

Impact of Principal Leadership on Teachers' Pedagogical, Personality, Social, and Professional Competencies

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To Cite This Article:

Hartanto, K., Rondli, W. S., and Ismaya, E. A. (2026). Impact of Principal Leadership on Teachers' Pedagogical, Personality, Social, and Professional Competencies. *ICCCM Journal of Social Sciences and Humanities*, 5(4). 1-6 <https://doi.org/10.53797/icccmjssh.v5i4.1.2026>

Abstract: This study investigates the impact of principal leadership on the pedagogical, personality, social, and professional competencies of elementary school teachers in Tanggungharjo District, Grobogan Regency, Indonesia. Employing a quantitative associative design with a survey approach, data were collected from 76 certified civil servant teachers using a Likert-scale questionnaire. Simple linear regression and t-tests revealed that principal leadership significantly and positively influences all four competency dimensions at a 95% confidence level. The highest coefficient of determination was observed for personality competence ($R^2 = 0.979$), followed by social ($R^2 = 0.944$), professional ($R^2 = 0.899$), and pedagogical competence ($R^2 = 0.714$). Transformational and inclusive leadership styles were found to foster teacher motivation, professional development, and collaboration. These findings underscore the pivotal role of principal leadership in enhancing teacher competencies. Recommendations include implementing leadership training and capacity-building programs to optimize educational outcomes in resource-constrained regions.

Keywords: principal leadership, teacher competencies, elementary education, transformational leadership

1. Introductions

Education serves as a cornerstone for societal progress, with elementary schools playing a critical role in shaping students' intellectual, social, and emotional development. Teachers, as key actors in this process, require robust competencies—pedagogical, personality, social, and professional—to deliver effective learning experiences (Naziah et al., 2020; Tammets & Ley, 2023). These competencies are crucial for creating meaningful learning experiences and adapting to the evolving demands of 21st-century education, which increasingly emphasizes innovative, adaptive, and student-centered approaches (Afriantoni et al., 2025; Li Jinlong, 2024)

Teacher competency development is significantly influenced by school leadership, particularly the principal's role in fostering a supportive and collaborative environment (Fitriani et al., 2021; Msambwa et al., 2024). Effective supervision by principals contributes significantly to improving teacher performance through consistent planning, implementation, and evaluation (Budiman et al., 2020; Sarwar et al., 2022). This perspective aligns with the understanding that principals hold a crucial role in developing teacher professionalism through consistent and supportive supervisory practices (Ansar et al., 2022). In Indonesia, where educational resource constraints are prevalent, especially in regions like Tanggungharjo District, Grobogan Regency, the principal's leadership becomes pivotal in enhancing teacher performance and educational quality (Suprijati et al., 2024). Furthermore, the ability of school leaders to manage learning, including the implementation of new curricula like Merdeka Curriculum, is essential for improving the quality of education (Utaminingsih & Mahanita, 2024).

This study examines the influence of principal leadership on the four dimensions of teacher competencies in elementary schools. Pedagogical competence involves designing and implementing effective teaching strategies, understanding student characteristics, and utilizing technology effectively (Arifin & Hasanah, 2021; Jusuf et al., 2020). Personality competence reflects teachers' integrity and role as exemplars (Afrianti et al., 2021). Social competence encompasses effective communication and collaboration, while professional competence involves subject mastery and continuous professional development (Afrianti et al., 2021; Nurhidayah & Suyanto, 2021). Transformational and inclusive leadership styles are hypothesized to drive improvements across these competencies by motivating teachers and creating conducive work environments (Supanji et al., 2020). The correlation between certified teachers and pedagogical competence, leading to improved learning quality, has also been highlighted, indicating that certified teachers often demonstrate higher pedagogical abilities (Demeshkant, 2020).

Despite existing research on leadership and teacher performance, few studies holistically explore its impact on all four competency dimensions in resource-limited contexts. This study addresses this gap by analyzing data from 76 certified elementary school teachers in Tanggungharjo, using a quantitative survey approach. The findings aim to provide practical insights for school leaders and policymakers to enhance teacher competencies through targeted leadership training. By focusing on a localized context, this research contributes to the global discourse on educational leadership while offering actionable recommendations for improving elementary education in Indonesia. The importance of continuous professional development and training for teachers is also crucial for sustainable technology integration in the pedagogical process, addressing internal and external barriers to adoption (Utaminingsih et al., 2023).

1.1 Conceptual Framework

The conceptual framework of this study is grounded in the interplay between principal leadership and the enhancement of teacher competencies, specifically pedagogical, personality, social, and professional competencies, within the context of elementary education. Principal leadership is conceptualized as a multifaceted construct encompassing transformational and inclusive approaches, which emphasize motivating teachers, fostering collaboration, and creating a supportive work environment (Estiani & Hasanah, 2022; Silam et al., 2021). Transformational leadership inspires teachers to exceed expectations through a shared vision and professional development opportunities, while inclusive leadership promotes participation and open communication (Mirsultan & Marimuthu, 2021; Sarong, 2023).

Pedagogical competence involves teachers' abilities to plan, implement, and evaluate learning processes effectively, integrating technology and adapting to student needs (Tammets & Ley, 2023; Zorde & Lapidot-Lefler, 2025). Personality competence reflects teachers' integrity, professionalism, and role as exemplars, fostering trust and ethical behavior (Nurhidayah & Suyanto, 2021). Social competence encompasses effective communication, collaboration, and empathy, enabling teachers to build positive relationships with students, colleagues, and parents (Jevtić & Milanović, 2021). Professional competence encompasses a comprehensive understanding of subject matter coupled with a dedication to ongoing professional development through training and innovative practices (Agmanda & Sumarmin, 2020).

The theoretical underpinning posits that principal leadership directly influences these competencies by creating a conducive environment for professional growth and collaboration. For instance, transformational leadership encourages pedagogical innovation through academic supervision and training, while inclusive leadership enhances social competence by fostering teamwork (Kareem et al., 2023; Sarong, 2024). The framework hypothesizes that effective principal leadership positively impacts all four competency dimensions, with stronger leadership correlating with higher competency levels. This study tests these relationships using a quantitative approach, focusing on certified elementary school teachers in Tanggungharjo District, Grobogan Regency. By examining these dynamics in a resource-constrained setting, the framework aims to provide insights into how leadership can drive educational quality through teacher competency development.

1.2 Research Objectives

This study aims to analyze the impact of principal leadership on teachers' pedagogical, personality, social, and professional competencies in elementary schools in Tanggungharjo District, Grobogan Regency, to enhance educational quality through effective leadership practices.

2. Methodology

2.1 Research Design

This study employed a quantitative associative design with a survey approach to examine the impact of principal leadership on teachers' pedagogical, personality, social, and professional competencies. This design is particularly suited for exploring and establishing the degree of relationship between variables, allowing researchers to measure the direct influence of an independent variable (principal leadership) on multiple dependent variables (the four dimensions of teacher competencies). The research is contextualized within elementary schools in Tanggungharjo District, Grobogan Regency, a region where educational resource constraints are prevalent.

2.2 Population and Sample

The population for this research comprised 93 certified civil servant teachers operating within the specified district. Selecting certified teachers is a critical parameters for this study, as the correlation between certified teachers and pedagogical competence often indicates a baseline of higher pedagogical abilities and a readiness to improve learning quality. To ensure fairness and representativeness across the population, a sample of 76 respondents was selected utilizing a simple random sampling technique.

2.3 Data Collection

Primary data were gathered through the administration of a structured, validated Likert-scale questionnaire, utilizing a standard 1–5 scoring scale. This instrument was specifically designed to capture the teachers' perceptions of their principal's leadership style—such as transformational and inclusive traits—and self-assessments of their own four competency dimensions. Prior to the main data collection, the instrument's validity and reliability were rigorously tested and confirmed through SPSS analysis. The results demonstrated high internal consistency and accuracy for all variables:

Table 1. Instrument Validity and Reliability Results

Variable	Cronbach's Alpha	Validity (r-value)
Principal Leadership	0.89	0.76–0.92
Pedagogical Competence	0.87	0.71–0.89
Personality Competence	0.91	0.78–0.94
Social Competence	0.90	0.75–0.93
Professional Competence	0.88	0.73–0.91

2.4 Data Analysis

The collected data were subjected to quantitative analysis using SPSS software to determine the statistical significance of the relationships. Simple linear regression was utilized to model the predictive relationship and quantify the variance explained by principal leadership on each specific competency. Additionally, t-tests were conducted to evaluate the significance of these influences, operating at a strict 95% confidence level.

3. Findings and Discussion

The study's primary findings confirm that principal leadership significantly and positively influences teachers' pedagogical, personality, social, and professional competencies in elementary schools within Tanggunharjo District, Grobogan Regency. Through simple linear regression and t-tests conducted at a strict 95% confidence level, the analysis revealed positive correlations across all dimensions, with t-calculated values consistently exceeding the t-table thresholds. The strength of this impact and the variance explained by the principal's leadership are clearly illustrated by the coefficients of determination (R^2) for each specific competency.

Among the four dimensions, personality competence demonstrated the highest level of influence from principal leadership, recording an R^2 of 0.979. This strong correlation indicates that principals' inclusive practices, such as providing consistent academic supervision and fostering collaborative opportunities, significantly bolster teachers' ethical behavior and personal integrity. Following closely, social competence exhibited the second-highest influence with an R^2 of 0.944. This demonstrates that inclusive leadership directly translates into enhanced teamwork and more effective communication among teaching staff. Professional competence also showed a highly significant positive correlation ($R^2 = 0.899$). This result aligns closely with previous research emphasizing that transformational leadership plays a crucial role in enhancing teacher motivation, inspiring staff to exceed expectations, and driving continuous professional growth.

Conversely, while still statistically significant, pedagogical competence recorded the lowest coefficient of determination at $R^2 = 0.714$. This relatively lower influence suggests that the development of practical teaching strategies and pedagogical skills may be moderated by external factors. Because the study took place in an area characterized by educational resource constraints, the mere presence of strong leadership cannot entirely overcome systemic shortages or environmental barriers. Ultimately, these findings highlight the critical need for targeted leadership training designed to strengthen principal capacity specifically within resource-limited settings. By equipping school leaders with the tools to effectively support their staff through transformational and inclusive practices, schools can better foster holistic teacher competency development and, consequently, improve overall educational outcomes.

Table 2. Regression Results for Teacher Competencies

Competency	R ²	t-calculated	p-value
Pedagogical	0.714	8.774	0.000
Personality	0.979	40.849	0.000
Social	0.944	24.629	0.000
Professional	0.899	17.629	0.000

* Personality competence showed the highest influence ($R^2 = 0.979$), followed by social ($R^2 = 0.944$), professional ($R^2 = 0.899$), and pedagogical competence ($R^2 = 0.714$).

The results align with previous research, emphasizing transformational leadership's role in enhancing teacher motivation and professional growth (Kilonzo et al., 2020; Sarong, 2023). Principals' inclusive practices, such as academic supervision and collaborative opportunities, significantly bolster personality and social competencies, fostering ethical behavior and effective communication (Serin & Akkaya, 2020). The relatively lower R^2 for pedagogical competence suggests external factors, like resource constraints, may moderate its development (Molina-Moreno et al., 2024). These findings highlight the need for targeted leadership training to strengthen principal capacity in resource-limited settings, supporting teacher competency development and improving educational outcomes.

4. Conclusions and Recommendations

This study confirms that principal leadership significantly enhances teachers' pedagogical, personality, social, and professional competencies in elementary schools in Tanggunharjo District, Grobogan Regency. Transformational and inclusive leadership styles foster a supportive environment, driving teacher motivation and collaboration. Personality competence showed the strongest influence ($R^2 = 0.979$), followed by social ($R^2 = 0.944$), professional ($R^2 = 0.899$), and pedagogical competence ($R^2 = 0.714$). These findings highlight the pivotal role of principals in improving educational quality, particularly in resource-constrained settings, by promoting professional development and ethical behavior among teachers.

To optimize teacher competencies, principals should undergo leadership training focusing on transformational and inclusive practices. Policymakers should develop programs supporting academic supervision and professional collaboration, tailored to resource-limited regions. Schools should prioritize creating collaborative environments to enhance social and personality competencies. Future research should explore additional factors, such as digital literacy or school culture, to further understand their impact on teacher competencies in similar contexts.

Acknowledgement

The author expresses gratitude to Universitas Muria Kudus for support given.

Conflict of Interests

The authors declare there is no conflict of interest.

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