

Learning Community and Teacher Performance: The Role of Principal Transformational Leadership and Academic Supervision

¹⁾Roihatul Jannah, ²⁾Supandi, ³⁾Harjito

^{1,2,3)} Master of Education, Postgraduate Faculty, PGRI Semarang University, Semarang, Indonesia

*Corresponding Author: jannahroihatul04@gmail.com

Article Information

Keywords:

Professional Collaboration;
Teacher Professionalism;
School Leadership;
Teacher Development;
Learning Quality

ABSTRACT

Transformation in educational management requires attention to teacher performance through school leadership, professional collaboration, and academic supervision. This study examines the relationships between transformational leadership, learning community, academic supervision, and teacher performance in public junior high schools in Bumiayu District, Brebes Regency. A quantitative approach with an ex post facto associative design was employed. The population comprised 132 teachers from four public junior high schools, with 102 returned questionnaires used for analysis. Data were collected using Likert-scale instruments, with item quality assessed through Corrected Item-Total Correlation and internal consistency through Cronbach's Alpha. Data were analyzed using prerequisite tests, simple and multiple linear regression, t-tests, and F-tests. The results showed a significant relationship between transformational leadership and teacher performance, with a contribution of 20.3%, while academic supervision contributed 27.3% in the respective simple regression models. Learning community showed the strongest observed relationship with teacher performance ($r = 0.851$; $R^2 = 72.4\%$) and remained significant in the multiple regression model. Collectively, the three variables explained 72.5% of the variance in teacher performance. Given the cross-sectional design, the findings should be interpreted as statistical associations rather than causal relationships.

Article Information

Keywords:

Kolaborasi Profesional;
Profesionalisme Guru;
Kepemimpinan Sekolah;
Pembinaan Guru;
Mutu Pembelajaran

ABSTRAK

Transformasi manajemen pendidikan memerlukan perhatian terhadap kinerja guru melalui kepemimpinan sekolah, kolaborasi profesional, dan supervisi akademik. Penelitian ini menganalisis hubungan antara kepemimpinan transformasional, komunitas belajar, supervisi akademik, dan kinerja guru pada SMP Negeri di Kecamatan Bumiayu, Kabupaten Brebes. Penelitian menggunakan pendekatan kuantitatif dengan desain ex post facto asosiatif. Populasi penelitian terdiri atas 132 guru dari empat SMP Negeri, dengan 102 kuesioner yang dikembalikan dan digunakan dalam analisis. Data dikumpulkan menggunakan instrumen skala Likert, dengan kualitas butir diuji melalui Corrected Item-Total Correlation dan konsistensi internal melalui Cronbach's Alpha. Data dianalisis menggunakan uji prasyarat, regresi linear sederhana dan berganda, uji t, serta uji F. Hasil menunjukkan bahwa kepemimpinan transformasional berhubungan signifikan dengan kinerja guru dengan kontribusi 20,3%, sedangkan supervisi akademik berkontribusi 27,3% pada masing-masing model regresi sederhana. Komunitas belajar menunjukkan hubungan yang paling kuat dengan kinerja guru ($r = 0,851$; $R^2 = 72,4\%$) dan tetap signifikan dalam regresi berganda. Ketiga variabel secara bersama-sama menjelaskan 72,5% variasi kinerja guru. Karena desain penelitian bersifat cross-sectional, temuan diinterpretasikan sebagai hubungan statistik, bukan hubungan kausal.

Article History

Received : 15/08/2026

Revised : 10/09/2026

Accepted : 21/10/2026

✉Corresponding Author: (1) Roihatul Jannah, (2) Department of Masters Education, (3) PGRI Semarang University, (4) Jl. Lontar No. 24, Karangtempel, Semarang Timur District, Semarang City, Central Java 50232, Indonesia, (5) Email: jannahroihatul04@gmail.com

1. Introduction

Improving the quality of education is closely associated with teacher performance, as teachers are primary actors in the learning process. Teacher performance is related not only to individual competencies but also to the school's organizational environment, which supports professional development, collaboration, reflection, and continuous improvement of teaching practices. In this context, the principal holds a strategic position through leadership that provides direction, builds motivation, encourages innovation, and empowers teachers. Research shows that school leadership is linked to teaching practices and teacher professional development.(Abuhassira et al., 2024; Yolviansyah et al., 2024)Transformational leadership specifically emphasizes idealized influence, inspirational motivation, intellectual stimulation, and individual attention to create a work environment that encourages teachers to grow and collaborate.(Al-Amin Mydin et al., 2024; Albuni et al., 2022; Bellibaş et al., 2021)In addition to leadership, professional development through learning communities and academic supervision is a crucial part of building teacher capacity. Therefore, teacher performance is not only related to personal abilities, but also to leadership support and the professional learning mechanisms available within the school.

A professional learning community (PLC) is a professional development approach that places teachers in a collaborative learning process through the sharing of experiences, best practices, reflection, problem-solving, and shared responsibility for improving the quality of teaching. PLCs provide teachers with opportunities to build professional knowledge through interactions with colleagues rather than working individually.Meesuk et al. (2021)explains that PLCs can be an environment for continuous professional development for teachers, whereasHuijboom et al. (2021)Studies show that PLC development is influenced by collaboration, reflection, feedback, and supportive school conditions. The relationship between PLCs and teacher performance has also received empirical support.Al-Amin Mydin et al. (2024)found a positive relationship between various dimensions of PLC and teacher performance, while researchChristensen & Jerrim (2025)shows that the relationship between PLC and teacher learning outcomes can vary depending on the educational context. In Indonesia, researchHartinah et al. (2020)shows that the learning community plays a role in developing teacher competencies, whileSyafriani et al. (2026)Emphasizes that developing Teacher Working Groups as learning communities can be a strategy for improving teacher performance. These findings suggest that learning communities are an important context associated with teacher professional development, although their observed relationships may vary depending on how they are developed and supported within the school environment, but their effectiveness is greatly influenced by how they are developed and supported within the school environment.

A principal's transformational leadership is closely linked to creating a collaborative environment and teacher professional learning. Principals who practice transformational leadership not only guide teachers toward

achieving organizational goals but also build a shared vision, provide motivation, encourage new thinking, and address individual development needs.Lei et al. (2024) reported a positive relationship between transformational leadership and the development of PLC (Professional Learning Community), including organizational learning, shared responsibility, reflective dialogue, and shared professional practice.Voelkel (2022)also found a relationship between transformational leadership, PLC, and teacher collective efficacy. In Indonesia,Roesminingsih & Windasari (2025)This study demonstrates a relationship between transformational leadership, PLCs (Professional Learning Communities), and teacher performance. Transformational leadership was also found to have a direct positive relationship with teacher performance.(Syafriani et al., 2026; Vanblaere & Devos, 2016)Another factor related to teacher performance is academic supervision. Academic supervision, implemented through planning, observation, feedback, reflection, and follow-up, can help teachers improve their teaching practices.Rawati et al. (2022) shows that the principal's academic supervision can be used as an instrument to improve teacher performance, whileWardani et al. (2022) It was found that there was a positive and significant influence of academic supervision on teacher performance.Yolviansyah et al. (2024) This further strengthens the fact that academic supervision is one of the relevant organizational factors in improving teacher performance.

Although numerous studies have demonstrated the importance of transformational leadership, learning communities, and academic supervision, there are still research gaps that need to be addressed. Previous research has tended to examine each variable separately, combine several variables, or use learning communities as a mechanism within a specific structural relationship. For example, research on PLCs has largely focused on teacher professional development and competency.(Hartina & Supriyoko, 2025; Hartinah et al., 2020; Huijboom et al., 2021)while other studies focus on the relationship between transformational leadership and PLC.(Lei et al., 2024; Leithwood et al., 2023)or the relationship between academic supervision and teacher performance (Christensen & Jerrim, 2025; Dogan & Adams, 2018). Study Marinda & Prasajo (2025) This study has integrated academic supervision and PLC activities in explaining teacher performance, but the context is a public high school in Indragiri Hilir Regency. Meanwhile, this studyRoesminingsih & Windasari (2025)Integrating transformational leadership, PLCs, and teacher performance in Indonesia, but using a model that positions PLCs as a mediator. Based on the literature search conducted, no research has been found that specifically compares the strength of the relationship and the relative contribution of principal transformational leadership, learning communities, and academic supervision to teacher performance in a single model in public junior high schools in Bumiayu District, Brebes Regency. This gap is important because the existence of a program or policy cannot explain which factors make the strongest contribution to teacher performance when several organizational factors are examined simultaneously.

This research gap is relevant to the empirical conditions of public junior high schools in Bumiayu District, Brebes Regency. Research data shows that all public junior high schools in the region have formed learning communities, although the frequency of implementation varies. Public Junior High School 1 Bumiayu has the EDUMASTERY community, Public Junior High School 2 has SPENDABUM, Public Junior High School 3 has LENTERA, and Public Junior High School 4 has SATURDAY FUN ESEMKALBU. Most communities hold weekly meetings, while Public Junior High School 3 holds meetings less frequently. On the other hand, the implementation of academic supervision in 2025 is relatively high, namely 95% in Public Junior High School 1, 100% in Public Junior High School 2, 85% in Public Junior High School 3, and 100% in Public Junior High School 4. However, the average achievement of learning quality in Public Junior High Schools in Bumiayu Regency in the Education Report is still at 65.43%, which indicates that the quality of learning is not optimal and is uneven. This situation highlights a problem that requires further research: high levels of supervision and the presence of a learning community do not always explain optimal teacher performance. Therefore, research is needed to determine whether transformational leadership, a learning community, and academic supervision are truly related to teacher performance and which factors have the strongest contribution. In this context, research on the relative position of these three factors can provide empirical information for understanding and developing school management.

Although previous studies have examined transformational leadership, professional learning communities, and academic supervision in relation to teacher learning outcomes, less attention has been paid to their relative explanatory power when examined simultaneously within the same model. Marinda & Prasajo (2025) For example, examining academic supervision, teacher professional learning community activities, and professional competencies in relation to teacher performance, while Roesminingsih & Windasari (2025) This study examines transformational leadership in relation to teacher performance through the context of professional learning communities. These studies provide important evidence regarding the relationships between variables, but they do not directly address which organizational factors demonstrate the strongest statistical associations with teacher performance when transformational leadership, learning communities, and academic supervision are considered together. Therefore, the novelty of this study lies not only in its geographic setting but in its comparative analytical focus: examining the relative strength of these three factors in an integrated statistical model. This approach provides an empirical basis for understanding whether teacher performance is more strongly associated with leadership, supervision, or collaborative professional learning environments. The finding that learning communities demonstrate the strongest statistical associations offers theoretical implications that teacher performance may be closely related to the collaborative and collegial dimensions of professional learning. The finding that learning communities demonstrate the strongest

statistical associations also suggests that the collaborative and collegial dimensions of professional learning deserve further attention in explaining variation in teacher performance. This finding does not negate the role of transformational leadership or academic supervision, but rather suggests differences in the strength of the relationships between these three factors in the models analyzed.

Based on the description, this study aims to analyze the relationship between the principal's transformational leadership, learning community, and academic supervision with the performance of junior high school teachers in Bumiayu District, Brebes Regency, both partially and simultaneously, and to compare the strength of the relationship and the relative contribution of these three variables in a statistical model. The novelty of this study lies in the integrated testing of these three factors in one quantitative model by comparing the strength of their relative relationship with teacher performance in the context of public junior high schools in Bumiayu District. This focus complements previous studies that tested part of the relationship or placed the learning community within a specific structural mechanism. The results showed that the learning community had the strongest relationship with teacher performance in a simple regression analysis ($r = 0.851$; $R^2 = 0.724$) and still showed a significant partial relationship in multiple regression ($B = 0.822$; $t = 12.715$; $p < 0.001$). These findings provide a theoretical contribution by positioning a collaborative professional learning environment as an important aspect in understanding variations in teacher performance, although the findings are not intended as evidence of a causal relationship.

2. Research methods

2.1. Types and Design of Research

This study employed a quantitative approach with an ex post facto associative design. This design was used because it did not manipulate or manipulate the variables under study, but rather examined the relationships and contributions of variables based on naturally occurring conditions. (Li & Liu, 2022) This study aims to analyze the relationship between the principal's transformational leadership, learning community, and academic supervision as independent variables and teacher performance as the dependent variable. A correlational design was used to determine the direction and magnitude of the relationship between the variables and the contribution of each variable to teacher performance.

The research variables consist of the principal's transformational leadership (X1), learning community (X2), academic supervision (X3), and teacher performance (Y). Teacher performance in this study is theoretically conceptualized as the extent to which teachers carry out their professional responsibilities in the learning process. This construct is operationalized through three dimensions: learning planning, learning implementation, and learning evaluation. Learning planning refers to the teacher's ability to prepare learning objectives, learning materials, learning activities, and assessment plans. Learning implementation refers to the teacher's ability to carry out learning activities, manage classroom interactions, use appropriate learning

methods and media, and facilitate student learning. Learning evaluation refers to the teacher's ability to conduct assessments, provide feedback, and follow up on assessment results to improve subsequent learning activities.

Transformational leadership is measured through the dimensions of idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration. Learning communities encompass shared values and vision, community engagement, and the sharing of best practices. Academic supervision encompasses planning, implementation, and evaluation/follow-up of supervision.

2.2. Time, Place, and Subject/Population – Research Sample

This research was conducted at a public junior high school in Bumiayu District, Brebes Regency, with the research stages taking place from May to October 2026. These stages included instrument trials, research data collection, data processing and analysis, and preparation of research reports.

The research population consisted of all teachers in four public junior high schools in Bumiayu Regency, namely 45 teachers in Bumiayu 1 Public Junior High School, 50 teachers in Bumiayu 2 Public Junior High School, 25 teachers in Bumiayu 3 Public Junior High School, and 12 teachers in Bumiayu 4 Public Junior High School, so that the total population was 132 teachers. Because all members of the population could be reached, this study used a saturated sampling method (census), so that all 132 teachers were determined as the research sample.

2.3. Data Collection Instruments and Techniques

Research data was collected using a Likert-scale questionnaire structured based on operational indicators for each research variable. The research instrument consisted of four variables: transformational leadership, learning community, academic supervision, and teacher performance. Each instrument contained 42 items for transformational leadership, 27 for learning community, 30 for academic supervision, and 28 for teacher performance.

Teacher performance in this study is operationalized as the implementation of teachers' professional responsibilities in the learning process, which includes three dimensions: learning planning, learning implementation, and learning evaluation. Learning planning refers to teachers' ability to analyze the context and develop learning plans, prepare materials or modules, select learning media, and develop assessment instruments. Learning implementation includes teachers' ability to provide equal learning opportunities, build interactions with students, use a variety of activities and teaching techniques, implement opening and closing procedures, and reflect on and prepare for the next lesson. Learning evaluation includes setting achievement targets, assessing student progress, conducting daily assessments, providing follow-up and feedback, evaluating learning practices and outcomes, and providing assistance to less active students.

The teacher performance instrument consists of 28 items distributed across three dimensions. The learning planning dimension consists of 12 items (items 1–12), the learning implementation dimension consists of 8 items (items 13–

20), and the learning evaluation dimension consists of 8 items (items 21–28). Thus, all dimensions of teacher performance are measured using a total of 28 items. The distribution of dimensions, indicators, item numbers, and examples of instrument items are presented in Table 1.

Table 1. Operationalization of Teacher Performance Instruments

Dimensions	Indicator	Item Number	Amount	Sample Items
Learning Planning	Context analysis and preparation of learning plans; preparation of learning materials and modules; selection of learning media; preparation of assessment instruments	1–12	12	"I create a teaching plan that will be implemented as effectively as possible so that the learning material can be conveyed."
Implementation of Learning	Equal learning opportunities; teacher-student interaction; variety of learning activities; use of teaching techniques; opening and closing of classes; reflection and preparation for the next lesson	13–20	8	"I try to create good interactions with students."
Learning Evaluation	Determining learning achievement targets; assessing student progress; daily assessment; follow-up; evaluating teaching practices; evaluating learning outcomes; providing feedback; helping less active students	21–28	8	"I assess students' learning progress and compare it with applicable curriculum requirements."
Total		1–28	28	

The teacher performance instrument was developed based on the theoretical framework and operational indicators of teacher performance used in the research. Item

development was carried out by adapting the teacher performance indicators to the context of public junior high school teachers in Bumiayu District.

In addition to the teacher performance instrument, transformational leadership was measured through the dimensions of idealized influence, inspirational motivation, intellectual stimulation, and individualized consideration with 42 items. Learning community was measured through shared values and vision, community engagement, and sharing of best practices with 27 items. Academic supervision was measured through the dimensions of planning, implementation, and evaluation and follow-up of supervision with 30 items. The development of the research instrument was based on a theoretical framework and operational indicators relevant to the research context. (Maisyaroh, 2021).

The distribution of items across dimensions was determined according to the operational indicators specified for each construct. Transformational leadership consisted of 42 items distributed across four dimensions, learning community consisted of 27 items distributed across three dimensions, academic supervision consisted of 30 items distributed across three dimensions, and teacher performance consisted of 28 items distributed across three dimensions. Table 2 presents the distribution of items, the number of items representing each dimension, and representative examples of the instrument items.

Table 2. Distribution of Research Instrument Items Across Dimensions

Variable	Dimension	Item Number	Number of Items	Example Item
Transformational Leadership (X1)	Idealized Influence	1-12	12	"The principal is respected because of his/her competence."
	Inspirational Motivation	13-20	8	"The principal develops the school's vision."
	Intellectual Stimulation	21-28	8	"The principal is able to provide new ideas for school development."
	Individualized Consideration	29-42	14	"The principal provides opportunities for teachers to

Learning Community (X2)				participate in relevant training."
	Total X1	1-42	42	
	Shared Values and Vision	1-9	9	"I understand the priorities agreed upon in the learning community."
	Community Engagement	10-18	9	"I collaborate actively with other teachers in designing learning."
Academic Supervision (X3)	Sharing of Best Practices	19-27	9	"I conduct learning observations with colleagues."
	Total X2	1-27	27	
	Supervision Planning	1-12	12	"The principal prepares an academic supervision program at the beginning of the school year."
	Supervision Implementation	13-21	9	"The principal conducts direct observation."
Teacher Performance (Y)	Evaluation and Follow-up	22-30	9	"The principal provides solutions according to the problems encountered."
	Total X3	1-30	30	
	Learning Planning	1-12	12	"I prepare teaching plans to be

				impleme nted as effectivel y as possible. "
Learning Implemen tation	13- 20	8		"I try to create good interacti ons with students. "
Learning Evaluatio n	21- 28	8		"I assess students' learning progress and compare it with curriculu m requirem ents."
Total Y	1-28	28		

Prior to use in the main study, all instruments underwent item quality and reliability testing. Item quality was evaluated using Corrected Item-Total Correlation, while internal consistency was evaluated using Cronbach's Alpha. Instrument development was based on the theoretical framework and operational indicators established for each construct. Instrument development was based on the theoretical framework and operational indicators established for each construct. Formal expert judgment was not conducted as a separate instrument-validation procedure in this study. Therefore, Corrected Item-Total Correlation testing was used to assess the relationship between each item and the total construct score, while Cronbach's Alpha was used to assess the instrument's internal consistency.

This study did not conduct Exploratory Factor Analysis (EFA) or Confirmatory Factor Analysis (CFA) as full construct-validation procedures. The construct development was based on the theoretical foundations and operational indicators established for each construct, while the primary empirical instrument testing focused on item quality and internal consistency. The appendices also report Principal Component Analysis (PCA) results at the dimensional level. These PCA results are presented as supplementary evidence regarding the dimensional structure of the instruments and are not interpreted as CFA or as definitive confirmation of the measurement model. Therefore, the multidimensional factor structure has not been fully empirically confirmed through EFA or CFA, which represents a limitation that should be considered when interpreting the findings.

2.4. Data Analysis Techniques

Data analysis was conducted in stages using IBM SPSS Statistics. The first stage was data examination and filtering, followed by prerequisite analysis tests before hypothesis testing.(Dormann et al., 2013)The analysis of the relationship and contribution of each independent variable

to teacher performance was conducted using simple linear regression, while the relationship between the three variables together and teacher performance was analyzed using multiple linear regression. Testing the significance of partial relationships was conducted using the t-test, while testing the significance of the simultaneous model was conducted using the F-test at a significance level of 5% ($\alpha = 0.05$).(Fabrigar et al., 1999; MacCallum et al., 1999). The magnitude of the variable's contribution to teacher performance is determined based on the R Square (R^2) value.

To compare the strength of the relationship and the relative contribution of each variable, this study compared the results of simple regression and considered the significance and regression coefficients in the multiple regression model. Based on the analysis results, the learning community showed the strongest relationship with teacher performance in the simple regression analysis ($r = 0.851$; $R^2 = 0.724$) and still showed a significant relationship in the multiple regression model ($t = 12.715$; $p < 0.001$), while transformational leadership and academic supervision did not show a significant partial relationship after the three variables were analyzed together.

2.5. Ethical Aspects in Research

This study involved teachers as respondents and was conducted after obtaining research permission from the relevant parties and the school where the study took place. Respondents were provided with information regarding the purpose of the data collection, and completion of the instrument was voluntary. Respondent data was used solely for research purposes and is reported in aggregate form.

The direction of the relationships in the model is determined based on the research's theoretical framework, which positions transformational leadership, learning communities, and academic supervision as variables conceptually related to teacher performance. However, because the study used an ex post facto design with data collected over a single observation period, the direction of the relationships cannot be interpreted as causal evidence. The relationships found may be influenced by other factors not included in the model, as well as the possibility of reciprocal relationships between the variables.

3. Results

3.1 Instrument Test Results

Prior to analysis, item quality and internal consistency of the four research instruments were evaluated. Item quality was assessed using Corrected Item-Total Correlation, while internal consistency was assessed using Cronbach's Alpha. Testing was conducted on the transformational leadership, learning community, academic supervision, and teacher performance instruments.

Table 3. Results of Item Quality and Instrument Reliability Testing

Variables	Numb er of Grains	Legitima te Goods	Cronbac h's alpha	Informati on
Teacher Performance	28	28	0.992	Valid and reliable

Transformational Leadership	42	42	0.996	Valid and reliable
Learning Community	27	27	0.989	Valid and reliable
Academic Supervision	30	30	0.995	Valid and reliable

Source: Primary data, processed with SPSS (2026).

The test results showed that all items in the four instruments met the item quality criteria established in the study, while the Cronbach's Alpha coefficients indicated very high internal consistency. Teacher performance had a Cronbach's Alpha value of 0.992, transformational leadership 0.996, learning community 0.989, and academic supervision 0.995.

Although all four instruments demonstrated very high internal consistency, the magnitude of the Cronbach's Alpha coefficients should be interpreted cautiously. Extremely high alpha values may partly reflect substantial similarity or redundancy among items, particularly when several items assess closely related aspects of the same construct. Therefore, the high reliability coefficients should not be interpreted as evidence of unidimensionality or construct validity. In this study, Cronbach's Alpha is interpreted specifically as evidence of internal consistency, while the underlying dimensional structure requires further psychometric examination.

The instrument testing reported in this section focuses on item quality and internal consistency and should not be interpreted as definitive confirmation of the instrument's factor structure. EFA and CFA were not conducted as full construct-validation procedures in this study. The appendices report Principal Component Analysis (PCA) results at the dimensional level as supplementary evidence regarding the dimensional structure of the instruments; however, these results are not interpreted as CFA or as definitive confirmation of the measurement model. Therefore, the reported evidence should be understood as evidence of item quality and internal consistency, while comprehensive confirmation of the multidimensional factor structure requires further psychometric testing.

3.2 The Relationship between Transformational Leadership and Teacher Performance

The first analysis was conducted to test the relationship between the principal's transformational leadership and teacher performance using simple linear regression.

Table 4. Simple Regression Results of Transformational Leadership on Teacher Performance

Statistics	Sign
R	0.451
R Square	0.203
F	25,784
Meaning	0.000
Contribution	20.3%

Source: Primary data, processed with SPSS (2026).

Table 3 shows an R value of 0.451 and an R Square of 0.203. The F value is 25.784 with a significance level of 0.000, so the relationship between transformational leadership and teacher performance is significant at the 5% level. The R² value of 0.203 indicates that the simple

regression model explains 20.3% of the variation in teacher performance scores related to transformational leadership in the model.

3.3 The Relationship between Learning Communities and Teacher Performance

The second analysis was conducted to test the relationship between learning communities and teacher performance using simple linear regression.

Table 5. Simple Regression Results of Learning Community on Teacher Performance

Statistics	Sign
R	0.851
R Square	0.724
F	264,314
Meaning	0.000
Contribution	72.4%

Source: Primary data, processed with SPSS (2026).

Table 4 shows an R value of 0.851 and an R² of 0.724. The F value of 264.314 with a significance level of 0.000 indicates that the relationship in the simple regression model is significant at the 5% level. The R² value of 0.724 indicates that the simple regression model explains 72.4% of the variation in teacher performance scores.

3.4 The Relationship between Academic Supervision and Teacher Performance

The third analysis was conducted to test the relationship between academic supervision and teacher performance using simple linear regression.

Table 6. Simple Regression Results of Academic Supervision on Teacher Performance

Statistics	Sign
R	0.522
R Square	0.273
F	37,919
Meaning	0.000
Contribution	27.3%

Source: Primary data, processed with SPSS (2026).

Table 5 shows an R value of 0.522 and an R² of 0.273. The F value of 37.919 with a significance level of 0.000 indicates that the relationship in the simple regression model is significant at the 5% level. The R² value of 0.273 indicates that the simple regression model explains 27.3% of the variation in teacher performance scores.

3.5 Multiple Linear Regression Results

Further analysis was conducted to test the relationship between transformational leadership, learning community, and academic supervision simultaneously with teacher performance using multiple linear regression.

Table 7. Multiple Linear Regression Results

Variables	Coefficient B	T	Meaning
Constant	27,200	—	—
Transformational Leadership	-0.027	-0.562	0.576
Learning Community	0.822	12,715	0.000
Academic Supervision	0.043	0.583	0.561

Source: Primary data, processed with SPSS (2026).

Based on Table 6, the learning community has a regression coefficient of 0.822, significant at the 5% level. In contrast, transformational leadership has a coefficient of -0.027 with a significance of 0.576, while academic supervision has a coefficient of 0.043 with a significance of 0.561. Thus, in the multiple regression model, only the learning community shows a significant partial relationship with teacher performance.

Table 8. Simultaneous Test Results of Regression Model

Statistics	Sign
R	0.851
R Square	0.725
Adjusted R Squared	0.716
F	86,818
Meaning	0.000

Source: Primary data, processed with SPSS (2026).

Table 8 shows that the simultaneous regression model is significant with an F value of 86.818; $p < 0.001$. The R Square value of 0.725 indicates that the model consisting of transformational leadership, learning community, and academic supervision explains 72.5% of the variation in teacher performance, while the remaining 27.5% is outside the variables analyzed in this study.

4. Discussion

4.1 Transformational Leadership and Teacher Performance

The results of the study showed that transformational leadership was significantly related to teacher performance when tested individually, contributing 20.3%. This finding suggests that leadership characteristics such as providing vision, motivation, intellectual stimulation, and individual attention are related to teachers' ability to carry out their professional duties. This finding can be explained by the mechanisms of transformational leadership, which build intrinsic motivation and a shared orientation toward school goals. Kang (2021) This study shows that principals' transformational leadership can foster cooperative teacher professional development. Thus, transformational leadership is not only related to the relationship between individual principals and teachers but can also create organizational conditions that encourage teachers to engage in collaborative professional activities.

This result also has similarities with Keung et al. (2020) This suggests that leadership practices and professional learning communities are related to teacher professional development. (To et al., 2023; Yin et al., 2019) Previous research has found that principal leadership practices and professional learning communities are associated with teacher commitment. The differences in context between these studies and this study suggest that the relationship between leadership and teacher performance may arise through the characteristics of the professional environment established in schools. However, multiple regression results indicate that transformational leadership is no longer significant after the inclusion of learning communities and academic supervision. This should be understood as the absence of a significant unique contribution to the model, not as evidence that transformational leadership is unimportant. The correlation between transformational leadership and academic

supervision in this study reached $r = 0.815$, indicating that the two variables have relatively close information in explaining teacher performance.

4.2 Predictor Learning Community and Teacher Performance

Learning community showed the strongest observed statistical association with teacher performance in this study. The correlation value of 0.851 and an R-square of 0.724 indicated a strong statistical relationship in the simple regression analysis. Learning community also remained statistically significant in the multiple regression analysis, with a coefficient of 0.822 and a t-value of 12.715. This finding can be explained by the learning community's function as a professional learning space that allows teachers to exchange experiences, reflect on themselves, solve problems, and develop learning practices collaboratively. Yin et al. (2019) This suggests that professional learning communities are linked to teachers' professional learning processes through an environment of trust and collegial interaction. (Sari, 2025; Sugianto, 2024) shows that the characteristics of professional learning communities are related to teachers' professional learning outcomes.

The findings of this study are also in line with Nurrizayani et al. (2024) This suggests that professional learning communities can be beneficial for both teachers and students, although it also emphasizes the importance of caution in PLC research design. This is relevant to this study because a strong relationship between learning communities and teacher performance does not automatically imply that all variation in teacher performance is due to the learning community. Differences in the strength of the PLC relationship across studies also demonstrate the importance of context. Widiyanti et al. (2026) It was found that the relationship between professional learning communities and various teacher learning outcomes does not always have the same strength in different educational contexts. Meanwhile, Yang & Chang, (2024) The research results show that PLC development is significantly influenced by supporting conditions, time, space, facilitation, and the level of collective autonomy. Therefore, the observed association between learning communities and teacher performance may be related to the extent to which learning communities are integrated into teachers' daily professional activities. This interpretation should be understood as a contextual explanation rather than evidence of a causal mechanism.

The assumed direction of the relationship between learning communities and teacher performance is primarily based on the theoretical and organizational logic of professional learning. Learning communities provide teachers with opportunities to exchange experiences, reflect on teaching practices, receive feedback, solve teaching problems, and collaboratively develop learning strategies. These activities represent mechanisms through which professional learning environments can be linked to subsequent improvements in teachers' professional practice. Therefore, this direction is theoretically plausible because learning community activities are conceptually structured as a professional development process that

supports teacher learning and practice. However, the current cross-sectional study design did not establish temporal precedence. An alternative explanation is that higher-performing teachers are more likely to actively participate in learning communities, while reciprocal reinforcement between participation and performance may also occur. Consequently, the direction of the relationship should be considered a theoretically based assumption, not a causal inference supported by the current data.

4.3 Academic Supervision and Teacher Performance

Academic supervision has a significant relationship with teacher performance when tested individually, contributing 27.3%. These results indicate that the better the implementation of academic supervision, the higher the teacher performance scores identified in this study. This mechanism can be explained through the function of supervision as a process of providing feedback on learning practices. Supervision, which includes planning, observation, evaluation, and follow-up, provides teachers with the opportunity to obtain information regarding strengths and areas for improvement in learning implementation.

These results can be compared with the research of Rawati et al. (2022), which showed that principals' academic supervision is implemented through planning, implementation, and feedback to support teacher performance improvement. The difference is that Rawati et al.'s research used a qualitative approach, while this study used a quantitative approach, resulting in a statistical contribution measure. The research of Yuliani et al. (2023) also found a contribution of academic supervision to teacher performance when analyzed together with transformational leadership, work climate, and organizational culture. These results indicate that academic supervision is part of the broader organizational environment in developing teacher performance. However, this study found that academic supervision was no longer partially significant in the multiple regression ($t = 0.583$; $p = 0.561$). This suggests that the contribution of academic supervision in the simple analysis is not entirely unique after other predictors are accounted for. The high correlation between academic supervision and transformational leadership also needs to be considered in interpreting these results.

4.4 The Simultaneous Relationship of Transformational Leadership, Learning Communities, and Academic Supervision with Teacher Performance

Together, transformational leadership, learning community, and academic supervision produced a significant model with $R^2 = 0.725$ and Adjusted $R^2 = 0.716$. This means that the three variables together are associated with most of the variation in teacher performance in the research context. These results indicate that teacher performance does not stand alone as a result of individual characteristics, but rather is part of an organizational environment involving leadership, professional learning, and supervision. However, the multiple regression results indicate that the learning community is the only variable showing a significant unique association with teacher performance in the multiple regression model.

This finding is interesting when compared with (Roesminingsih & Windasari, 2025). The study found that transformational leadership was related to engagement in professional learning communities and that PLCs (Professional Learning Communities) were related to teacher performance. However, that study used a mediation model, while this study employed simple and multiple regression. Therefore, this study cannot conclude that learning communities mediate the relationship between transformational leadership and teacher performance. The differences in results may also be influenced by sample characteristics and educational level. (Doğan & Adams, 2018; Hartinah et al., 2020) For example, a study of public elementary school teachers found a positive relationship between PLC (Professional Learning Community) dimensions and teacher performance. This study focused on public junior high school teachers in a single sub-district, thus providing more contextual evidence regarding the position of learning communities in public junior high schools.

4.5 Research Limitations

This study has several limitations. First, the ex post facto design does not allow researchers to administer treatments or control the study conditions as in experimental research. Therefore, the results are better understood as statistical relationships and contributions rather than absolute causal evidence. Second, all variables were measured using questionnaires, so the data depend on respondents' perceptions. Third, the study's scope was limited to public junior high schools in Bumiayu Regency, so generalizations to private schools, other levels of education, or different regions require caution.

Fourth, there is a relatively high correlation between transformational leadership and academic supervision ($r = 0.815$). This condition requires caution when interpreting the multiple regression coefficients. Fifth, this study did not test mediation mechanisms. Therefore, although learning communities are the strongest predictor, this study cannot yet prove whether learning communities are the pathway that explains the relationship between leadership or supervision and teacher performance.

4.6 Theoretical and Practical Implications

Theoretically, this study reinforces the perspective that teacher performance development needs to be placed within the context of a school's professional learning ecosystem. The finding that learning communities show the most consistent statistical association with teacher performance highlights the relevance of collegial interactions, shared practice, reflection, and collaborative learning in teacher professional development. Practically, principals can prioritize strengthening learning communities by providing time, space, facilitation, and support for collaborative teacher activities. These activities can include sharing best practices, learning reflection, peer observation, problem-solving discussions, and collaborative development of learning tools.

Transformational leadership and academic supervision should still be maintained, but research findings indicate that neither has a significant unique contribution in the

multiple regression model. Therefore, practical recommendations should not be to assert that transformational leadership or academic supervision "causes" teacher performance improvement. A more consistent position, based on the data, is that both are part of the organizational environment that needs to be managed in an integrated manner with the learning community.

A further limitation relates to the cross-sectional nature of the study design. Data were collected at a single point in time, so the findings demonstrate statistical associations between learning communities, transformational leadership, academic supervision, and teacher performance, rather than establishing causal effects. Therefore, a significant relationship between learning communities and teacher performance should not be interpreted as definitive evidence that participation in learning communities leads to higher teacher performance. Reverse causality is also possible, where teachers with higher levels of performance may be more actively involved in learning communities or may contribute more strongly to collaborative professional activities. A reciprocal relationship is also plausible, where participation in learning communities and teacher performance reinforce each other over time. Although the theoretical framework assumes that professional learning environments can support teacher development, the current design cannot empirically determine the temporal direction of this relationship. Therefore, future studies should use longitudinal, panel, or quasi-experimental designs to examine temporal sequences and provide stronger evidence regarding causal mechanisms.

5. Conclusion

Based on the research findings, the principal's transformational leadership, learning community, and academic supervision were significantly related to teacher performance, both individually and collectively. Transformational leadership and academic supervision demonstrated positive relationships with teacher performance, while learning community demonstrated the strongest observed relationship and remained statistically significant when all three variables were examined simultaneously. Therefore, learning community showed the strongest observed statistical association with teacher performance in this research model and context. However, because this study used a cross-sectional design, these findings should be interpreted as associative rather than causal. The results do not prove that strengthening learning community always leads to improved teacher performance, nor do they rule out a reciprocal or inverse relationship between learning community participation and teacher performance.

Reference

1. Abuhassira, H. Y., Razak, A. Z. A., & Hoque, K. E. (2024). The impact of transformational leadership on classroom interaction in UAE secondary schools. *Education and Information Technologies*, 29, 22757–22778. <https://doi.org/10.1007/s10639-024-12701-3>
2. Al-Amin Mydin, A., Xia, Y., & Long, Y. (2024). Professional learning communities and their impact on teacher performance: Empirical evidence from public primary schools in Guiyang. *Teaching and Teacher Education*, 148, 104715. <https://doi.org/10.1016/j.tate.2024.104715>
3. Albuni, H., Aslamiah, A. M. R., & Rizalie, A. M. (2022). The effect of transformational leadership of the principal, work motivation and work discipline on teacher performance. *International Journal of Social Science and Human Research*, 5(6), 2370–2375. <https://doi.org/10.47191/ijsshr/v5-i6-62>
4. Bellibaş, M. Ş., Gümüş, S., & Liu, Y. (2021). Does school leadership matter for teachers' classroom practice? The influence of instructional leadership and distributed leadership on instructional quality. *School Effectiveness and School Improvement*, 32(3), 387–412. <https://doi.org/10.1080/09243453.2020.1858119>
5. Christensen, A. A., & Jerrim, J. (2025). Professional learning communities and teacher outcomes: A cross-national analysis. *Teaching and Teacher Education*, 156, 104920. <https://doi.org/10.1016/j.tate.2024.104920>
6. Doğan, S., & Adams, A. (2018). Effect of professional learning communities on teachers and students: Reporting updated results and raising questions about research design. *School Effectiveness and School Improvement*, 29(1), 64–90. <https://doi.org/10.1080/09243453.2017.1383274>
7. Dormann, C. F., Elith, J., & Bacher, S. (2013). Collinearity: A review of methods to deal with it and a simulation study evaluating their performance. *Ecological Monographs*, 83(1), 27–46. <https://doi.org/10.1890/12-1235.1>
8. Fabrigar, L. R., Wegener, D. T., MacCallum, R. C., & Strahan, E. J. (1999). Evaluating the use of exploratory factor analysis in psychological research. *Psychological Methods*, 4(3), 272–299. <https://doi.org/10.1037/1082-989X.4.3.272>
9. Hartina, V., & Supriyoko, S. (2025). Contribution of teaching experience, teacher achievement motivation and principal academic supervision on teacher performance in Eduversal partner primary schools throughout Indonesia. *Media Manajemen Pendidikan*, 7(3), 402–411. <https://doi.org/10.30738/mmp.v7i3.16877>
10. Hartinah, S., Suharto, P., Umam, R., Syazali, M., Lestari, B. D., Roslina, R., & Jermisittiparsert, K. (2020). Teacher's performance management: The role of principal's leadership, work environment and motivation in Tegal City, Indonesia. *Management Science Letters*, 10(1), 235–246. <https://doi.org/10.5267/j.msl.2019.7.038>
11. Huijboom, F., Van Meeuwen, P., Rusman, E., & Vermeulen, M. (2021). Professional learning communities as learning environments for teachers: An in-depth examination of the development of seven PLCs and influencing factors. *Learning, Culture and Social Interaction*, 31, 100566. <https://doi.org/10.1016/j.lcsi.2021.100566>
12. Kang, W. (2021). Explaining effects of transformational leadership on teachers' cooperative professional development through structural equation model and phantom model approach. *Sustainability*, 13(19), 10888. <https://doi.org/10.3390/su131910888>
13. Keung, C. P. C., Yin, H., Tam, W. W. Y., Chai, C. S., & Ng, C. K. K. (2020). Kindergarten teachers' perceptions of

- whole-child development: The roles of leadership practices and professional learning communities. *Educational Management Administration & Leadership*, 48(5), 875-892. <https://doi.org/10.1177/1741143219864941>
14. Lei, G., Hamid, A. H. A., & Mansor, A. N. (2024). The role of transformational leadership in professional learning communities: Empirical evidence from China. *Journal of Pedagogical Research*, 8(3), 263-278. <https://doi.org/10.33902/JPR.202427425>
 15. Leithwood, K., Sun, J., Schumacker, R., & Hua, C. (2023). Psychometric properties of the successful school leadership survey. *Journal of Educational Administration*, 61(4), 385-404. <https://doi.org/10.1108/JEA-08-2022-0115>
 16. Li, L., & Liu, Y. (2022). An integrated model of principal transformational leadership and teacher leadership that is related to teacher self-efficacy and student academic performance. *Asia Pacific Journal of Education*, 42(4), 661-678. <https://doi.org/10.1080/02188791.2020.1806036>
 17. MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods*, 4(1), 84-99. <https://doi.org/10.1037/1082-989X.4.1.84>
 18. Maisyaroh, S. (2021). *Strategi Kepala Sekolah dalam Meningkatkan Kinerja Guru di TK Miftahul Ulum Desa Lengkong Mojoanyar Mojokerto* [Institut Pesantren KH. Abdul Chalim]. <https://repository.uac.ac.id/id/eprint/1750/>
 19. Marinda, & Prasajo, L. D. (2025). The effect of principal's academic supervision, teacher professional learning community activities, and teacher professional competence on state vocational high school teachers' performance in Indragiri Hilir Regency. *International Journal of Educational Technology Research*, 3(1). <https://doi.org/10.59890/ijetr.v3i1.394>
 20. Meesuk, P., Wongrugs, A., & Wangkaewhiran, T. (2021). Sustainable teacher professional development through professional learning community: PLC. *Journal of Teacher Education for Sustainability*, 23(2), 30-44. <https://doi.org/10.2478/jtes-2021-0015>
 21. Nurriyayani, N., Niswanto, N., & Usman, N. (2024). Empowering education: Transformational leadership creates inspiring work climates to boost teacher performance. *Al-Tanzim: Jurnal Manajemen Pendidikan Islam*, 8(4). <https://doi.org/10.33650/al-tanzim.v8i4.9646>
 22. Rawati, R., Murniati, M., & Niswanto, N. (2022). Implementation of principal academic supervision in improving teacher performance. *AL-ISHLAH: Jurnal Pendidikan*, 14(1), 659-668. <https://doi.org/10.35445/alishlah.v14i1.546>
 23. Roesminingsih, E., & Windasari, W. (2025). The impact of transformational leadership on teacher performance: A study of professional learning communities in Indonesia. *Journal of Pedagogical Research*, 9(3), 312-326. <https://doi.org/10.33902/JPR.202530146>
 24. Sari, N. (2025). Pengaruh kepemimpinan transformasional kepala sekolah terhadap kinerja guru. *Journal of Innovation in Teaching and Instructional Media*, 5(3), 869-879. <https://doi.org/10.52690/jitim.v5i3.1011>
 25. Sugianto, E. (2024). Pengaruh kepemimpinan transformasional kepala sekolah terhadap kinerja guru. *TSAQOFAH*, 4(5), 3415-3421. <https://doi.org/10.58578/tsaqofah.v4i5.3291>
 26. Syafriani, V., Jamilus, J., & Afriyani, D. A. (2026). The influence of transformational leadership of school principals and learning communities (Kombel) on teachers' professional competence. *Indonesia Auditing Research Journal*, 15(2), 148-155. <https://doi.org/10.35335/arj.v15i2.655>
 27. To, K. H., Yin, H., Tam, W. W. Y., & Keung, C. P. C. (2023). Principal leadership practices, professional learning communities, and teacher commitment in Hong Kong kindergartens: A multilevel SEM analysis. *Educational Management Administration & Leadership*, 51(4), 889-911. <https://doi.org/10.1177/17411432211015227>
 28. Vanblaere, B., & Devos, G. (2016). Exploring the link between experienced teachers' learning outcomes and individual and professional learning community characteristics. *School Effectiveness and School Improvement*, 27(2), 205-227. <https://doi.org/10.1080/09243453.2015.1064455>
 29. Voelkel, R. H. (2022). Causal relationship among transformational leadership, professional learning communities, and teacher collective efficacy. *International Journal of Leadership in Education*, 25(3), 345-366. <https://doi.org/10.1080/13603124.2019.1690699>
 30. Wardani, I. K., Ibrahim, M. M., Baharuddin, B., & Rahman, D. (2022). Supervisi akademik dan kompetensi pedagogik sebagai determinan kinerja guru. *Manajemen Pendidikan*, 17(1). <https://doi.org/10.23917/jmp.v17i1.16261>
 31. Widiyanti, W., Harris, T., & Faizin, A. (2026). A collaborative based academic supervision model for enhancing teacher performance. *TOFEDU: The Future of Education Journal*, 5(1), 945-951. <https://doi.org/10.61445/tofedu.v5i1.1613>
 32. Yang, X., & Chang, Y. C. (2024). The effects of perceived distributed leadership on teacher professional development among primary school teachers: The mediating role of teacher professional learning community. *Journal of Pedagogical Research*, 8(4), 163-177. <https://doi.org/10.33902/JPR.202429304>
 33. Yin, H., To, K. H., Keung, C. P. C., & Tam, W. W. Y. (2019). Professional learning communities count: Examining the relationship between faculty trust and teacher professional learning in Hong Kong kindergartens. *Teaching and Teacher Education*, 82, 153-163. <https://doi.org/10.1016/j.tate.2019.03.019>
 34. Yolviansyah, F., Hermanto, & Rosyidah, D. M. (2024). Academic Supervision and Work Climate to Improve Primary School Teacher Performance. *Jurnal Pendidikan Indonesia*, 13(4). <https://doi.org/10.23887/jpiundiksha.v13i4.79502>

