practices inclusive, motivational, and growth-oriented leadership, it positively affects the self-experience of both students and staff. Providing consistent guidance, support, and opportunities for individual growth helps build deep confidence, motivation, and psychological well-being among school community members (S. Huang et al., 2019; Huo, 2023; Rodriguez-Barboza et al., 2023).

Self-development has a positive effect on improving teacher competence, although the effect is not directly significant. This finding is in line with a study showing that teachers' self-development through publishing efforts positively impacts teacher competence, though the effect may not be directly significant due to its focus on academic aspects rather than practical classroom implementation (Codina & Robinson, 2024). Conversely, this finding contrasts with research suggesting that self-development, particularly through academic publication, significantly enhances teacher competence by deepening subject matter understanding and exposing teachers to best practices and educational research (Legrain et al., 2019; Lindner et al., 2021; T. Wang & Tian, 2023).

Self-development helps teachers improve their instructional quality. Through participation in relevant training, seminars, or courses, teachers can acquire new skills and deepen their understanding of best teaching practices, thereby enhancing students' learning experiences (Murwaningsih & Fauziah, 2023; Rahimi & Tafazoli, 2022). Self-development fosters teacher professionalism by encouraging a proactive attitude toward lifelong learning, strong work ethics, and a commitment to excellence in their profession. It also motivates teachers to be innovative in their teaching approaches (Singh & Loh, 2024; Voelkel Jr. & Chrispeels, 2017). Teachers who engage in self-development tend to be more open to new ideas, technologies, and alternative teaching methods that can increase their teaching effectiveness. As each student generation has diverse needs and learning styles, self-development enables teachers to recognize and respond to individual students more effectively, creating an inclusive and supportive learning environment (Calderon et al., 2021; Widyastuti et al., 2023).

The influence of self-development on self-experience is highly significant in shaping resilient, empowered, and developing individuals. Self-development is a process that allows individuals to continuously learn, grow, and evolve (Daumiller et al., 2021; Gu & Wang, 2021). Through self-development, individuals can explore their potential, identify strengths and weaknesses, and develop the skills necessary to achieve goals and succeed in various aspects of life. This forms a strong foundation for achieving a positive and fulfilling self-experience (Daumiller et al., 2021; Gu & Wang, 2021; Lindner et al., 2021). Hence, the urgency of self-development influencing self-experience lies in creating individuals who are resilient and ready to face life's challenges.

Good teacher competence implies a willingness and ability to continuously develop and learn from personal experience. This finding is supported by research concluding that competent teachers apply various professional development strategies to enhance their capabilities (Hanaysha et al., 2023). However, it contradicts another study that defined good teacher competence as involving strong interpersonal skills, collaboration, and effective communication with students' parents (Wahyuni, 2020).

Self-experience, or personal teaching experience, positively contributes to enhancing teacher competence, especially in terms of self-confidence. This finding aligns with research indicating that teachers draw on their own experiences to strengthen their confidence in teaching and classroom management (Oliveira et al., 2021). On the contrary, other studies emphasize that teachers' self-experience should be evaluated through the effectiveness of the instructional methods they use (Truzoli et al., 2021). This suggests that teachers' experiences in implementing various teaching methods influence their perceptions of the methods' effectiveness in addressing students' needs and classroom

contexts, where effective methods can ultimately improve their competence (Dhillon & Kaur, 2023; Kim et al., 2018; Suryaman et al., 2024).

The mediating role of self-experience in teacher self-development is crucial for strengthening competence. In this context, self-experience serves as an important mediator in the learning and personal growth process of teachers (Truzoli et al., 2021; T. Wang & Tian, 2023). Self-experience mediation also enhances teachers' motivation and commitment to self-development (Ken et al., 2023). When teachers feel understood and supported during self-development, they are more motivated to engage in independent learning and enhance their skills. This may include participation in training, workshops, or other professional development programs tailored to their individual needs and preferences. Thus, through the mediation of self-experience, school leadership can foster a culture of continuous self-development within the school, ultimately improving overall teacher competence (Baumgartner, 2022; Demissie et al., 2022; Singh & Loh, 2024).

Based on the above findings, it can be concluded that school principal leadership has a significant impact when it provides relevant information and continuous support to teachers. Meanwhile, teachers' self-development positively influences competence improvement, although its direct effect is not statistically significant (Hanaysha et al., 2023; Wahyuni, 2020). Furthermore, teacher self-experience positively contributes to improving competence, particularly in terms of confidence. Educational institutions can design self-development programs focused on self-reflection and self-understanding. These programs should provide opportunities for teachers to reflect on their experiences, identify strengths and weaknesses, and plan steps for further personal and professional development.

6. Conclusion

Regarding the variable of School Principal Leadership, this study recommends that schools and government institutions ensure that effective principals are able to provide the support, guidance, and resources teachers need to improve their instructional quality. Through professional development, personal approaches, collaboration, and recognition, teacher competence development can be enhanced. Teachers who are committed to continuous learning and skill development tend to be more effective in guiding students and achieving better learning outcomes. Self-development is a fundamental foundation for improving teacher competence and contributes to the overall enhancement of educational quality.

Teachers can improve their competence by regularly reflecting on their own experiences. Through this process, teachers can identify their strengths and weaknesses in developing their competencies. Based on the survey results, several steps can be taken to enhance teacher competence through self-experience, such as experimenting with teaching methods, facing classroom challenges, sharing experiences with colleagues, and seeking feedback from fellow teachers or other school staff about their performance. Teachers can utilize their own experiences as a powerful learning resource to enhance their competence and provide more meaningful learning experiences for students.

Declarations

Author contribution statement

Annisa Nur Faradila and Rihab Wit Daryono contributed to this work and jointly wrote the research report at every stage of the study.

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Data availability statement

The datasets generated during and analyzed during the current study are available from the corresponding author upon reasonable request.

Declaration of Interest's statement

The authors declare that they have no known competing financial interests or personal relationships that could have influenced the work reported in this paper.

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