THE INFLUENCE OF PRINCIPAL LEADERSHIP AND TEACHER PROFESSIONAL COMPETENCE ON THE QUALITY OF ELEMENTARY SCHOOLS

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Abstract	This study investigates the influence of principal leadership and teacher professional competence on the quality of public elementary schools in Sumber District, Rembang Regency. Using a quantitative approach with an ex post facto correlational design, data were collected through validated questionnaires from 147 elementary school teachers selected via proportional random sampling from a population of 233 teachers across 25 schools. Data analysis employed SPSS 25 for Windows, including Pearson correlation, simple and multiple linear regression, t-test, F-test, and coefficient of determination (R^2), all preceded by assumption tests (normality, linearity, multicollinearity). The results show that both principal leadership and teacher professional competence are significantly and strongly correlated with school quality (r = 0.623 and r = 0.606, respectively). Principal leadership explains 38.8% of the variation in school quality, while teacher professional competence contributes 36.7%. Combined, both variables account for 48.3% of the variance. The regression model confirms that improvements in both leadership and professional competence positively and significantly affect school quality. These findings highlight the essential role of effective leadership and teacher competence in enhancing educational outcomes. Therefore, systematic capacity-building for school leaders and continuous professional development for teachers are crucial strategies. This research contributes to empirical understanding and offers practical insights for policymakers, school administrators, and education stakeholders in formulating targeted interventions to improve school quality in primary education settings.
Keywords	Educational Improvement, Elementary Education, Principal Leadership, School Quality, Teacher Professional Competence.

INTRODUCTION

Education, as the foundation for national development, must be managed effectively to ensure continuous improvement in quality (Kenmandola, 2022 ; Susanti et al., 2023). The ideal school is one that can manage its resources efficiently and consistently deliver optimal learning outcomes (Sliwka et al., 2024 ; Sam, 2024). However, in reality, the gap between the ideal and actual performance remains a serious concern, especially in primary education across rural areas. One striking example is the persistent low quality of primary schools in Sumber District, Rembang Regency. Despite national policies promoting quality standards, many schools still struggle with poor academic performance, limited professional capacity among teachers, and weak school leadership (Khalisatun Husna et al., 2023 ; Sisilia Windy, n.d.)

Despite the implementation of national policies aimed at improving education quality standards, many schools—particularly in areas like Sumber District, Rembang Regency—continue to face persistent challenges. These include poor academic performance, limited professional capacity among teachers, and weak school leadership. Underlying these issues are several contributing factors, such as the lack of ongoing professional development for teachers, inadequate supervision and vision from school principals, and a school culture that often resists innovation and reflective practice. The impact of these shortcomings is evident in low student learning outcomes, inconsistent implementation of the Merdeka Curriculum, and declining scores in key quality indicators such as literacy, numeracy, character education, and inclusive school climate.

In response, local governments and education stakeholders in Rembang have introduced various initiatives to address these problems. These include leadership development programs for school principals focused on instructional leadership, supervisory support from education officers, and the promotion of teacher learning communities through the Merdeka Mengajar platform. The Rembang District Education Office has also emphasized regular assessments of teacher competence and encouraged collaboration among schools within educational clusters. However, these efforts have yet to produce significant improvements, as many interventions remain administrative in nature and do not adequately address the strategic dimensions of leadership and pedagogical competence. These persistent challenges thus serve as a critical foundation for this study, which seeks to empirically examine the extent to which principal leadership and teacher professional competence influence the quality of primary education in the region.

According to Ardila & Rigianti (2023), school quality is fundamentally defined by a school's ability to manage its internal components operationally and efficiently, thereby producing added value based on prevailing educational standards. Similarly, Risdianto et al., (2023) and Ali Ilham Mudin & Maunah (2024) argues that quality in education is not solely dependent on input but encompasses the entire system, input, process, output, and impact. These definitions highlight the need for a holistic approach in evaluating school performance (Pratama, 2024). Nevertheless, the discrepancy between ideal frameworks and current practices indicates academic anxiety and structural inefficiencies within school systems (Kristen et al., 2017).

Recent data from the 2024 School Quality Report in Sumber District reveal concerning declines in key indicators such as literacy, numeracy, character education, and inclusivity climate. While minor improvements occurred in instructional leadership and reflective teaching practices, the overall school quality index fell from 77.12 in 2023 to 75.85 in 2024. The decline in areas such as inclusive learning climate (−7.29) and character development (−5.25) suggests that schools are failing to sustain an environment conducive to holistic learning. Such inconsistencies between targeted policies and actual school practices underscore the urgent need for a deeper analysis of the root causes.

Previous studies have consistently shown that one of the most influential factors in determining school quality is school leadership. Masruhin et al., (2022) and Julaiha (2019) emphasizes that principal leadership plays a transformative role by fostering innovation and driving school improvement. A visionary school leader can direct change through collaborative strategies, inspire the school community, and ensure that learning remains relevant, inclusive, and future-oriented (Rachman et al., 2023 ; Zuriah et al., 2023) . Mustaking & Arifuddin (2023) and Sumarni et al., (2022) also reinforces this view by describing the school principal as an educational leader who must assume multiple roles, educator, manager, administrator, innovator, and motivator, all of which are vital in shaping an effective school system.

However, qualitative interviews conducted with school supervisors in Sumber District indicate that many principals remain confined to administrative duties and lack vision-driven leadership. According to Anita Herlina Setianti, most school leaders fail to articulate a clear vision, neglect participative decision-making, and rarely initiate innovative programs. This misalignment between theoretical expectations and the practical application of leadership contributes to the stagnation in school development.

In addition to leadership, teacher professionalism is another critical determinant of school quality (Aini & Nuro, 2023). Arifin & Hanif (2024) asserts that professional competence is central to effective teaching, including mastery of subject matter, pedagogical knowledge, and the ability to implement student-centered strategies. Research by (Harlita & Ramadan, 2024 and Prasetyaningsih et al., 2024) found that teacher competence correlates with school quality by 88.7%, indicating that nearly all aspects of school success stem from how well teachers manage the learning process. Unfortunately, performance evaluation data from 2023 and 2024 show that teachers in Sumber District continue to score lowest in professional competence, with average ratings of only 2.61 and 2.53, respectively, far below the expected threshold for "competent" teachers.

This situation is further supported by studies such as Sahmaulana et al. (2024), Huda (2023), and Damayanti et al. (2024), who emphasize that professional teachers must not only master academic content but also engage in reflective practices, integrate technology, and foster creativity and communication. The low performance ratings in professional domains suggest that teachers have not yet fully embraced these principles in practice (Muspawi, 2021).

This mismatch between theory and practice, between expectation and implementation, creates both academic and institutional anxiety. While literature strongly affirms the significance of leadership and teacher competence in enhancing school quality, the actual performance in Sumber District reflects a disconnection from these standards. Such conditions demand urgent empirical investigation to determine how leadership and professional competence influence school quality in local contexts.

Recent research by Lapir (2024) and Wati et al., (2022) found a positive and significant correlation between principal leadership and teacher professionalism in improving school performance. This implies that synergistic improvement in both areas could yield transformative effects on educational outcomes. Therefore, the present study aims to analyze the effect of principal leadership and teacher professional competence on the quality of primary schools in Sumber District, Rembang Regency.

The significance of this study lies in its dual contribution. Theoretically, it enriches existing discourse on educational leadership and teacher development by focusing on their interaction and impact on school quality. Pragmatically, it offers actionable insights for school administrators, local education offices, and policymakers in designing more effective interventions for sustainable school improvement. Ultimately, this study addresses an urgent educational challenge: bridging the gap

between ideal quality standards and current school realities. By identifying key leverage points, namely, leadership and professional competence, it seeks to provide a comprehensive model for improving school quality at the foundational level of primary education.

METHOD

This study employs a quantitative approach designed to investigate the relationship between school principal leadership and teacher professional competence with the quality of elementary schools in Sumber District, Rembang Regency, Central Java Province, Indonesia (Hardani et al., 2020). Quantitative research is appropriate for systematically analyzing the influence of independent variables using statistical tools, thereby transforming observed phenomena into measurable data (Waruwu et al., 2025). Furthermore, this research is categorized as ex post facto, which means it explores the causes of already-occurring phenomena without manipulating any variables (GÜNGÖR & GEÇİKLİ, 2021). As such, the study captures existing perceptions through structured instruments, particularly questionnaires, to analyze trends that have emerged naturally in the educational context (Client et al., 2021).

The population for this research consists of 233 elementary school teachers spread across 25 public schools in Sumber District. These schools are organized into three administrative education clusters known as "daerah binaan" or *Dabin*. The sampling method used is proportional random sampling, which ensures that the sample is representative of the population from each cluster (Subhaktiyasa, 2024). Using the Taro Yamane formula with a 5% margin of error and 95% confidence level, the sample size was determined to be 147 teachers.

The primary data in this study were obtained through respondents' answers to structured questionnaires, while secondary data included school performance documents and teacher competency evaluations from the Rembang District Education Office. To test the hypotheses, the researcher used both simple linear regression (to examine the influence of each independent variable separately) and multiple regression analysis (to evaluate their combined effect). The statistical tests include t-tests for individual predictors, F-tests for overall model significance, and the coefficient of determination (R^2) to assess the explanatory power of the independent variables on school quality. Normality, linearity, and multicollinearity tests were conducted prior to regression analysis to ensure the assumptions of parametric tests were met.

In addition to the quantitative approach, the study also includes qualitative data collected through semi-structured interviews with school supervisors. This qualitative element enriches the findings by providing contextual insights into leadership practices and teacher professionalism that may not be fully captured through quantitative instruments.

Figure 1. Diagram of Conceptual Framework
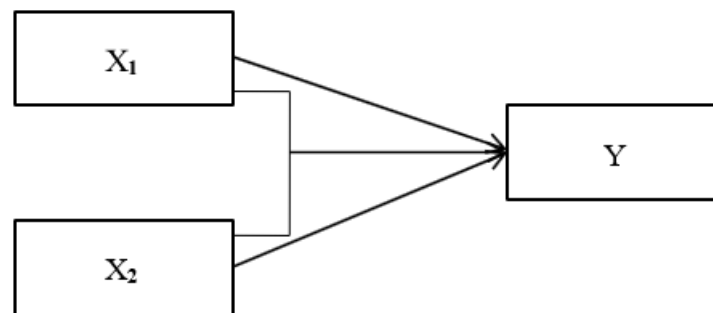
Description:
- X1 = Principal Leadership
- X2 = Teacher's Professional Competence
- Y = Quality of Elementary Schools

This model shows that both X_1 and X_2 are hypothesized to influence Y individually and simultaneously. Based on the research objectives and theoretical framework, the following hypotheses were formulated:

- H_1: There is a significant influence of principal leadership (X_1) on the quality of elementary schools (Y).

- H_2: There is a significant influence of teacher professional competence (X_2) on the quality of elementary schools (Y).

- H_3: There is a simultaneous and significant influence of principal leadership (X_1) and teacher professional competence (X_2) on the quality of elementary schools (Y).

To test these hypotheses, the researcher used both simple linear regression (to examine the influence of each independent variable separately) and multiple regression analysis (to evaluate their combined effect). The statistical tests include t-tests for individual predictors, F-tests for overall model significance, and the coefficient of determination (R^2) to assess the explanatory power of the independent variables on school quality. Normality, linearity, and multicollinearity tests were conducted prior to regression analysis to ensure the assumptions of parametric tests were met

(Silalahi et al., 2024).

In addition to the quantitative approach, the study also includes qualitative data collection through semi-structured interviews with school supervisors. This additional layer provides context to the numerical data, especially regarding leadership dynamics and teacher practices not fully captured by questionnaires. These interviews enrich the findings by highlighting how school leaders and teachers perceive their roles and responsibilities in relation to school quality improvement.

In summary, this methodological design offers a robust framework for understanding how school leadership and teacher professionalism contribute to the perceived quality of education in elementary schools. The integration of quantitative and qualitative elements ensures that the findings are both statistically sound and contextually grounded, providing a comprehensive basis for educational policy and practice reform in the region.

FINDINGS AND DISCUSSION

Findings

A. Data Description

The description of research results reveals that the quality of elementary schools in Sumber District, based on teacher perceptions, falls into the "fairly good" category. This conclusion is supported by a mean score of 101.52 from a total score range of 66 to 143. Most teachers (38.78%) rated school quality as "fairly good," while only 2.72% perceived it as "very good." Regarding principal leadership, the mean score is 85.40, with the majority of respondents (42.17%) placing it in the "fairly good" category, and only a small portion (2.72%) considering it "very good." This suggests that although principals demonstrate commendable behavior and decision-making ability, consistent performance improvement is still needed. Meanwhile, the professional competence of teachers, measured through 28 indicators, also received a "fairly good" rating with a mean score of 95.33. A total of 35.37% of teachers rated their competence in this category, highlighting areas such as instructional planning, implementation, and curriculum integration. However, the proportion of teachers classified as "very competent" remains relatively low (10.88%). Overall, these findings show that although the three variables, school quality, principal leadership, and teacher professional competence, are progressing in the right direction, improvements are still necessary to move from moderate to high-quality standards in education delivery.

B. Dimension Test Results

The dimension analysis results for the three research variables show meaningful insights. For school quality, the highest extraction value is found in the input dimension (0.955), while the lowest is in the process dimension (0.923), indicating that learning processes remain less optimal due to conventional teaching practices. In the principal leadership variable, the intellectual dimension has the highest value (0.926), while the managerial dimension is the lowest (0.853), reflecting the tendency of school leaders to prioritize personal ties over performance-based management. Meanwhile, in the professional competence of teachers, the highest dimension is curriculum usage (0.908), followed by the planning and evaluation dimension (0.903). The lowest dimension is setting goals and content (0.860). Overall, all dimensions have strong extraction values above 0.85, suggesting good construct validity and reflecting real field conditions where most teachers show strong initiative in innovation, while school leadership and instructional processes still require improvement to maximize their impact.

C. Regression Requirement Test Results

The prerequisite analysis test confirms that the data meet the assumptions for parametric statistical analysis (Rizky et al., 2024). The normality tests using the Kolmogorov-Smirnov method show that all variables, school quality (Y), principal leadership (X1), and teacher professional competence (X2), have significance values above 0.05, indicating normally distributed data. The linearity test results also meet the requirements. The Deviation from Linearity for both X1 to Y (0.230) and X2 to Y (0.121) is greater than 0.05, meaning both relationships are linear and appropriate for regression analysis. Lastly, the multicollinearity test shows Tolerance values for both independent variables at 0.681 (>0.10) and VIF values at 1.468 (<10), indicating no multicollinearity. Therefore, it can be concluded that the assumptions of normality, linearity, and non-multicollinearity are fulfilled, and regression analysis can proceed reliably to examine the influence of school principal leadership and teacher professional competence on school quality.

D. Hypothesis Test Results

The hypothesis testing in this study follows four steps: correlation test, ANOVA test, coefficient of determination (summary test), and regression coefficient test (Alwy Yusuf et al., 2024).

1. The Influence of Principal Leadership (X1) on School Quality (Y)

   a. Correlation Test

The Pearson product-moment correlation test aims to determine the relationship between principal leadership and school quality (Husdi & Dalai, 2023). The results of the correlation test can be seen in the following table:

Table 1. Correlation Between Principal Leadership and School Quality

	Principal Leadership	School Quality
Principal Leadership	1	.623**
School Quality	.623**	1
Sig. (2-tailed)		.000
N	147	147

Source: Primary Data Processed, 2025

Based on the Pearson correlation results, the calculated r-value is 0.623 with a significance value of 0.000, which is less than the alpha value of 0.05. Therefore, it can be concluded that there is a significant correlation between principal leadership and school quality. The correlation falls within the range of 0.600–0.799, indicating a "strong" category (Arikunto, 2018).

b. ANOVA (F-Test)

The F-test is used to assess whether the independent variable significantly affects the dependent variable simultaneously. In this study, the F-test determines whether the regression model is statistically fit, which is indicated by a significance value of less than 0.05.

Table 2. ANOVA for Principal Leadership and School Quality

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	15042.988	1	15042.988	819	.000
Residual	23755.719	145	163.833		
Total	38798.707	146			

Dependent Variable: School Quality
Predictors: (Constant), Principal Leadership

The table shows a significance value of 0.000, which is less than 0.05, and an F-value of 91.819, which is greater than the F-table value of 3.06. Thus, H_0 is rejected, and H_1 is accepted, indicating a significant influence of principal leadership on school quality.

c. Coefficient of Determination (R² Test)

The coefficient of determination (R-Square) measures how much variation in the dependent variable can be explained by the independent variable. A value closer to 1 indicates a stronger explanatory power.

Table 3. Coefficient of Determination for Principal Leadership and School Quality

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.623	.388	.383	12.800

Predictors: (Constant), Principal Leadership

The R Square value of 0.388 means that 38.8% of the variation in school quality is explained by principal leadership, while the remaining 61.2% is influenced by other factors.

d. Regression Test

Simple linear regression aims to estimate the average value of the dependent variable based on the independent variable. The regression coefficient is considered significant if the t-value > t-table value, with a significance threshold of 0.05.

Table 4. Regression Coefficient Test

Model	B	Std. Error	Beta	t	Sig.
(Constant)	32.211	7.309		4.407	.000
Principal Leadership	.812	.085	.623	9.582	.000

Dependent Variable: School Quality

The table shows a t-value of 9.582, which is greater than the t-table value of 4.407, with a significance level of 0.000 (< 0.05). This confirms that principal leadership has a positive and significant effect on school quality.

The regression equation is:

$Y = 32.211 + 0.812X_1$

This means:

1. The constant value of 32.211 indicates that if principal leadership is held constant, school quality would still score 32.211.

2. The coefficient of 0.812 indicates a positive relationship, meaning that improvements in principal leadership will increase school quality, and vice versa.

In conclusion, the level of school quality is significantly influenced by the quality of principal leadership. The better the leadership, the higher the quality of the school,

particularly among public elementary schools in Sumber District. Conversely, weak leadership will result in lower school quality.

2. The Influence of Teacher Professional Competence (X2) on School Quality (Y)

a. Correlation Test

The Pearson product-moment correlation test aims to determine the relationship between teacher professional competence and school quality. The results of the correlation test can be seen in the following table:

Table 5. Correlation Between Teacher Professional Competence and School Quality

	Teacher Professional Competence	School Quality
Teacher Professional Competence	1	.606**
School Quality	.606**	1
Sig. (2-tailed)		.000
N	147	147

Source: Primary Data Processed, 2025

The correlation coefficient (r) is 0.606 with a significance value of 0.000, which is less than the alpha value of 0.05. Therefore, it can be concluded that there is a significant correlation between teacher professional competence and school quality. With an r value between 0.600 and 0.799, the relationship is categorized as "strong" (Arikunto, 2018).

b. ANOVA (F-Test)

The F-test assesses whether the regression model used is statistically significant. The model is considered fit if the significance value is less than 0.05.

Table 6. ANOVA of Teacher Professional Competence and School Quality

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	14237.975	1	14237.975	84.057	.000
Residual	24560.733	145	169.384		
Total	38798.707	146			

Dependent Variable: School Quality
Predictors: (Constant), Teacher Professional Competence

The significance value of 0.000 is less than 0.05, and the F value of 84.057 is greater than the F table value (3.06). Therefore, H_0 is rejected and H_1 is accepted, indicating that teacher professional competence significantly affects school quality.

c. Coefficient of Determination (R² Test)

This test evaluates how much of the variation in the dependent variable (school quality) can be explained by the independent variable (teacher professional competence).

Table 7. Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.606	.367	.363	13.015

Predictors: (Constant), Teacher Professional Competence

The R Square value of 0.367 means that 36.7% of the variation in school quality is explained by teacher professional competence, while the remaining 63.3% is influenced by other factors.

d. Regression Test (T-Test)

The regression test estimates the effect of an independent variable on the dependent variable. The regression coefficient is considered significant if the t-value is greater than the t-table value and the significance level is less than 0.05.

Table 8. Regression Coefficient

Model	B	Std. Error	Beta	t	Sig.
(Constant)	43.316	6.438		6.728	.000
Teacher Professional Competence	.611	.067	.606	9.168	.000

Dependent Variable: School Quality

The t-value of 9.168 is greater than the t-table value of 6.728, with a significance value of 0.000 (< 0.05). This indicates that teacher professional competence has a positive and significant effect on school quality.

The regression equation is:

$Y = 43.316 + 0.611X_2$

This means:

1. The constant value of 43.316 indicates that if teacher competence remains unchanged, school quality would still score 43.316.

2. The coefficient of 0.611 shows a positive regression, meaning that an improvement in teacher competence leads to an increase in school quality, and vice versa.

Thus, it can be concluded that the level of school quality is significantly influenced by the level of teacher professional competence. The better the competence, the higher the school quality, particularly in public elementary schools in Sumber District. Conversely, low competence results in decreased school quality

3. The Influence of Principal Leadership (X1) and Teacher Professional Competence (X2) on School Quality (Y)

a. Correlation Test

Before conducting the regression analysis of principal leadership and teacher professional competence on school quality, a correlation test using the Pearson product-moment method was carried out. This test aimed to determine the relationship between the two independent variables—principal leadership and teacher professional competence, and the dependent variable, school quality.

Table 9. Correlation Between Principal Leadership, Teacher Professional Competence, and School Quality

	Principal Leadership	Teacher Professional Competence	School Quality
Principal Leadership	1	.565**	.623**
Teacher Professional Competence	.565**	1	.606**
School Quality	.623**	.606**	1
Sig. (2-tailed)	.000	.000	.000
N	147	147	147

Source: Primary Data Processed, 2025

The correlation values for principal leadership and teacher professional competence with school quality are 0.623 and 0.606, respectively, with significance values of 0.000 (< 0.05). These results indicate strong and significant positive relationships, as both values fall within the range of 0.600–0.799 (Arikunto, 2018).

b. ANOVA (F-Test)

The F-test assesses whether both independent variables simultaneously have a significant effect on the dependent variable.

Table 10. ANOVA – Influence of Principal Leadership and Teacher Professional Competence on School Quality

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	18722.382	2	9361.191	67.144	.000
Residual	20076.325	144	139.419		
Total	38798.707	146			

Dependent Variable: School Quality
Predictors: (Constant), Teacher Professional Competence, Principal Leadership

With an F value of 67.144 (> F table = 3.06) and a significance level of 0.000 (< 0.05), the model is considered fit. Thus, principal leadership and teacher professional competence together significantly influence school quality.

a. Coefficient of Determination (R^2 Test)

This test shows the proportion of variance in the dependent variable that is explained by the independent variables.

Table 11. Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.695	.483	.475	11.808

Predictors: (Constant), Teacher Professional Competence, Principal Leadership

The R Square value of 0.483 indicates that 48.3% of the variation in school quality is explained by principal leadership and teacher professional competence. The remaining 51.7% is influenced by other factors not examined in this study.

b. Regression Test (T-Test)

This test determines the individual contribution of each independent variable to the dependent variable.

Table 12. Regression Coefficients

Model	B	Std. Error	Beta	t	Sig.
(Constant)	19.815	7.162		2.767	.006
Principal Leadership	.537	.095	.412	5.671	.000
Teacher Professional Competence	.376	.073	.373	5.137	.000

Dependent Variable: School Quality

1. The t-value for principal leadership is 5.671 (> 2.767), with a significance of 0.000, indicating a significant and positive influence on school quality.

2. The t-value for teacher professional competence is 5.137 (> 2.767), also with a significance of 0.000, indicating a significant and positive influence.

The resulting regression equation is:

$\hat{Y} = 19.815 + 0.537X_1 + 0.376X_2$

This equation can be interpreted as follows:

- The constant value of 19.815 means that if both variables are held constant, school quality would have a base score of 19.815.

- The coefficient of 0.537 indicates that improved principal leadership contributes positively to increasing school quality.

- The coefficient of 0.376 shows that greater teacher professional competence also positively influences school quality.

In conclusion, the overall quality of public elementary schools in Sumber District is significantly affected by both principal leadership and teacher professional competence. The better these two factors are, the higher the school quality; conversely, their decline will result in lower school quality

Discussion

1. The Influence of Principal Leadership on School Quality

This study found that principal leadership significantly influences the quality of public elementary schools in Sumber District, Rembang Regency, contributing 38.8% to school quality variation. A strong correlation ($r = 0.623$) and a significant regression coefficient ($\beta = 0.812$) indicate that improvements in school leadership are closely linked to better educational outcomes. These findings align with transformational and instructional leadership theories, which emphasize the principal's role in setting vision, guiding teaching practices, and shaping a collaborative school culture (Putu Prema Swandewi et al., 2024).

The results affirm studies by Kadarsih et al. (2020) and A'yun (2022), which also highlight leadership as a key determinant of school performance. Similarly, Rachman et al. (2023) and Mustaking & Arifuddin (2023) emphasize that visionary principals foster innovation, inclusivity, and teacher motivation. However, other studies, such as Huda (2023), point out that many principals still focus on administrative tasks, limiting their transformational impact.

Although leadership is critical, it is not the sole determinant of school quality. The remaining variance may involve factors like teacher competence, school infrastructure, and stakeholder collaboration. Research by Sahmaulana et al., (2024) and Sliwka et al., (2024) underscores the synergistic effect of leadership when combined with teacher professionalism and learning communities.

Therefore, leadership development must be prioritized through targeted training, mentoring, and performance-based evaluation. Strengthening principal capacity is essential to building resilient, high-performing schools, especially in rural and underperforming regions such as Sumber District.

2. The Influence of Teacher Professional Competence on School Quality

This study found a strong and significant relationship between teacher professional competence and school quality in public elementary schools in Sumber District, with a correlation coefficient of 0.606 and a significance value of 0.000. Regression analysis showed that teacher competence contributed 36.7% to the variance in school quality, with a regression coefficient of 0.611. This means that improvements in professional competence—such as mastery of subject matter, pedagogical skills, and the ability to apply student-centered strategies—have a measurable impact on improving educational outcomes.

These findings are consistent with research by Syarief Hidayatulloh, (2023) and Fitria et al., (2024), who reported that teacher competence has a major role in determining school effectiveness. Harlita & Ramadan (2024) also emphasize the importance of professional learning communities in enhancing teacher capacity and classroom practices. Furthermore, (Arifin & Hanif, (2024) argue that pedagogical competence must be continuously developed through reflective practice and curriculum integration, especially in the context of curriculum reforms like Kurikulum Merdeka.

However, some studies suggest that professional competence alone is not sufficient. Muspawi (2021) and Sahmaulana et al. (2024) highlight that without adequate support systems, such as visionary leadership and collaborative school culture, competent teachers may struggle to translate their skills into improved learning outcomes. Therefore, while teacher professionalism is a key factor, it must be supported by institutional policies and leadership that foster professional growth.

Investing in continuous professional development and structured mentoring systems is essential to maximize the contribution of teacher competence to school quality.

3. The Influence of Principal Leadership and Teacher Professional Competence on School Quality

This study confirms that both principal leadership and teacher professional competence have a significant and simultaneous effect on school quality in Sumber District, Rembang Regency. The correlation coefficients of 0.623 and 0.606, respectively, indicate strong relationships with school quality, supported by significance values of 0.000. The multiple regression analysis showed that these two variables together explain 48.3% of the variation in school quality, a substantial contribution that underscores their joint influence on educational performance.

The regression model ($\hat{Y} = 19.815 + 0.537X_1 + 0.376X_2$) suggests that improvements in either variable lead to measurable increases in school quality, with principal leadership having a slightly stronger effect. These results align with the theoretical view that school improvement is best achieved through the interplay of strong instructional leadership and teacher competence (Leithwood & Jantzi, 2005; Hallinger, 2011). Both leadership and professional capacity serve as the backbone of effective school governance and instructional quality.

These findings echo those of Stai & Jambi (2020), who found that school quality is significantly influenced by the synergy between principal leadership, teacher professionalism, and work motivation. Likewise, research by Mustaking & Arifuddin (2023) and Harlita & Ramadan (2024) emphasizes that isolated improvements are not enough—systemic collaboration and aligned goals are key.In conclusion, the integration of leadership and professionalism is essential for driving school quality. Policymakers must design interventions that target both domains simultaneously to foster sustainable improvements in learning outcomes.

CONCLUSION

The research highlights the critical role of both principal leadership and teacher professional competence in shaping the quality of education in public elementary schools. These two factors serve as foundational pillars that guide school improvement, foster academic excellence, and create a supportive learning environment. The interactions between effective leadership and professional teaching practices not only strengthen institutional performance but also contribute to a more sustainable and impactful educational system. Overall, the findings underscore the importance of empowering school leaders and teachers as agents of change within schools. As education continues to face evolving challenges, schools must invest in leadership development and continuous teacher training to enhance their capacity to meet student needs. Strengthening these elements ensures that educational quality is not only maintained but progressively improved, creating a path for long-term educational success.

REFERENCES

Aini, D. F. N., & Nuro, F. R. M. (2023). Analisis Kompetensi Literasi Digital Guru sebagai Pendukung Keterampilan Guru Sekolah Dasar. *Jurnal Basicedu*, *7*(1), 840–851. https://doi.org/10.31004/basicedu.v7i1.4744

Ali Ilham Mudin, M., & Maunah, B. (2024). PT. Media Akademik Publisher Peran Strategis Manajemen Sumber Daya Manusia dalam Lembaga Pendidikan Islam di Sekolah Dasar Islam

Terpadu (Sdit) Cinta Islam Jombang. *JMA)*, 2, 3031–5220. https://doi.org/10.62281

Alwy Yusuf, M., Abraham, A., Rukmana, H., Negeri Makassar, U., P Pettarani, J. A., Rappocini, K., Makassar, K., & Selatan, S. (2024). Analisis Regresi Linier Sederhana dan Berganda Beserta Penerapannya. *Journal on Education*, *06*(02).

Ardila, Y. P., & Rigianti, H. A. (2023). Peran Penting dan Tantangan yang dihadapi oleh Guru Profesional Dalam Kegiatan Belajar Mengajar di Kelas. In *June*.

Arifin, J., & Hanif, M. (2024). Manajemen Program Komunitas Belajar Sekolah untuk Peningkatan Kompetensi Pedagogik Guru. *Ideguru: Jurnal Karya Ilmiah Guru*, *9*(3), 1421–1432. https://doi.org/10.51169/ideguru.v9i3.1112

A'yun, N. Q. (2022). Pengaruh Kepemimpinan Kepala Sekolah terhadap Kinerja Guru di Sekolah. *Journal of Islamic Education and Innovation*, 86–96. https://doi.org/10.26555/jiei.v3i2.6607

Client, K., Matutes, B., Pauline, A., Panoril, C., Galaroza, J. Q., & Fragata, J. P. (2021). An Ex Post Facto Study on Student Performance of Elementary Education Students of Initao College during the First Year of Flexible Learning Implementation. *Journal of Education & Social Policy*, *8*(2). https://doi.org/10.30845/jesp.v8n2p11

Damayanti, D., Asbari, M., & Zaharantika, A. (2024). Guru Penggerak: Pengembangan Pendidikan melalui Kepemimpinan Guru. *Journal of Information Systems and Management*, *03*(02). https://jisma.org

Fitria, N., Hidayat, N., Nuryana, C. O., & Setiawan, A. (2024). Implementasi Penerapan Customer Relationship Management (CRM) Online untuk Meningkatkan Layanan Pendidikan terhadap Wali Murid di. *Sekolah Menengah Kejuruan. Lentera: Jurnal Ilmiah Kependidikan*, *17*(1), 113–122. https://doi.org/10.52217/lentera.v17i1.1448

Güngör, M., & Geçikli, M. (2021). An Ex-Post Facto Study on the Affective Domain of the 5th Grade English Language Teaching Curriculum. *Kuramsal Eğitimbilim*, *14*(3), 411–431. https://doi.org/10.30831/akukeg.882400

Hardani MSi, A., Ustiawaty, J., & Juliana Sukmana, D. (2020). *Buku Metode Penelitian Kualitatif & Kuantitatif*. https://www.researchgate.net/publication/340021548

Harlita, I., & Ramadan, Z. H. (2024). *Peran Komunitas Belajar di Sekolah Dasar dalam Mengembangkan Kompetensi Guru*. https://jurnaldidaktika.org

Huda Sekolah Menengah Kejuruan Negeri, M. (2023). *Pengaruh Kepemimpinan Kepala Sekolah dan Kompetensi Profesional Guru Terhadap Produktivitas Kerja Guru SMK Negeri di Kabupaten Batang* (Vol. 12, Issue 3).

Husdi, H., & Dalai, H. (2023). Penerapan Metode Regresi Linear untuk Prediksi Jumlah Bahan Baku Produksi Selai Bilfagi. *Jurnal Informatika*, *10*(2), 129–135. https://doi.org/10.31294/inf.v10i2.14129

Julaiha, S. (n.d.). Konsep Kepemimpinan Kepala Sekolah. In *Jurnal Penelitian Pendidikan dan Pembelajaran* (Vol. 6, Issue 3).

Kadarsih, I., Marsidin, S., Sabandi, A., & Febriani, E. A. (2020). Peran dan Tugas Kepemimpinan Kepala Sekolah di Sekolah Dasar. *Edukatif: Jurnal Ilmu Pendidikan*, *2*(2), 194–201. https://doi.org/10.31004/edukatif.v2i2.138

Kenmandola, D. (2022). *Kualitas Pendidikan di Indonesia Pendidikan Fisika*.

Khalisatun Husna, Farras Fadhilah, Ulfa Hayana Sari Harahap, Muhammad Arby Fahrezi, Khalid Samahangga Manik, M. Yasir Ardiansyah, & Inom Nasution. (2023). Transformasi Peran Guru Di Era Digital: Tantangan Dan Peluang. *Perspekti: Jurnal Pendidikan Dan Ilmu Bahasa*, *1*(4), 154–167. https://doi.org/10.59059/perspektif.v1i4.694

Kristen, U., Wacana, S., Tius, R., Margareta, E., Ismanto, B., Manajemen, M., Universitas, P., & Wacana, K. S. (2017). *Magister Manajemen Pendidikan FKIP Strategi Perencanaan Pembiayaan Sekolah dalam Peningkatan Mutu di SMP Negeri*. 2, 195–204.

Lapir, C. N. (2024). Kepemimpinan Kepala Sekolah dalam Perspektif Sekolah Efektif. *Edukatif: Jurnal Ilmu Pendidikan*, *6*(4), 3123–3130. https://doi.org/10.31004/edukatif.v6i4.7172

Masruhin, S., STS Jambi, U., & Author, C. (2022). Kepemimpinan Partisipatif: Literature Review. *Jurnal Al Mujaddid Humaniora*, *8*(1). https://doi.org/10.58553/jalhu

Muspawi, M. (2021). Strategi Peningkatan Kinerja Guru. *Jurnal Ilmiah Universitas Batanghari Jambi*, *21*(1), 101. https://doi.org/10.33087/jiubj.v21i1.1265

Mustaking, & Arifuddin. (2023). *Halaman | 104 Pengaruh Kepemimpinan Visioner Terhadap Budaya Organisasi dan Komitmen Serta Implikasinya Pada Kinerja Aparatur Sipil Negara*. https://e-jurnal.nobel.ac.id/index.php/akmen

Prasetyaningsih, N., Muiz, A., & Fatimah, F. (2024). Penggunaan Platform Merdeka Mengajar (PMM) untuk Peningkatan Kompetensi Guru di Sekolah Dasar. *Jurnal Basicedu*, *8*(1), 788–798. https://doi.org/10.31004/basicedu.v8i1.7108

Pratama, S. (2024). Analisis Kinerja Guru Penggerak dalam Peningkatan Mutu Pendidikan di Sekolah Muhammadiyah Kota Makassar. In *Jurnal Kependidikan* (Vol. 13, Issue 2). https://jurnaldidaktika.org

Putu Prema Swandewi, N., Putu Wisna Ariawan, I., & Luh Gede Erni Sulindawati, N. (2024). Pengaruh Kepemimpinan Instruksional, Literasi Digital, Kecerdasan Emosional, Kecerdasan Intelektual Terhadap Kinerja Guru. *Ni Luh Gede Erni Sulindawati*, *4*(1).

Rachman, E. A., Humaeroh, D., Sari, D. Y., & Mulyanto, A. (2023). Kepemimpinan Visioner dalam Pendidikan Karakter. *Jurnal Educatio FKIP UNMA*, *9*(2), 1024–1033. https://doi.org/10.31949/educatio.v9i2.5053

Risdianto, R., Fahruddin, F., Hakim, M., Asrin, A., & Setiadi, D. (2023). Manajemen Sumber Daya Manusia Pendidik dan Tenaga Kependidikan di SMA Negeri 2 Sumbawa Besar. *Jurnal Ilmiah Profesi Pendidikan*, *8*(2), 1112–1118. https://doi.org/10.29303/jipp.v8i2.1427

Rizky, M., Saputra, H., Ramadhan Basuki, R., & Muhtadin, I. A. (2024). Analissi Regresi pada (Saputra, dkk) Madani. *Jurnal Ilmiah Multidisipline*, *307*(1), 307–314. https://doi.org/10.5281/zenodo.10537197

Sahmaulana, D., Lukas, S., Auliya, S., Selatan, T., Kunci, K., belajar, M., Guru, K., Belajar, M., & jalur, A. (2024). Pengaruh Digitalisasi Pembelajaran, Kompetensi Guru dan Variasi Metode Pembelajaran Terhadap Motivasi Belajar Siswa SMP Auliya. *Jurnal Pendidikan Indonesia*, *5*(9).

Sam, R. (2024). Systematic review of inquiry-based learning: assessing impact and best practices in education. *F1000Research*, *13*, 1045. https://doi.org/10.12688/f1000research.155367.1

Silalahi, R. A., Hafsari, A. A., Situmorang, D., Emaninta, N., Ginting, B., Girsang, A. B., Martin, M., Febriyansi, E., & Ompusunggu, P. (2024). Hasil Perhitungan Asumsi Klasik: Tentang Uji Autokorelasi, Normalitas, dan Heterokedatisitas. In *Jurnal Ilmiah Multidisipliner (JIM)* (Vol. 8, Issue 12).

Sisilia Windy, P. (n.d.). *Tantangan dan Solusi dalam Menegelola Keuangan Sekolah Secara Efektif*. *02*(01), 350–355.

Sliwka, A., Klopsch, B., Beigel, J., & Tung, L. (2024). Transformational Leadership for Deeper Learning: shaping innovative school practices for enhanced learning. *Journal of Educational Administration*, *62*(1), 103–121. https://doi.org/10.1108/JEA-03-2023-0049

Subhaktiyasa, P. G. (2024). Menentukan Populasi dan Sampel: Pendekatan Metodologi Penelitian Kuantitatif dan Kualitatif. *Jurnal Ilmiah Profesi Pendidikan*, *9*(4), 2721–2731. https://doi.org/10.29303/jipp.v9i4.2657

Sumarni, A., Batanghari, I., Gusvita, M., Lestiana IAIN Batanghari, W., IAIN Batanghari, ini, & Rahmadani IAIN Batanghari, N. (2022). Mengenal Gaya Kepemimpinan dalam Dunia Pendidikan. In *Muntazam: Jurnal Manajemen Pendidikan Islam* (Vol. 3, Issue 1).

Susanti, A., Riyanto, Y., & Sigit, B. (2023). Principal Professionalism in Improving the Quality of Education in Senior High School. *Scaffolding: Jurnal Pendidikan Islam dan Multikulturalisme*, *5*(1), 1–18. https://doi.org/10.37680/scaffolding.v5i1.2291

Syarief Hidayatulloh, F. (2023). Hubungan Beban Kerja, Perencanaan SDM, dan Kinerja Guru. *Journal of Education and Teaching (JET)*, *4*(1), 128–139. https://doi.org/10.51454/jet.v4i1.231

Waruwu, M., Natijatulpùat, S., Utami, P. R., Yanti, E., & Rusydiana, M. (2025). Metode Penelitian Kuantitatif: Konsep, Jenis, Tahapan dan Kelebihan. *Jurnal Ilmiah Profesi Pendidikan*, *10*(1), 917–932. https://doi.org/10.29303/jipp.v10i1.3057

Wati, D. P., Wahyuni, N., Fatayan, A., & Bachrudin, A. A. (2022). Analisis Kepemimpinan Kepala Sekolah di Sekolah Dasar. *Jurnal Basicedu*, *6*(5), 7970–7977. https://doi.org/10.31004/basicedu.v6i5.3684

Zuriah, C., Sariakin, S., & Putra, M. (2023). Kontribusi Kepemimpinan Visioner Kepala Sekolah Terhadap Efektivitas Sekolah Dasar Negeri di Kecamatan Kuta Raja Kota Banda Aceh. *Nusra: Jurnal Penelitian Dan Ilmu Pendidikan*, *4*(4), 1140–1147. https://doi.org/10.55681/nusra.v4i4.1761