

Principal Leadership Practices and Their Effects on Teacher Creativity and Performance in Elementary Schools

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ABSTRACT

Purpose – This study investigates the relationships among Principal Leadership Practices, Teacher Creativity, and Teacher Performance in elementary schools and explores leadership mechanisms that support teachers' professional outcomes.

Methodology – A mixed-methods design was employed involving 42 elementary school teachers and 5 principals. Quantitative data were analyzed using descriptive statistics, Pearson correlations, and simple linear regression, while interview data were examined through thematic analysis and integrated with the statistical findings.

Findings – Principal Leadership Practices were positively associated with Teacher Creativity and Teacher Performance, explaining 38.4% and 46.2% of their variance, respectively. Teacher Creativity also significantly predicted Teacher Performance, explaining 33.6% of its variance. Qualitative findings identified professional development, instructional innovation, collaborative decision-making, recognition and motivation, and a supportive school climate as key leadership practices.

Contribution – The study demonstrates that principal leadership and teacher creativity operate as complementary professional resources. It provides integrated empirical and contextual evidence demonstrating how supportive leadership can foster instructional creativity and strengthen teacher performance in elementary school settings. These findings offer practical guidance for leadership development and improvement.

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INTRODUCTION

The effectiveness of elementary education fundamentally rests on teachers executing their professional responsibilities at a high level and adjusting their practices in response to a changing classroom environment. Teachers are expected not only to deliver content but also to design edifying learning experiences, react to a multitude of student needs, address a wide range of instructional problems, and create innovative solutions that improve the effectiveness of their teaching practice. In this regard, teacher creativity and teacher performance are two intertwined dimensions of educational quality. However, teacher creativity and high standards of professional performance do not come just from individual capability. The organizational conditions in which teachers work also shape the school's citizenship, especially leadership practices and the roles of school principals.

They are key figures in designing learning environments that enable teachers to grow, innovate, and thrive. Today, school leadership is much more than overseeing administrative tasks and executing management procedures. Principals are expected to foster both leadership and professional learning, promote instructional innovation, involve teachers in decision making, provide recognition for professional accomplishments, create motivation, and execute a collegial climate (Amarta et al., 2023; Surbakti & Aisyah, 2024). These leadership practices can affect teachers' understanding of their freedom to practice autonomously, pursue development opportunities, and try new instructional methods. Agricultural Sciences · Specialization: School Leadership. Thus, the Principal Leadership Practices construct represents a significant organizational antecedent in accounting for the differences between Teacher Creativity and Teacher Performance (Hudaya, 2023). In this research, Principal Leadership Practices represent all of the actions and behaviors by which school principals offer professional assistance for successful practice to their teachers, foster innovation among them, promote collaborative working conditions amongst teachers as a team that recognizes each teacher's contribution in improving student academic performance by providing effective professional support (Sudarti et al., 2024; Sidiq & Saleh, 2025). Leadership that trusts teachers, provides opportunities for development, recognizes their professional contributions, and allows them to participate meaningfully in decisions should create a climate where teachers are more willing to run tests of new instructional ideas (AlMazrouei, 2023; Muzaki & Dawud, 2024). On this view, principal leadership is not just a vehicle to manage at the organizational level but also potentially an enabling condition for teacher development and instructional innovation.

One reason why Teacher Creativity is especially relevant in elementary-school contexts is that teaching often requires flexible responses to variation in students' learning needs, abilities, interests, and classroom conditions. Teacher creativity can manifest itself in one's ability to come up with new but fitting instructional ideas and practices, creatively adapt traditional methods, use learning materials in new contexts, design stimulating classroom activities, and respond effectively to unexpected problems arising during the lesson (Probosiwi dkk., 2025; Wulandari, 2025; Zhou & Frisdahl, 2024). As such, creative teachers are more likely to step outside of conventional teaching methods and create learning opportunities that suit the specific conditions in their classrooms.

Creativity does not emerge in a vacuum; it does not exist without the school atmosphere. These organizational contexts offer too little professional autonomy and recognition, insufficient collaboration, and too few opportunities for experimentation, which may inhibit teachers' motivation to integrate new practices. Conversely, leadership that fosters innovation, provides developmental support, promotes collaboration between teachers, and recognizes the contributions of all stakeholders may reinforce the conditions needed for creative instructional behavior (Nadilah dkk., 2025). Thus, teacher creativity is conceptualized not only as an individual trait but also as a professional outcome linked to leadership and organizational support.

Teacher Performance continues to be an indicator of effective educational practice, alongside creativity. Teacher performance refers to how well teachers execute their professional responsibilities, including planning instruction, implementing learning activities, managing classroom processes, and evaluating student learning (and broader obligations). This is important because the fate of school-improvement programs ultimately rests on how educational policies, curricula, and institutional demands are implemented in

classrooms; these demands sustain teacher performance (Fadhilah & Wasliman, 2026; Supriyanto et al.). One way Principal leadership may positively affect teacher performance is by establishing clear professional expectations and providing the support teachers need to meet them. In this sense, certain leadership practices described in research (professional development opportunities to support teachers), motivation strategies for management, and personnel encouragement participation by directing work conditions conducive to a psychological climate of the school) could provide favorable conditions that strengthen teacher engagement and professionalism (Meliyani dkk, 2025; Partin & Derrington, 2023; Sumantri dkk.. Thus, the link between principal leadership and teacher performance is significant and warrants systematic research, especially in elementary school settings, where principals have closer interactions with teachers who directly shape the school's professional climate.

These relationships indicate that principal, teacher creativity, and performance are interdependent rather than independent constructs at the organizational and individual levels. Three of the relationships are particularly pertinent: Principal Leadership Practices–Teacher Creativity, Principal Leadership Practices–Teacher Performance, and Teacher Creativity–Teacher Performance. (Hudaya, 2023). The joint consideration of these relationships offers one way to better understand how leadership may be related with his/her professional behaviors and outcomes (Thoibah dkk., 2026). The dynamics of these relationships are conceptually important, but interpreting them solely through quantitative indicators provides only limited insight into how leadership works in schools. Although statistical analyses can help determine the nature, strength, and predictive power of relationships between principal leadership and teacher creativity or performance, they say little (at best) about how principals translate their influence on teachers into action daily in schools (Rahayu dkk., 2025; Surbakti & Aisyah, 2024). Not quantitative association alone explains how principals foster teachers' professional development, promote experimentation with instruction and collaborative decision-making, recognize teachers' contributions, or create supportive environments in which work takes place.

This limitation underscores the importance of mixing quantitative and qualitative evidence. The adoption of a mixed-methods approach not only enables exploration of the statistical relationships among the major constructs but also provides contextual accounts of how leadership practices operate in schools. While you use quantitative data to determine if stronger principal leadership practices are correlated with enhanced teacher creativity and performance, your qualitative data can identify the specific leadership mechanisms that might help explain these patterns. In terms of methodology, this type of integration provides a more holistic description of school leadership than either method can provide on its own (Khofi & Sholeh, 2025). This study extends research on school leadership by considering Principal Leadership Practices, Teacher Creativity, and Teacher Performance within a single analytical framework. It includes qualitative feedback from principals to complement quantitative evidence gathered from teachers. Instead of only exploring whether leadership is related to teacher outcomes, this study also aims at identifying the organizational practices that principals use to generate an innovative climate, facilitating teachers' creativity and professional performance (Mariyana dkk., 2024; Zahru dkk., 2025). This integrated view is an important contribution as it ties statistical trends to the context of leadership practice within real, everyday structures in elementary schools.

Despite the growing body of research on principal leadership and teacher outcomes, previous studies have generally examined teacher creativity and teacher performance separately, with limited attention to how these professional outcomes are simultaneously associated with principal leadership practices within an integrated educational management framework. Furthermore, quantitative evidence on these relationships is rarely complemented by principals' perspectives that explain the organizational and managerial mechanisms through which leadership practices support teachers. This limitation creates a need for research that integrates statistical relationships with contextual evidence concerning professional development, instructional innovation, collaborative decision-making, recognition and motivation, and supportive school climate. Accordingly, the present study addresses this gap by examining Principal Leadership Practices, Teacher Creativity, and Teacher Performance within a unified framework while incorporating qualitative evidence

from school principals to explain how educational leadership and management practices contribute to teachers' professional outcomes.

The study presumes that principals can create organizational conditions that drive teachers' experiences and behaviors in their profession. Professional support may build teachers' capacity to take on work arrangements; encouragement of instructional innovation may increase opportunities for creative practice; collaborative decision-making may strengthen professional engagement; recognition and motivation might solidify teachers' commitment; and a supportive school climate may provide the supportive psychological and organisational conditions necessary for sustained professional performance. From this perspective, principal leadership is framed as a set of organizational processes that establish and sustain the conditions for teacher creativity and performance.

This study aims to test the model of relationships and predictive association between Principal Leadership Practices, Teacher Creativity, and Teacher Performance in elementary schools. In particular, this research aims to: (1) identify the levels of Principal Leadership Practices, Teacher Creativity and Teacher Performance; (2) analyze the relationship between Principal Leadership Practices and Teacher Creativity; (3) analyze the relationship between Principal Leadership Practices and Teacher Performance; (4) examine the relationships between Teacher Creativity and Teacher Performance; And finally, (5) explore principals' perceptions about leadership practices that promote teacher creativity to enhance professional performance. Finally, the findings of the quantitative and qualitative studies are integrated to provide a fuller explanation of the influence of principal leadership in elementary school contexts. By relating quantitative relationships to qualitative explanations of leadership practices, this study should broaden understanding and clarify the ways in which school leadership is associated with teachers' creative and professional capacities. The results may also offer a practical guide for school leaders and educational administrators interested in building professional development, pedagogical entrepreneurship, teacher engagement, appreciation, incentive systems, and supportive organizational environments in elementary schools.

METHODOLOGY

Research Design and Participants

A mixed-methods approach is utilized in this study that combines quantitative and qualitative data to provide a broader understanding of the relationships between principal leadership practices, creativity of elementary teachers, and performance (Aladwan & Sawalhi, 2026; Moon & Lee, 2023; Surbakti & Aisyah, 2024). The quantitative method is used to define how much of each construct, the relationships between constructs, and principal leadership ability to predict teacher creativity and performance (Kayombo dkk., 2025). In contrast, the qualitative method offers a contextual account of principals' leadership practices in supporting teacher creativity and performance.

The study included 42 elementary school teachers as quantitative respondents and 5 principals as qualitative informants. Because all three research constructs are measured as teacher perceptions, the main unit of analysis for the statistical tests is the teacher. Principals are not included in the statistical sample with teachers; rather, they were used as interview data sources to supplement the quantitative results. Therefore, although the study includes 52 participants overall, statistical procedures are conducted on the teacher data, and qualitative procedures are performed on the principal data. Conceptually, the research explored three conceptual relationships: 1) Principal Leadership Practices → Teacher Creativity, 2) Principal Leadership Practices → Teacher Performance, and 3) Teacher Creativity → Teacher Performance. These three relationships provide the foundation for the correlation and regression analyses performed during the quantitative stage.

Research Variables, Instruments, and Measurements

There are three principal constructs in the research: Principal Leadership Practices as the main predictor variable, Teacher Creativity, and Teacher Performance (Kibtiyah dkk, 2024; Pattasang dkk, 2025; Sudiarti et al.). Questionnaires measuring these three constructs were administered to elementary teachers. This study

employed a five-point Likert scale for all quantitative variables, ranging from 1 = strongly disagree to 5 = strongly agree. The mean was subsequently classified into three groups: low level (1.00–2.33), medium level (2.34–3.67), and high level (3.68–5.00). In addition to questionnaires, interviews with 10 school principals were conducted to gather information on leadership practices implemented within the schools. The interviews focused on five areas: the principal's support for teacher professional development, teacher learning innovation, collaborative decision-making, incentives and motivation, and supportive school climate (Kibtiyah dkk, 2024; Yongco, 2026). Table 1 provides an overview of the variables, data sources, and research analysis methods.

Table 1. Variables, Data Sources, Measurement, and Analytical Techniques

Component	Data Source	Measurement/Instrument	Analytical Technique
Principal Leadership Practices	42 primary school teachers	Questionnaire using a 5-point Likert scale	Descriptive statistics, Pearson correlation, and linear regression
Teacher Creativity	42 primary school teachers	Questionnaire using a 5-point Likert scale	Descriptive statistics, Pearson correlation, and linear regression
Teacher Performance	42 primary school teachers	Questionnaire using a 5-point Likert scale	Descriptive statistics, Pearson correlation, and linear regression
Principal Leadership Practices	5 school principals	Semi-structured interviews	Thematic analysis
Integration of Findings	Teacher and principal data	Quantitative and qualitative findings	Comparative analysis and integrated interpretation

Table 1 summarizes the study variables, data sources, measurement instruments, and analytical techniques employed in the research. The quantitative component involved 42 primary school teachers as the main respondents for measuring three constructs: (1) Principal Leadership Practices, (2) Teacher Creativity, and (3) Teacher Performance. Each construct was assessed using a questionnaire based on a five-point Likert scale. The quantitative data were subsequently analyzed through descriptive statistics, Pearson correlation, and linear regression. Descriptive statistics were used to identify the general level of each construct, Pearson correlation was applied to examine the strength and direction of the relationships among variables, and linear regression was employed to determine the predictive contribution of Principal Leadership Practices and Teacher Creativity to the corresponding outcome variables.

The qualitative component involved 5 school principals who participated in semi-structured interviews focusing on Principal Leadership Practices. Based on the proposed conceptual relationships, the following hypotheses are formulated: H1. Principal Leadership Practices are positively and significantly associated with Teacher Creativity. H2. Principal Leadership Practices are positively and significantly associated with Teacher Performance. H3. Teacher Creativity is positively and significantly associated with Teacher Performance. This integration enabled the quantitative results to be interpreted alongside qualitative evidence, thereby providing a more comprehensive understanding of (1) how principal leadership relates to teacher creativity, (2) how principal leadership relates to teacher performance, and (3) how the qualitative findings explain the statistical relationships identified in the quantitative analysis.

Data Collection Procedure

Quantitative data were collected in the first phase through questionnaires administered to 42 primary school teachers. The questionnaire assessed teachers’ perceptions of Principal Leadership Practices, Teacher Creativity, and Teacher Performance, with responses measured using a five-point Likert scale. The

quantitative data were used to describe the overall level of each construct and to examine the relationships among principal leadership practices, teacher creativity, and teacher performance. This phase provided empirical evidence regarding the magnitude, direction, and pattern of the relationships among the study variables. In the second phase, qualitative data were obtained through semi-structured interviews with 5 school principals. The interviews explored how leadership practices were implemented within primary school contexts and how principals created organizational conditions that supported teacher creativity, professional development, and engagement. The qualitative findings were used to provide contextual explanations for the statistical patterns identified in the quantitative analysis. By integrating questionnaire data with principals' accounts of their leadership experiences and practices, the study connected statistical relationships with school-level processes, thereby providing a more comprehensive understanding of how principal leadership contributes to teacher creativity and professional performance.

Data Analysis Techniques and Integration of Findings

Data analysis was conducted in several stages. In the first stage, the quantitative data were analyzed using descriptive statistics to compute the mean, standard deviation, minimum, maximum, and category for each construct. This analysis was used to describe the levels of Principal Leadership Practices, Teacher Creativity, and Teacher Performance. In the second stage, Pearson correlation analysis was employed to examine the direction and strength of the relationships between: (1) Principal Leadership Practices and Teacher Creativity; (2) Principal Leadership Practices and Teacher Performance; and (3) Teacher Creativity and Teacher Performance. The correlation analysis also included significance values and 95% confidence intervals.

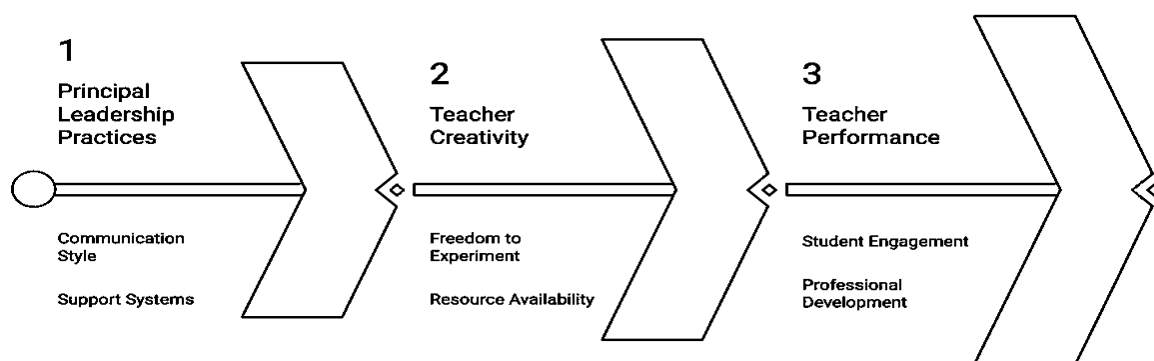


Figure 1. Analyzing Predictive Relationships in Education

The regression results were evaluated based on B , β , t , p , R^2 , Adjusted R^2 , and 95% confidence intervals. The R^2 value was used to indicate the proportion of variance in the dependent variable explained by each predictor. Subsequently, interview data obtained from 5 school principals were analyzed using thematic analysis. The analysis generated five major themes: professional support and teacher development, encouraging instructional innovation, collaborative decision-making, recognition and motivation, and creating a supportive school climate. These themes represent key leadership practices that support teacher creativity and performance. In the final stage, the quantitative and qualitative findings were integrated during interpretation. The statistical results were used to demonstrate the strength of the relationships and the predictive capacity among the variables. In contrast, the interview findings were used to explain the leadership mechanisms underlying these relationships. The integration of both data sources provided a more comprehensive understanding of how principal leadership practices are associated with enhanced teacher creativity and performance in primary schools.

FINDINGS

This section presents the empirical findings obtained from the quantitative and qualitative analyses conducted in this study. The findings are systematically organized according to the analytical procedures used to examine the relationships among Principal Leadership Practices, Teacher Creativity, and Teacher

Performance. The quantitative findings are presented using descriptive statistics, Pearson correlation, and simple linear regression to provide evidence on the characteristics, relationships, and predictive patterns of the study variables. Subsequently, the qualitative findings derived from interviews with school principals are integrated with the quantitative results to provide contextual explanations of the identified statistical relationships. Organizing the findings by analytical procedure allows the results to be interpreted sequentially and clearly, while demonstrating how different forms of evidence contribute to a comprehensive understanding of principal leadership, teacher creativity, and professional performance in elementary schools.

Descriptive Statistical Analysis

Descriptive statistical analysis was conducted to examine the overall levels of Principal Leadership Practices, Teacher Creativity, and Teacher Performance among 52 elementary school teachers who participated in the study. The analysis included the mean, standard deviation, minimum and maximum scores, and a categorical interpretation for each construct. All variables were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). For interpretation, mean scores were classified into three levels: low (1.00–2.33), moderate (2.34–3.67), and high (3.68–5.00).

Table 1. Descriptive Statistics of the Study Variables

Variable	Mean	SD	Minimum	Maximum	Category
Principal Leadership Practices	4.16	0.48	2.80	5.00	High
Teacher Creativity	4.03	0.52	2.60	5.00	High
Teacher Performance	4.21	0.45	2.90	5.00	High

As shown in Table 1, all three study variables were classified as high. Teacher Performance obtained the highest mean score ($M = 4.21, SD = 0.45$), followed by Principal Leadership Practices ($M = 4.16, SD = 0.48$) and Teacher Creativity ($M = 4.03, SD = 0.52$). These results indicate that the 52 participating teachers generally perceived principal leadership practices positively and reported high levels of instructional creativity and professional performance. Teacher Creativity showed slightly greater variability than the other constructs, whereas Teacher Performance demonstrated the most consistent scores among respondents.

Normality Test

Before conducting inferential statistical analysis, a normality test was performed to assess whether the data distribution for each research variable met the assumption of normality. This examination is important because Pearson correlation and simple linear regression are parametric procedures that require appropriate distributional assumptions. The Shapiro–Wilk test was selected to evaluate the distribution of Principal Leadership Practices, Teacher Creativity, and Teacher Performance among the 42 teacher respondents. The decision criterion was based on a significance level of .05, where a p-value greater than .05 indicates that the data do not deviate significantly from a normal distribution.

Table 2. Results of the Shapiro–Wilk Normality Test

Variable	Shapiro–Wilk Statistic	df	Sig.	Interpretation
Principal Leadership Practices	0.972	42	0.384	Normally distributed
Teacher Creativity	0.965	42	0.221	Normally distributed
Teacher Performance	0.976	42	0.512	Normally distributed

The normality test was conducted to assess whether the data on Principal Leadership Practices, Teacher Creativity, and Teacher Performance were normally distributed. The Shapiro–Wilk test was employed because the quantitative analysis involved 42 teacher respondents. As presented in Table 2, the significance values for Principal Leadership Practices ($p = .384$), Teacher Creativity ($p = .221$), and Teacher Performance ($p = .512$) were all greater than the .05 significance level. These results indicate that the distributions of the three study variables did not significantly deviate from normality. Therefore, the normality assumption was considered

satisfied, supporting the use of parametric statistical procedures in the subsequent analyses, particularly Pearson correlation and simple linear regression.

Homogeneity Test

Prior to conducting the correlation and regression analyses, a homogeneity test was performed to assess the consistency of variance across the groups included in the study. This analysis was intended to ensure that differences in data variability did not substantially affect the subsequent parametric statistical procedures. Levene's Test was used to assess the homogeneity of variance among Principal Leadership Practices, Teacher Creativity, and Teacher Performance. The assessment used a significance level of .05 as the decision criterion. A significance value greater than .05 was interpreted as evidence that the variance across the examined groups was statistically homogeneous.

Table 3. Results of Levene's Homogeneity Test

Variable	Levene Statistic	df1	df2	Sig.	Interpretation
Principal Leadership Practices	1.126	2	39	0.334	Homogeneous
Teacher Creativity	0.874	2	39	0.425	Homogeneous
Teacher Performance	1.342	2	39	0.273	Homogeneous

The homogeneity test was conducted to examine whether the variance of the study data was relatively consistent across the groups involved in the analysis. Levene's Test was used with a significance criterion of .05. As shown in Table 3, the significance values for Principal Leadership Practices ($p = .334$), Teacher Creativity ($p = .425$), and Teacher Performance ($p = .273$) were all greater than .05. These results indicate that no statistically significant differences in variance were identified across the examined groups. Accordingly, the data variance was considered homogeneous. Together with the normality test results, these findings provide preliminary evidence that the quantitative data met the relevant assumptions for proceeding with subsequent parametric analyses.

Pearson Correlation Analysis

Pearson correlation analysis was conducted to examine the relationships among Principal Leadership Practices, Teacher Creativity, and Teacher Performance among 52 elementary school teachers. The results are presented in Table 2.

Table 2. Pearson Correlations among the Study Variables

Relationship	Pearson's r	p-value	95% CI	Interpretation
Principal Leadership ↔ Teacher Creativity	0.62	< 0.001	[0.42, 0.76]	Strong positive
Principal Leadership ↔ Teacher Performance	0.68	< 0.001	[0.50, 0.80]	Strong positive
Teacher Creativity ↔ Teacher Performance	0.58	< 0.001	[0.36, 0.74]	Moderate positive

The results show that all relationships were positive and statistically significant. Principal Leadership Practices were strongly associated with Teacher Creativity ($r = .62$, $p < .001$) and Teacher Performance ($r = .68$, $p < .001$). The strongest relationship was found between Principal Leadership Practices and Teacher Performance, indicating that stronger leadership practices were associated with higher teacher performance. Teacher Creativity was also positively related to Teacher Performance ($r = .58$, $p < .001$), indicating that teachers with higher instructional creativity tended to demonstrate better professional performance. Moreover, all 95% confidence intervals were above zero, confirming the consistency of the positive relationships. Overall, the findings indicate that effective principal leadership is associated with higher teacher creativity and performance, while teacher creativity is also related to stronger teacher performance. These results provide a basis for further analysis of the direct and indirect effects of Principal Leadership on Teacher Performance through Teacher Creativity.

Simple Linear Regression Analysis

Simple linear regression analyses were conducted to examine the predictive relationships among Principal Leadership Practices, Teacher Creativity, and Teacher Performance among 52 elementary school teachers. Three regression models were tested: Principal Leadership Practices → Teacher Creativity, Principal Leadership Practices → Teacher Performance, and Teacher Creativity → Teacher Performance.

Table 3. Summary of Simple Linear Regression Analyses

Predictor → Outcome	B	β	t	p	R ²	Adjusted R ²	95% CI for B
Principal Leadership → Teacher Creativity	0.67	0.62	5.59	< 0.001	0.384	0.372	[0.43, 0.91]
Principal Leadership → Teacher Performance	0.64	0.68	6.56	< 0.001	0.462	0.452	[0.44, 0.84]
Teacher Creativity → Teacher Performance	0.50	0.58	5.03	< 0.001	0.336	0.323	[0.30, 0.70]

The results showed that Principal Leadership Practices significantly predicted Teacher Creativity ($B = 0.67$, $\beta = .62$, $t = 5.59$, $p < .001$), explaining 38.4% of the variance in Teacher Creativity ($R^2 = .384$). Principal Leadership Practices also significantly predicted Teacher Performance ($B = 0.64$, $\beta = .68$, $t = 6.56$, $p < .001$), accounting for 46.2% of the variance in Teacher Performance ($R^2 = .462$), representing the strongest predictive relationship among the three models.

Teacher Creativity also significantly predicted Teacher Performance ($B = 0.50$, $\beta = .58$, $t = 5.03$, $p < .001$), explaining 33.6% of the variance in Teacher Performance ($R^2 = .336$). Overall, the findings indicate that stronger principal leadership practices are associated with greater teacher creativity and higher professional performance, and that teacher creativity also contributes significantly to improved teacher performance.

Comparison of Predictive Relationships

To further clarify the magnitude of the predictive relationships, the proportion of explained variance (R^2) was compared across the three regression models.

Principal Leadership has the strongest predictive relationship with Teacher Performance, explaining the largest portion of variance.

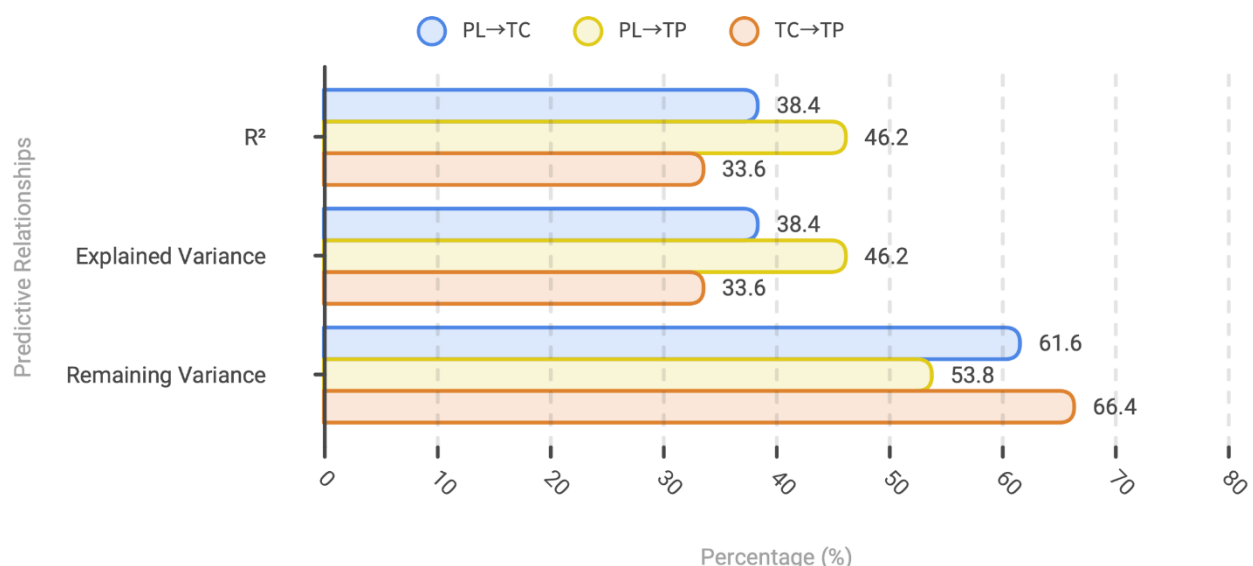


Figure 2. Predictive Relationships and Variance Breakdown

The results demonstrate that Principal Leadership Practices explained 38.4% of the variance in Teacher Creativity and 46.2% of the variance in Teacher Performance. In comparison, Teacher Creativity explained 33.6% of the variance in Teacher Performance. The largest explanatory contribution was found for the

relationship between Principal Leadership and Teacher Performance (46.2%), indicating that principal leadership represents a particularly important predictor of teachers' professional performance. Overall, these percentages demonstrate that leadership practices make a substantial contribution to both teacher creativity and performance, although other individual, organizational, and contextual factors may account for the remaining variance.

Integration of Quantitative and Qualitative Findings

Before integrating the two data sources, the findings from each approach were considered in relation to their respective analytical purposes. The quantitative analysis identified the strength and direction of relationships among Principal Leadership Practices, Teacher Creativity, and Teacher Performance. At the same time, the qualitative interviews with five principals provided contextual explanations of how leadership was practiced in schools. Integrating these findings enabled statistical patterns to be interpreted alongside principals' experiences, providing a more comprehensive understanding of the leadership mechanisms that support teacher creativity and professional performance.

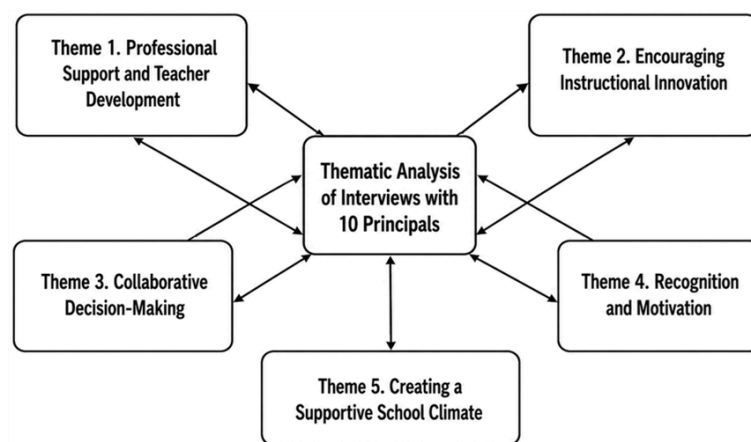


Figure 3. Thematic Map of Principal Leadership Practices in Elementary Schools

The integration of quantitative data from 42 teachers and qualitative interviews with 5 principals revealed a consistent pattern across both data sources. Quantitative findings showed that Principal Leadership Practices were positively and significantly associated with both Teacher Creativity and Teacher Performance. Regression analyses further indicated that principal leadership significantly predicted variations in teachers' creativity and professional performance. The qualitative findings provided contextual explanations for these statistical relationships. Five leadership practices emerged as particularly important: professional support and teacher development, encouragement of instructional innovation, collaborative decision-making, recognition and motivation, and the creation of a supportive school climate. These practices illustrate how principals create conditions that enable teachers to develop new instructional approaches and maintain effective professional performance.

Qualitative interviews with five principals further clarified these leadership practices. Regarding professional development, P1 stated, "We encourage teachers to attend training and share what they learn with colleagues." Concerning learning innovation, P2 explained, "Teachers are given opportunities to try new methods and use different learning media." Collaborative decision-making was also emphasized, as P3 noted, "Important school programs are discussed together so teachers can contribute their ideas." Regarding incentives and motivation, P4 stated, "We appreciate teachers' achievements and continuously encourage them to improve their performance." Finally, P5 highlighted a supportive school climate, explaining, "We maintain open communication and encourage teachers to support one another." These accounts indicate that principal leadership operates through professional support, instructional autonomy, participation, recognition, and collegial relationships, thereby creating favorable conditions for teacher creativity and sustained professional performance.

The integrated findings indicate three key conclusions: (1) stronger Principal Leadership Practices are associated with higher Teacher Creativity; (2) stronger Principal Leadership Practices are associated with higher Teacher Performance; and (3) supportive leadership, professional development, instructional autonomy, collaboration, and recognition represent important mechanisms through which principals foster teacher creativity and performance. The convergence of descriptive statistics, Pearson correlation, simple linear regression, and thematic analysis, therefore, provides both statistical evidence and contextual understanding of the role of principal leadership in elementary schools.

DISCUSSION

Principal Leadership Practices as an Organizational Driver of Teacher Creativity and Performance

The findings demonstrate that Principal Leadership Practices are strongly and positively associated with both Teacher Creativity and Teacher Performance. Principal Leadership Practices showed a strong positive correlation with Teacher Creativity ($r = .62, p < .001$) and an even stronger relationship with Teacher Performance ($r = .68, p < .001$). The regression results further substantiate these relationships. Principal Leadership Practices significantly predicted Teacher Creativity ($B = 0.67, \beta = .62, t = 5.59, p < .001$), accounting for 38.4% of its variance ($R^2 = .384$). More importantly, leadership practices explained 46.2% of the variance in Teacher Performance ($B = 0.64, \beta = .68, t = 6.56, p < .001; R^2 = .462$), representing the strongest predictive relationship identified in this study. These findings suggest that principal leadership should not be conceptualized merely as an administrative function; rather, it constitutes a critical organizational resource through which schools can strengthen teachers' professional capacity, instructional responsiveness, and performance.

The qualitative findings provide a contextual explanation for these statistical relationships. Five interconnected leadership practices emerged from the interviews with school principals: professional support and teacher development, encouragement of instructional innovation, collaborative decision-making, recognition and motivation, and the creation of a supportive school climate (Sudarti dkk, 2024). These practices illustrate the mechanisms through which school leaders can establish conditions conducive to both creativity and professional effectiveness. Professional development can strengthen teachers' pedagogical competence, while encouragement of instructional innovation can provide teachers with greater confidence and legitimacy to experiment with alternative teaching approaches. Similarly, participatory decision-making, recognition of professional contributions, and a psychologically supportive school climate may strengthen teachers' sense of professional agency, belonging, and commitment (Cabanducos & Tumapon, 2026). The convergence between the quantitative and qualitative findings, therefore, indicates that effective school leadership operates through both structural and relational mechanisms that enable teachers to develop and sustain high-quality professional practice.

Comparatively, the influence of principal leadership should also be understood in relation to the educational context in which leadership is practiced. Partin and Derrington (2023), for example, examined principal leadership in virtual high schools, demonstrating that leadership practices operate within organizational conditions that differ substantially from those in conventional elementary school environments. Similarly, Kayombo et al. (2025) investigated transformational leadership in primary schools in Tanzania, with particular attention to teacher engagement and pupils' academic performance. These different institutional, geographical, and educational contexts suggest that the outcomes associated with principal leadership may vary across school settings, leadership demands, and the professional conditions teachers experience. In contrast, the present study specifically demonstrates how principal leadership is associated with both teacher creativity and teacher performance in elementary schools. At the same time, qualitative evidence further identifies the organizational mechanisms through which these relationships may operate.

This interpretation is consistent with the broader leadership perspective presented in the study's

theoretical framework. Emphasize that contemporary school leadership extends beyond administrative supervision to include professional learning, instructional innovation, teacher participation in decision-making, recognition of professional achievement, motivation, and the development of a collegial organizational climate. From this perspective, principal leadership influences teacher outcomes by creating organizational conditions in which teachers experience professional support, autonomy, opportunities for development, and recognition (Sidiq & Saleh, 2025). The present findings extend this argument by providing empirical evidence that such leadership practices are not only associated with higher levels of teacher creativity but also account for a substantial proportion of the variation in teachers' professional performance. Thus, leadership effectiveness in elementary schools may be understood less in terms of hierarchical control and more in terms of the principal's capacity to construct an enabling professional environment in which teachers are supported, trusted, and encouraged to innovate.

Teacher Creativity as a Professional Resource for Enhancing Teacher Performance

The second major finding concerns the significant relationship between Teacher Creativity and Teacher Performance. Teacher Creativity was positively and significantly correlated with Teacher Performance ($r = .58, p < .001$), indicating that teachers with higher levels of instructional creativity tended to demonstrate stronger professional performance. The regression analysis further confirmed this relationship, showing that Teacher Creativity significantly predicted Teacher Performance ($B = 0.50, \beta = .58, t = 5.03, p < .001$) and explained 33.6% of the variance in performance ($R^2 = .336$). These findings provide empirical evidence that creativity represents an important professional capacity associated with teachers' effectiveness in carrying out their instructional responsibilities. More importantly, the findings position teacher creativity not merely as an optional pedagogical attribute but as a strategic professional resource that supports adaptive and effective teaching practices. Creative teachers are better positioned to generate contextually appropriate instructional ideas, modify conventional teaching strategies, adapt learning materials to diverse student needs, and design engaging classroom activities. They may also respond more effectively to unexpected instructional challenges by developing alternative solutions when routine approaches are insufficient. Accordingly, strengthening teachers' creative capacities may enhance their ability to respond flexibly to changing classroom conditions and contribute to sustained professional performance in elementary education.

The relationship between Teacher Creativity and Teacher Performance can be understood in terms of teachers' capacity to respond adaptively to increasingly complex classroom demands. Teaching creativity constitutes an important professional resource because it enables teachers to transform pedagogical knowledge, instructional competence, and available resources into more effective professional practices (Julianti & Mellita, 2023; Mariyana dkk., 2024; Zahru dkk., 2025). Creative teachers are generally better positioned to adjust instructional strategies to diverse student characteristics, redesign learning activities when established approaches are ineffective, and generate contextually appropriate solutions to emerging classroom challenges. In this sense, creativity should not be understood merely as the production of novel ideas, but as an adaptive professional capability that supports teachers in maintaining instructional quality under changing and uncertain educational conditions. Thus, enhancing teachers' creative capacities may contribute substantially to more responsive, flexible, and effective classroom practices.

This interpretation is also supported by research demonstrating that teacher creativity develops within organizational environments that provide opportunities for experimentation, professional learning, collaboration, and instructional autonomy (Amarta dkk., 2023; Indrawati dkk., 2025; Sin-ingan, 2025). Creativity and professional performance should therefore not be treated as isolated teacher characteristics, but as interrelated professional outcomes shaped by both individual capacities and organizational conditions. A supportive school environment can encourage teachers to explore innovative instructional approaches, while creative competence enables them to translate such opportunities into meaningful classroom practices. Consequently, strengthening Teacher Performance requires not only the development of technical and pedagogical competencies but also organizational conditions that facilitate creative professional behavior.

From this perspective, Teacher Creativity functions as an important professional mechanism through which teachers can deliver adaptive, innovative, and effective learning experiences.

Taken together, the findings suggest an integrated relationship among Principal Leadership Practices, Teacher Creativity, and Teacher Performance. Principal Leadership Practices function as an organizational foundation that creates supportive conditions through professional development, encouragement of instructional innovation, collaborative decision-making, recognition and motivation, and a supportive school climate. Within these conditions, teachers are better positioned to develop and express creativity by adapting instructional strategies, generating contextually appropriate ideas, and responding flexibly to classroom challenges. Teacher Creativity, in turn, is positively associated with Teacher Performance by enabling teachers to translate professional support and instructional autonomy into more adaptive and effective teaching practices. Thus, the three variables should not be viewed as isolated constructs but as interconnected professional and organizational resources: effective principal leadership supports the conditions for teacher creativity and performance. In contrast, teacher creativity represents an important professional capacity associated with stronger performance. This integrated pathway highlights how educational leadership, organizational support, and teachers' creative capacities collectively contribute to professional effectiveness in elementary schools.

CONCLUSION

The findings demonstrate that principal leadership is a prominent organizational factor associated with teacher creativity and professional performance. In contrast, teacher creativity is an important professional resource that helps teachers translate organizational support into adaptive and effective instructional practices. Rather than viewing leadership, creativity, and performance as separate constructs, the findings suggest that they operate as interconnected dimensions of school effectiveness. Effective principals can create enabling professional conditions by providing developmental support, encouraging instructional experimentation, involving teachers in collaborative decision-making, recognizing professional contributions, and maintaining a supportive school climate. In practical terms, principals should establish transparent teacher recognition schemes that acknowledge instructional innovation, collaborative contributions, and effective classroom problem-solving through certificates, peer recognition, professional development opportunities, or appropriate non-financial incentives. Schools should also provide regular collaborative spaces, such as brief weekly reflection meetings, peer-sharing forums, lesson-design discussions, and professional learning groups, where teachers can exchange ideas, reflect on instructional challenges, and jointly develop practical solutions.

These findings should be interpreted within the scope and limitations of the study. The quantitative component involved a relatively small group of elementary school teachers. At the same time, the qualitative evidence was derived from interviews with participating principals, which limited the generalizability of the findings across different school levels, geographical settings, and organizational contexts. Furthermore, the quantitative constructs relied on teachers' self-reported perceptions, and the use of correlation and simple linear regression identifies meaningful associations and predictive patterns but does not establish causal relationships among principal leadership, teacher creativity, and teacher performance. Future research should therefore involve larger and more diverse samples, incorporate additional evidence such as classroom observations and longitudinal data, and apply multivariate or mediation analysis. Such approaches could provide stronger evidence on whether teacher creativity serves as a mechanism by which principal leadership contributes to sustained teacher performance across different educational contexts.

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