

## The Influence of Teacher Working Group Activities (KKG) on Elementary School Teachers' Professional Competence

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### Abstract

Teacher Working Groups (KKG) serve as vital forums for professional collaboration, yet their specific impact requires empirical validation. This study aimed to analyze the influence of KKG activities on the professional competence of elementary school teachers in East Metro District, Lampung Province, Indonesia. Employing a quantitative survey method, data were collected from 72 teachers selected via the Slovin formula and purposive sampling from a population of 251, using a validated Likert-scale questionnaire. Data were analyzed using simple linear regression, t-tests, and coefficient of determination. Results revealed that KKG activities significantly and positively affect professional competence ( $t = 5.692$ ,  $p < 0.001$ ), with the regression equation  $Y = 29.940 + 0.825X$  indicating each unit increase in KKG activity raises competence by 0.825 points. KKG activities contributed 31.6% ( $R^2 = 0.316$ ) to professional competence, while other factors accounted for 68.4%. In conclusion, KKG plays a crucial role in enhancing teachers' professional competence, highlighting the importance of fostering collaborative forums to support continuous educator development.

### Keywords

Teacher Working Group (KKG); professional competence; elementary school teachers; professional development

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## 1. INTRODUCTION

Quality education is the main foundation for developing superior and competitive human resources. At the elementary education level, teachers play a central role as the frontline in implementing the learning process, and their quality directly determines the quality of educational output. In Indonesia, Law Number 14 of 2005 mandates that teachers are professional learning agents who must meet four competency standards: pedagogical, personality, social, and professional (Government of Indonesia, 2005). Among these, professional competence is essential as it relates directly to the mastery of subject matter in a broad, in-depth, and sustainable manner. According to the Ministry of National Education of Indonesia (2007), indicators of professional competence include the mastery of subject matter, creative development of learning materials, utilization of information and communication technology (ICT), and continuous professional development. A professional teacher must not only deliver material but also develop resources and conduct continuous reflection.



However, teacher professional competence in Indonesia, particularly at the elementary level, requires significant improvement. The results of the Programme for International Student Assessment (PISA) and the Trends in International Mathematics and Science Study (TIMSS) consistently place Indonesia at the bottom, indicating major challenges in learning quality, with suboptimal teacher professional competence as a root cause. Consequently, improving this competence is a national priority. One long-standing strategy to achieve this is the Teacher Working Group (KKG, or *Kelompok Kerja Guru*), a professional forum for elementary school teachers. Formed based on school clusters, the KKG aims to facilitate the sharing of experiences, knowledge, and skills to solve learning problems collaboratively through discussions, workshops, and the development of learning tools (Directorate General of Teacher Training and Development, 2010; Sukirman, 2020).

Theoretically, the effectiveness of the KKG can be explained through Vygotsky's (1978) social constructivism theory, which posits that knowledge development occurs through social interaction within the zone of proximal development (ZPD)—the space where individuals learn from more competent peers in a collaborative process. Furthermore, the KKG aligns with the concept of a professional learning community (PLC) (DuFour, 2004). A PLC emphasizes ensuring student learning, fostering a collaborative culture, and focusing on results. In the Indonesian context, the KKG functions as a PLC where teachers learn together, analyze student data, and conduct collective reflection.

Despite being a national program, the effectiveness of the KKG in improving professional competence yields diverging findings in current research, highlighting controversial hypotheses regarding its actual impact. Some studies indicate significant obstacles, reporting that KKG effectiveness is often hampered by limited time, uneven participation, and low commitment (Susanto et al., 2024). Furthermore, Putri (2025) found that the effectiveness level of KKG on teacher professional competence was only 31%, falling into the weak to moderate category. Conversely, contrasting findings suggest a much stronger impact; for instance, Arifin et al. (2025) reported that KKG activities contributed 75.6% to teacher performance in a different district. These diverging results highlight the need for further empirical investigation across various educational contexts to understand the true impact of KKG activities.

To address this gap, this study aims to empirically analyze the influence of KKG activities on the professional competence of elementary school teachers in East Metro District, Metro City, Lampung Province, Indonesia. This developing urban area, comprising 13 elementary schools and 251 teachers with diverse school sizes, provides a representative context for examining these dynamics. Briefly, the principal conclusions of this work indicate that KKG activities have a significant and positive influence on teachers' professional competence, contributing to 31.6% of the competence variance. Ultimately, this

study confirms that the KKG, functioning as a collaborative forum, plays a crucial role in enhancing teacher quality, thereby supporting the broader goal of improving national education standards.

## 2. METHOD

This study employed a quantitative approach with an ex-post facto or causal-comparative design. This design was chosen because the researcher did not manipulate the variables but looked at the causal relationship that has occurred naturally between the independent variable (KKG activities) and the dependent variable (teacher professional competence). The population of this study was all public and private elementary school teachers in East Metro District, Metro City, Lampung Province. Based on data from the Metro City Education and Culture Office, the number of teachers in East Metro District is 251 people, spread across 13 schools (10 public elementary schools and 3 private elementary schools). The sample size was determined using the Slovin formula with an error tolerance of 10% ( $\alpha = 0.10$ ), resulting in 72 respondents. The calculation is as follows:

$$n = N / (1 + N e^2) = 251 / (1 + 251 \times 0.10^2) = 251 / 3.51 \approx 71.5 \text{ (rounded to 72).}$$

The sampling technique used was purposive sampling, where the sample is selected based on certain considerations relevant to the research objectives. The inclusion criteria in this study were: (1) being a classroom teacher or subject teacher at public or private elementary school in East Metro District; (2) having a minimum of 1 year of work experience; (3) actively participating in KKG activities for at least the last 6 months; and (4) willing to be a respondent.

This study involved two variables: (1) independent variable (X): Teacher Working Group (KKG) activities, defined as a series of professional activities carried out by teachers within the KKG forum, including attendance and participation in meetings, discussions on solving learning problems, joint development of learning tools, participation in workshops/training, and professional collaboration with colleagues; and (2) dependent variable (Y): Teacher professional competence, measured through indicators of mastery of subject matter, mastery of competency standards and basic competencies, creative development of learning materials, utilization of technology in learning, and continuous professional development.

The main instrument was a questionnaire with a 5-point Likert scale (Strongly Agree = 5 to Strongly Disagree = 1). Before use, the questionnaire was tested on 20 respondents outside the sample. The validity test used Product Moment correlation with r-table of 0.444. Of the 18 statement items for KKG activities, 17 were declared valid and 1 item (number 12) was invalid ( $r\text{-count} = 0.221 < 0.444$ ). The invalid item was removed from the final instrument. The reliability test using Cronbach's Alpha resulted in a value of 0.960, indicating that the instrument is very reliable.

Data were collected by distributing printed questionnaires directly to 72 respondents. The

researcher first took care of permits to the Metro City Education Office and each school principal. The questionnaire was filled out by respondents at an agreed time and collected back within a maximum of 3 days. The questionnaire return rate was 100% because the researcher provided direct assistance and reminders.

Data analysis was carried out in two stages. First, prerequisite tests included the normality test using the Kolmogorov-Smirnov test (data is normally distributed if  $p \geq 0.05$ ) and the linearity test using the Deviation from Linearity test in ANOVA (relationship is linear if  $p > 0.05$ ). Second, hypothesis testing used simple linear regression to determine the form of the relationship ( $Y = a + bX$ ), the t-test to test the significance of the partial effect, and the coefficient of determination ( $R^2$ ) to determine the contribution of KKG activities to teacher professional competence. All statistical analyses were performed with a significance level of  $\alpha = 0.05$  using JASP software.

### **3. FINDINGS AND DISCUSSION**

The results obtained from the research have to be supported by sufficient data. The research results and the discovery must be the answers, or the research hypothesis stated previously in the introduction part.

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##### **3.1.1. Normality Test**

The normality test was performed on the regression residuals using the Kolmogorov-Smirnov test. The results showed that the Kolmogorov-Smirnov D statistic was 0.064. The Asymp. Sig. (2-tailed) value was 0.200 ( $p > 0.05$ ). The Monte Carlo Sig. (2-tailed) value was 0.647 ( $p > 0.05$ ). Thus, the regression model residuals are normally distributed, so the normality assumption is met.

##### **3.1.2. Linearity Test**

The linearity test was conducted to determine whether the relationship between KKG activities (X) and teacher professional competence (Y) is linear using the Deviation from Linearity test in ANOVA.

The analysis results showed that the significance value for Deviation from Linearity was 0.612 ( $p > 0.05$ ). Therefore,  $H_0$  is accepted, meaning the relationship between X and Y is linear. This assumption is met.

### 3.2. Results of Hypothesis Testing

After the prerequisite tests were met, hypothesis testing was conducted.

#### 3.2.1. Simple Linear Regression Equation

Simple linear regression analysis was performed to determine the form of the relationship between KKG activities (X) and teacher professional competence (Y). The results are presented in Table 1.

**Table 1.** Results of Simple Linear Regression Analysis X on Y

Variable	Coefficient (B)	Std. Error	t-count	Sig.
Constant	29.940	5.457	5.487	< 0.001
KKG Activities (X)	0.825	0.145	5.692	< 0.001

Based on Table 1, the simple linear regression equation is:

$$Y = 29.940 + 0.825 X$$

Interpretation: (1) Constant (a) = 29.940 means that if KKG activities are zero, the teacher professional competence score is 29.940; (2) Regression coefficient (b) = 0.825 means that each one-unit increase in the KKG activity score is followed by an increase in the teacher professional competence score of 0.825. The positive coefficient indicates a positive/one-way relationship between KKG activities and teacher professional competence.

#### 3.2.2. t-test (Partial Significance Test)

The t-test was conducted to test the hypothesis  $H_1$ : there is a positive and significant influence of KKG activities on teacher professional competence. The t-table value at  $df = 70$  and  $\alpha = 0.05$  is 1.994. The results showed that the t-count was  $5.692 > t\text{-table}$  (1.994) and the significance value was  $p < 0.001 < 0.05$ . Thus,  $H_0$  is rejected and  $H_1$  is accepted, meaning there is a positive and significant influence of Teacher Working Group (KKG) activities on the professional competence of elementary school teachers in East Metro District.

#### 3.2.3. Coefficient of Determination ( $R^2$ )

The coefficient of determination is used to determine the magnitude of the contribution of the independent variable to the dependent variable. The analysis results are presented in Table 2.

**Table 2.** Coefficient of Determination (R<sup>2</sup>)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.562	0.316	0.306	21.947

Based on Table 2, the R Square (R<sup>2</sup>) value is 0.316 or 31.6%. This shows that KKG activities contribute 31.6% to the professional competence of elementary school teachers in East Metro District. The remaining 68.4% is influenced by other factors outside the KKG activity variable not examined in this study, such as principal academic supervision, teacher work motivation, teaching experience, teacher certification, school organizational climate, principal leadership, learning facilities, and others.

### *Discussion*

The results of this study conclusively demonstrate that Teacher Working Group (KKG) activities have a positive and significant effect on the professional competence of elementary school teachers in East Metro District, Metro City, Lampung. This finding provides empirical evidence that KKG as a collegial professional development forum indeed plays an important role in enhancing teachers' professional abilities. Teachers who actively participate in KKG activities tend to have better professional competence compared to teachers who are less or inactive.

This finding aligns with the theory of social constructivism developed by Vygotsky (1978). According to Vygotsky, learning and cognitive development occur through social interaction within the zone of proximal development (ZPD). In the KKG context, teachers with different levels of competence interact, share knowledge, and help each other in solving learning problems. The scaffolding provided during KKG interactions enables teachers to achieve higher levels of competence than if they learned alone (Susanto et al., 2024).

The regression equation  $Y = 29.940 + 0.825X$  indicates that every increase in one unit of KKG activity score will increase teacher professional competence by 0.825. This figure is substantial, indicating that every additional increase or improvement in the quality of KKG activities provides a meaningful impact on improving teacher professionalism.

The findings of this study are very consistent with the research results of Putri (2025), who examined the effectiveness of implementing KKG programs on the professional competence of Madrasah Ibtidaiyah teachers in Sidenreng Rappang Regency. That study found that the effectiveness level of KKG on teacher professional competence was 31%, with the remaining 69% influenced by other variables. This figure is almost identical to the findings of this study which showed a contribution of 31.6%. This consistency is interesting because it shows that in two different locations (South Sulawesi

and Lampung) with different characteristics, the contribution of KKG to teacher professional competence is in the same range, around 30-32%.

The research by Susanto, Hartinah, and Sudiby (2024) in Jatinegara District, Tegal Regency also found that KKG activities had a positive effect on teacher professionalism with a p-value of 0.00 ( $p < 0.05$ ). This finding confirms that statistically, the influence of KKG is indeed significant across various regions. Similarly, Pebriansyah (2014) who examined the effect of teacher participation in KKG on the professional competence of elementary school teachers also found that participation in KKG significantly affects professional competence.

Meanwhile, research by Juniarti (2026) in Janapria District, Central Lombok, found that KKG acts as a mediator of competency development and supporting agency in strengthening teachers' pedagogical, professional, social, and personality competencies. That research also identified that the main inhibiting factor for KKG effectiveness is the limited mastery of information and communication technology (ICT) among teachers.

However, why does KKG only contribute 31.6%? Several explanations can be offered. First, the quality and intensity of KKG are not yet optimal. Although KKG is carried out regularly, the quality of activities still varies greatly. Some KKG may only be ceremonial, where teachers attend, listen to presentations, and leave without any meaningful follow-up. Activities that are less interactive, less relevant to teacher needs, or do not involve active participation from all members will reduce effectiveness (Juniarti, 2026). Second, teacher participation is uneven. In every KKG activity, not all teachers participate actively. Some teachers attend physically but do not contribute to discussions or activities. Some are often absent for various reasons. Third, time and facility constraints. KKG activities are usually conducted once a month or once every few weeks, with limited duration. This short duration is often insufficient to discuss problems in depth, develop joint products, or conduct meaningful reflection. Fourth, other factors such as principal academic supervision, which in previous research contributed 45.6%, work motivation, teaching experience, teacher certification, and school leadership are likely more dominant in influencing professional competence.

The theoretical implication of this study is that it reinforces social learning theory and social constructivism in the context of teacher professional development in Indonesia. Social interaction in KKG is proven effective, although not as effective as individual supervision. This suggests that combining individual approaches (supervision) and collaborative approaches (KKG) produces a greater impact. This study also provides evidence that the PLC model can be adapted to the context of elementary education in Indonesia through the KKG forum.

#### 4. CONCLUSIONS

The conclusion should answer the objectives of the research and research discoveries. The concluding remark should not contain only the repetition of the results and discussions or abstract. You should also suggest future research and point out those that are underway.

Based on the results of data analysis and discussion, this study concludes that Teacher Working Group (KKG) activities have a positive and significant effect on the professional competence of elementary school teachers in East Metro District, Metro City, Lampung Province. This is evidenced by the t-count value (5.692) > t-table (1.994) and a significance value of  $p < 0.001$ . The regression equation generated is  $Y = 29.940 + 0.825X$ , which means that each one-unit increase in the KKG activity score will be followed by an increase in the teacher professional competence score of 0.825. The contribution of KKG activities to teacher professional competence is 31.6% ( $R^2 = 0.316$ ), while the remaining 68.4% is influenced by other factors outside the KKG activity variable. The correlation between KKG activities and teacher professional competence is 0.562 (moderate and positive). This study confirms that KKG is an effective professional development forum, although there is still room for improvement. KKG that is well-managed, followed by active teacher participation, and supported by adequate policies will contribute optimally to improving teacher professional competence.

For elementary school teachers in East Metro District, it is recommended to increase active participation in every KKG activity, not only physically present but also contribute to discussions, share good practices, and engage in joint development of learning tools. For school principals, it is recommended to provide full support for KKG activities, including providing non-conflicting time with teaching duties, providing comfortable spaces, and providing incentives or awards for active teachers. For the Metro City Education Office, it is recommended to conduct periodic monitoring and evaluation of the quality of KKG implementation in each cluster, organize training for KKG facilitators on effective facilitation techniques and the use of technology, and provide awards for innovative KKG clusters. For future researchers, it is recommended to expand the scope of variables by including mediating and moderating variables, use mixed methods designs, conduct longitudinal research, expand research locations, and test intervention models by designing innovative KKG models.

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