

# Education Level and Teaching Experience as Determinants of Teacher Competence in Rural Islamic Primary Schools

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## Abstract:

This study explores the simultaneous and partial associations among teachers' educational level, teaching experience, and overall competence within a single rural Islamic primary school context. Using a quantitative survey design, the study involved a saturated sample of 30 teachers during the 2024/2025 academic year. Data were obtained from a validated teacher competence questionnaire and from institutional records on educational level and teaching experience. Descriptive statistics and multiple regression analyses were performed following standard assumption tests. The findings indicate that teachers' education level and teaching experience are significantly associated with teacher competence, jointly accounting for 60.1% of the observed variance. Teaching experience shows a stronger association with competence than formal educational attainment, with incremental increases in competence scores observed across additional semesters of experience. While teachers holding a bachelor's degree demonstrate higher competence scores than those without, these results should be interpreted with caution due to the study's limited sample size and single-site design. Rather than offering broad generalizations, the findings provide context-specific insights that may inform future research and localized professional development initiatives in similar educational settings.

**Keywords:** *Education Level, Teaching Experience, Teacher Competence, Rural Islamic School*

## Abstrak:

Penelitian ini mengeksplorasi hubungan simultan dan parsial antara tingkat pendidikan guru dan pengalaman mengajar dengan kompetensi guru secara keseluruhan dalam konteks satu sekolah dasar Islam perdesaan. Penelitian menggunakan desain survei kuantitatif dengan sampel jenuh sebanyak 30 guru pada tahun ajaran 2024/2025. Data dikumpulkan melalui kuesioner kompetensi guru yang telah divalidasi serta data institusional mengenai tingkat pendidikan dan pengalaman mengajar. Analisis statistik deskriptif dan regresi berganda dilakukan setelah uji asumsi standar menunjukkan kelayakan model. Hasil penelitian menunjukkan bahwa tingkat pendidikan dan pengalaman mengajar guru berhubungan secara signifikan dengan kompetensi guru, dengan kontribusi bersama sebesar 60,1% terhadap variasi kompetensi yang diamati. Pengalaman mengajar menunjukkan hubungan yang relatif lebih kuat dibandingkan dengan tingkat pendidikan formal, dengan peningkatan skor kompetensi yang sejalan dengan bertambahnya masa pengalaman mengajar. Meskipun guru yang memiliki kualifikasi sarjana menunjukkan skor kompetensi yang lebih tinggi dibandingkan dengan yang tidak, temuan ini perlu diinterpretasikan secara hati-hati mengingat ukuran sampel yang terbatas dan desain penelitian yang hanya mencakup satu lokasi. Oleh

karena itu, hasil penelitian ini tidak dimaksudkan untuk generalisasi luas, tetapi memberikan wawasan kontekstual yang dapat menjadi dasar bagi penelitian lanjutan serta pengembangan profesional guru pada konteks pendidikan yang sejenis.

**Kata Kunci:** *Tingkat Pendidikan, Pengalaman Mengajar, Kompetensi Guru; Sekolah Islam Pedesaan*

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## INTRODUCTION

Education is a dynamic and continuously evolving process that shapes human development and national progress. In Indonesia, educational development remains constrained by persistent disparities in infrastructure, teacher quality, curriculum implementation, and access across regions (Lutfauziah et al., 2024; Meilianti et al., 2021; Williams & Tierney, 2023). Among these challenges, the gap in teacher competence between urban and rural schools constitutes a structural problem with direct implications for instructional quality and student learning outcomes. Teachers in urban areas generally benefit from stronger institutional support and professional development opportunities. In contrast, their rural counterparts often face limited resources, restricted access to continuous learning, and institutional capacity constraints, conditions that exacerbate educational quality inequality (Syzydykbayeva et al., 2025).

These disparities are particularly pronounced within Indonesia's Islamic education system, where a substantial proportion of students are educated in madrasah under the administration of the Ministry of Religious Affairs. National reports from both the Ministry of Religious Affairs and the Ministry of Education consistently indicate that gaps in teacher qualifications and professional readiness are more evident in madrasahs, especially in rural *Madrasah Ibtidaiyah*. Many teachers in these settings remain in transitional stages of completing undergraduate education or professional certification, reflecting enduring structural barriers such as geographic isolation, limited access to higher education institutions, uneven distribution of training programs, and weak policy implementation at the local level.

Within the national regulatory framework, Law Number 14 of 2005 on Teachers and Lecturers mandates that teachers demonstrate pedagogical, professional, social, and personal competencies supported by appropriate academic qualifications. While this regulation establishes a clear normative standard, its implementation has proven uneven across educational contexts (Fauzi et al., 2024; Rinawati, 2022; Zaini & Fahmi, 2023). Evidence from policy evaluations suggests that regulatory effectiveness is shaped not only by legal mandates but also by institutional capacity, governance arrangements, and contextual constraints. In rural *Madrasah Ibtidaiyah*, these constraints are intensified by administrative separation from the general education system and limited access to state-supported professional development, resulting in a persistent gap between regulatory expectations and actual teacher competence.

Beyond formal academic qualifications, teaching experience plays a critical role in competence development. Formal education provides theoretical and disciplinary foundations, whereas sustained teaching experience enables adaptive expertise, contextual problem-solving, and reflective practice. International Research underscores this complementary relationship. Studies from Ghana show that higher teacher qualifications are associated with improved instructional interactions, yet their impact is mediated by experiential factors such as self-efficacy (Ntarmah & Yaro, 2025). Similarly, Research from European contexts demonstrates that pedagogical competence develops most effectively when academic preparation is integrated with reflective practice, problem-based learning, and interactive instructional approaches (Adejumo et al., 2021; Prashar, 2024).

However, findings from secular and Western educational systems cannot be directly transferred to rural Islamic elementary schools. Differences in institutional missions, governance structures, cultural expectations, and resource availability limit the applicability of these models to *Madrasah Ibtidaiyah*. While European studies highlight the effectiveness of digital scaffolding, structured induction, and instructional innovation in enhancing teacher readiness (Bernsteiner et al., 2025; Cañadas, 2023; Cuddy et al., 2025), such approaches presuppose infrastructural stability and institutional support that are often absent in rural Islamic schools (Dai et al., 2025; et al., 2025). This limitation is further compounded by unequal access to digital resources and institutional support, which continues to disadvantage rural teachers in developing professional competence in the digital era.

Despite extensive Research on teacher competence, existing studies largely examine education level and teaching experience as separate predictors of teacher performance. What is already well established is that both factors independently contribute to competence across diverse educational systems (Diamond & Bulfin, 2025; Dogan et al., 2025; Haq et al., 2022). What remains insufficiently understood is how these factors interact simultaneously within rural Islamic elementary schools operating under persistent structural constraints. This gap is not only empirical but also theoretical, as dominant models of teacher competence have largely been derived from secular and urban educational environments. Although studies provide insights into teacher qualification and induction systems, they do not address the combined Influence of academic level and teaching experience within religious-based or rural schooling contexts.

This study addresses this gap by examining the joint Influence of teachers' education level and teaching experience on overall teacher competence within a rural *Madrasah Ibtidaiyah* in Indonesia. The contribution of this Research lies in its contextual and population-based focus rather than methodological novelty. By providing empirical evidence from a rural Islamic elementary school that remains underrepresented in the global discourse on teacher competence, this study extends theoretical assumptions derived from secular, urban settings. Grounded in experiential learning theory, which emphasizes competence development through cycles of experience and reflection, the findings are expected to inform policy discussions on balancing investments between strengthening formal

academic qualifications and enhancing experience-based professional development.

## RESEARCH METHODS

This study employed a quantitative survey design to examine the relationships between teachers' education level, teaching experience, and overall teacher competence (Pregoner, 2025). The design was chosen to allow for systematic measurement of associations among variables within a clearly defined institutional context. The study was conducted at Madrasah Ibtidaiyah (MI) Miftaahussalaam, Bengkulu Province, during the 2024/2025 academic year using a cross-sectional approach that captured teachers' professional characteristics and competence at a single point in time.

The study population comprised all teachers actively employed at the madrasah during the Research period, including classroom teachers and those holding additional administrative responsibilities. Given the small, bounded population, a saturated sampling strategy was used, including all teachers as respondents. This approach was considered appropriate for institutional-level analysis and eliminated sampling bias within the site. Nevertheless, the small population size limits statistical inference, and the findings are intended to provide context-specific insights rather than broad generalizations.

Teacher competence was measured using a structured questionnaire developed based on the competency framework articulated in the Indonesian Teacher and Lecturer Law and relevant regulations governing teacher professionalism in basic education. The instrument operationalized four core domains of competence—pedagogical, professional, social, and personal—consistent with national policy standards applicable to Madrasah Ibtidaiyah teachers. Items were formulated to reflect instructional planning, classroom implementation, professional responsibility, interpersonal engagement, and reflective practice. Responses were recorded on a five-point Likert scale ranging from strong disagreement to strong agreement. Prior to data collection, the instrument underwent expert-based content validation to ensure conceptual alignment with the MI context, followed by reliability testing, which indicated satisfactory internal consistency.

Primary data were collected through self-administered questionnaires distributed directly to teachers during school hours. Data collection procedures were strictly quantitative. The researchers' informal clarifications during distribution were limited to explaining questionnaire items and did not constitute qualitative data collection. Secondary data on teachers' formal education and teaching experience were obtained from official school administrative records to ensure accuracy and consistency.

Teachers' educational level was operationalized using an ordinal coding scheme that reflects the hierarchical structure of academic qualifications, thereby preserving information richness across different levels of attainment. Teaching experience was measured as the cumulative length of service in formal teaching roles, as recorded in institutional documentation. This operationalization was intended to capture experiential exposure to instructional practice rather than

episodic involvement in teaching.

Data analysis proceeded in two stages. Descriptive analysis was first conducted to summarize the distributional characteristics of teacher competence, education level, and teaching experience within the institution (Mulisa, 2022). Inferential analysis was subsequently performed using multiple linear regression to examine the partial and simultaneous associations between the independent variables and overall teacher competence. Given the limited sample size, the regression analysis was interpreted cautiously, with emphasis placed on the direction and relative strength of associations rather than on predictive generalization. Classical assumption checks were conducted to assess model adequacy, and the analytical results were treated as exploratory evidence within a bounded context.

Ethical considerations were addressed throughout the Research process. Participation was voluntary, informed consent was obtained from all respondents, and anonymity and confidentiality were ensured. The researchers positioned themselves as external observers with contextual familiarity but no institutional authority, thereby minimizing power imbalance and reducing the likelihood of socially desirable responses.

Through this methodological approach, the study offers empirically grounded insights into how formal education and teaching experience relate to teacher competence within a rural Islamic elementary school. While the small sample size limits the scope of inference, the methodological transparency and contextual alignment enhance the credibility and relevance of the findings for understanding teacher competence in under-researched educational settings.

## RESULTS AND DISCUSSION

### Results

#### *Descriptive Statistics*

Before testing the hypotheses, descriptive statistics were used to summarize the data's main characteristics. The variables include education level (X1), teaching experience (X2), and teacher competence (Y).

**Table 1. Descriptive Statistics of Research Variables**

Variable	Mean	Median	Min	Max	Std. Dev.	Skewness	Kurtosis	Description
Education Level (X1)	0.77	1	0	1	0.43	-1.261	2.59	Majority of teachers hold a bachelor's degree (S1)
Teaching Experience (X2)	11.5	10.5	1	31	8.585	0.638	2.129	Average teaching experience is 11 semesters
Teacher Competence (Y)	73.6	74	59	83	6.055	-0.819	2.955	Teacher competence is categorized as good

Source: SPSS version 26 Output

The descriptive analysis shows that 77% of teachers have completed a bachelor's degree (S1). The average teaching experience is 11 semesters, with competence scores indicating that teachers fall within the "good" category.

### **Model Feasibility Test**

The classical assumption tests confirm that the regression model is robust: residuals are normally distributed ( $p = 0.872$ ), there is no multicollinearity ( $VIF = 1.10$ ), no heteroscedasticity ( $p > 0.05$ ), and no autocorrelation ( $\text{Chi-square} = 0.0569$ ).

### **Regression Analysis**

The regression equation obtained is:

$$Y = 65.049 + 5.757X_1 + 0.360X_2 + \varepsilon$$

Where:

$Y$  = Teacher Competence

$X_1$  = Education Level (0 = below S1, 1 = S1)

$X_2$  = Teaching Experience (semesters)

Interpretation:

Teachers with S1 qualifications increase competence by an average of 5.757 points compared to non-S1. Each additional semester of teaching experience increases competence by 0.36 points.

### **Determination and Simultaneous Effect**

**Table 2. Summary of Determination and F-Test**

Statistic	Value	Interpretation
$R^2$	0.601	60.1% of the variation in teacher competence is explained by education level ( $X_1$ ) and teaching experience ( $X_2$ )
Adjusted $R^2$	0.549	The regression model is considered adequate
F-Statistic	5.811	F-value exceeds F-table (4.21)
Probability (F)	0.008	Statistically significant ( $p < 0.05$ )

Source: SPSS version 26 Output

The F-test indicates that education level and teaching experience together significantly affect teacher competence.

### **Partial Effects**

**Table 3. Summary of t-Test Results**

Variable	Coefficient	t-Statistic	Sig. (p-value)	Information
Education Level ( $X_1$ )	5.757	2.422	0.022	Significant (+)
Teaching Experience ( $X_2$ )	0.360	3.021	0.006	Significant (+)

Source: SPSS version 26 Output

The results suggest that both education level and teaching experience shape teacher competence. Higher academic preparation contributes to teachers' conceptual and pedagogical understanding, whereas teaching experience supports the development of contextual judgment and instructional adaptability. This pattern indicates that teacher competence emerges through the interaction of formal education and sustained professional practice.

## Discussion

The findings of this study indicate that formal education level is positively associated with teacher competence across the four mandated dimensions – pedagogical, professional, social, and personal – as outlined in Indonesia's Law No. 14/2005 on Teachers and Lecturers. Teachers holding a bachelor's degree demonstrate higher levels of subject-matter mastery and curriculum understanding. This pattern is consistent with Yang et al. (2023), who report that higher academic qualifications are associated with improved instructional capacity, although the strength of this relationship remains context-dependent.

Academic qualifications alone do not fully explain variations in teacher competence. Interpretative insights drawn from field observations at MI Miftaahussalaam Seluma – used in this study as contextual support rather than as analytical data – indicate that formal education may emphasize theoretical mastery more than immediate classroom adaptability. This interpretation aligns with Diamond and Bulfin (2023/2025), who caution that teacher professionalism is often framed in terms of technical compliance, with insufficient attention to reflective practice, collegial learning, and professional care. Importantly, these observations are presented here to contextualize the quantitative findings, not as independent empirical evidence.

More robustly, teaching experience emerges from the regression analysis as a stronger predictor of teacher competence than formal education level. Each additional semester of teaching experience is associated with incremental gains in professional capability, suggesting that competence develops through sustained engagement with classroom realities. This finding is consistent with Stahnke and Stahnke and Gegenfurtner (2025), who show that experienced teachers develop more sophisticated professional vision, and with Abdivalieva and Ogli (2025), who emphasize the role of reflective practice in translating formal knowledge into effective instruction. In the rural context of Bengkulu – where access to advanced training opportunities is limited – on-the-job experience appears to function as a critical mechanism for professional learning.

The relationship between education, experience, and competence is further situated within an institutional environment shaped by leadership and systemic support (Akrim & Umiarso, 2023; Hefniy et al., 2023). Although leadership variables were not directly tested in the statistical model, existing studies provide a relevant interpretative frame. Effective school leadership and academic supervision contribute to improved instructional quality (Dogan et al., 2025; Haq et al., 2022; Jauhari et al., 2025). The creative leadership in Islamic schools can foster instructional innovation and digital collaboration (Knies et al., 2024; Kousar et al., 2023). These studies help explain why experience-based learning may be more effective when supported by conducive organizational conditions, particularly in alignment with SDG 4 on quality education.

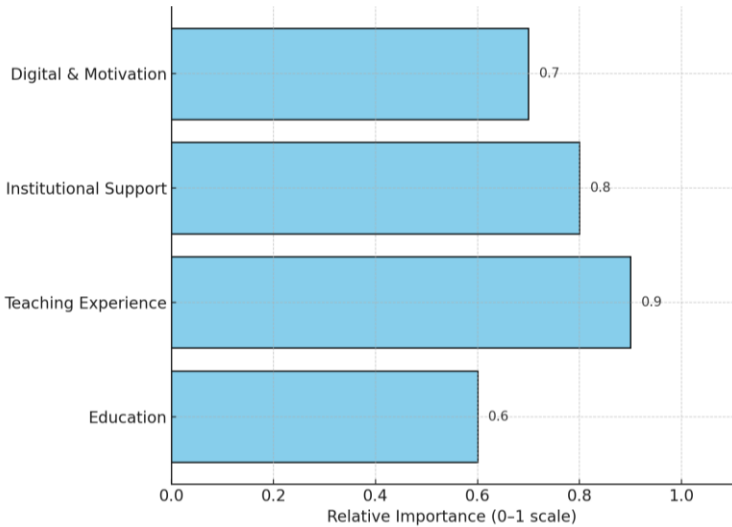
From a policy standpoint, the findings resonate with Nawas et al. (2025), who report that teacher certification in Indonesia improves job satisfaction and reduces student learning anxiety but does not automatically enhance teacher well-being. This suggests that qualification-oriented policies should be complemented by structured, field-based continuous professional development (CPD) (Tuytens

et al., 2023a; Yang et al., 2025). In-service teacher training (PPG) is most effective when closely connected to classroom practice (Lindström et al., 2025; Nirtha et al., 2021; Ntarmah & Yaro, 2025).

While this study focuses empirically on education and experience, broader scholarship highlights additional factors that may Influence teacher competence. Motivation, well-being, and digital competence are frequently identified as relevant dimensions. The importance of mentoring systems in preventing burnout among novice teachers (Nwachukwu, 2024; Purba et al., 2025), while Rasheed et al. (2025) identify digital literacy as a key enabler of instructional effectiveness in rural Islamic schools. AI-supported instruction and TPACK-based professional development can enhance pedagogical effectiveness when accompanied by appropriate technical guidance and ethical safeguards (Robandi et al., 2025; Saadati & Ghorbani, 2024; Samsilayurni et al., 2025). These studies provide important directions for future research, even though such variables were not directly examined in the present model.

Taken together, the findings of this single-site, small-sample study do not seek to overturn established assumptions regarding teacher qualifications. Rather, they add nuance to the view that academic credentials alone determine teacher competence (Tembrevilla et al., 2024; Tojimukhammadovna, 2025). Evidence from this rural Islamic primary school suggests that practical teaching experience, supported by institutional leadership and context-sensitive CPD, plays a particularly salient role in shaping professional competence. This interpretation aligns with international discussions that emphasize integrating human capital development and teacher well-being (Tuytens et al., 2023b; Williams & Sembiante, 2022).

Accordingly, the results suggest that policies aimed at improving teacher quality should balance academic qualification upgrading with experience-based learning, structured mentoring, and supportive school leadership. While the scope of this study is limited, its findings contribute modest empirical insight into ongoing debates on teacher capacity-building in rural and Islamic education contexts, with relevance to SDG 4 and broader sustainable development agendas.



**Figure 1. Global-Local Framework of Teacher Competence Determinants in Rural Islamic Primary Schools**

Figure 1 presents a conceptual synthesis that situates the study's empirical findings within a broader interpretative framework. The model highlights formal education and teaching experience as core determinants of teacher competence, with classroom experience exerting a stronger influence in the observed context. Institutional support—particularly creative leadership and practice-oriented CPD—is conceptualized as an enabling condition rather than a tested predictor. The framework also reflects wider global discussions on digital adaptation, AI integration, and teacher well-being, positioning the Bengkulu case within contemporary international discourse while remaining grounded in the study's empirical scope.

Despite its contributions, this study has several limitations. The small sample size ( $N = 30$ ) and single-site design restrict the generalizability of the findings. The cross-sectional nature of the data also limits the ability to capture longitudinal changes in teacher competence. Future studies should adopt comparative or longitudinal designs across multiple madrasahs to examine how contextual factors—such as leadership styles, resource availability, and digital readiness—moderate the relationship between education, experience, and teacher competence.

At the policy level, national and regional education authorities should complement qualification upgrading with structured, practice-based CPD and mentoring, ensuring that teacher certification enhances not only job satisfaction but also classroom effectiveness and well-being. Schools are encouraged to institutionalize reflective practice, peer observation, and sustained coaching so that accumulated teaching experience continues to function as a primary driver of competence, supported by transformative leadership. Integrating digital literacy and AI-assisted pedagogy into CPD programs, alongside measures to reduce administrative burden and strengthen psychosocial support, may further enhance teacher motivation and retention. In this way, the study contributes cautiously but meaningfully to discussions on SDG 4, emphasizing that sustainable teacher development in Islamic education requires a holistic balance between academic qualifications, experiential learning, technological adaptation, and institutional support.

## CONCLUSION

This study demonstrates that teacher competence in a rural Islamic primary school context is shaped by the interaction of formal education and accumulated teaching experience, with empirical evidence indicating that practical experience exerts a stronger influence than academic qualifications alone. While higher education contributes to mastery of the curriculum and compliance with nationally mandated competence standards, the findings suggest that adaptive classroom competence develops most effectively through sustained professional practice, supported by reflective learning and institutional conditions. The primary scientific contribution of this paper lies in its empirical clarification of the relative weight of education and experience within a rural madrasah setting, thereby adding contextual nuance to broader debates on teacher professionalism and human capital development in support of SDG 4 (Quality Education). At the same time, the study is limited by its small sample size, single-site design, and

cross-sectional approach, which restricts the generalizability and causal interpretation of the results. These limitations point to opportunities for future research employing longitudinal and multi-site designs to examine how leadership, continuous professional development, and digital readiness interact with education and experience to shape teacher competence across diverse Islamic education contexts.

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