



The Influence of Coaching and Motivation-Based Principal Supervision on the Professionalism of Elementary School Teacher Performance

¹Sri Kusningsih, ²Beni Habibi, ³Yoga Prihatin.

^{1,2,3} Program Studi Magister Pedagogi, Universitas Pancasakti Tegal, Indonesia

Email: srikusningsihabyan@gmail.com

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Abstract

This study aimed to examine how scientific reasoning has been repositioned in educational research in the post-COVID era through a bibliometric review. Bibliographic data were retrieved from the Scopus database, covering journal articles published between 2021 and 2025. A total of 161 articles were analyzed using Biblioshiny and VOSviewer to identify publication trends, country contributions, collaboration patterns, and thematic structures. The results showed a growing scholarly emphasis on scientific reasoning after COVID-19, particularly in relation to student-centered pedagogies, assessment practices, higher-order thinking skills, and technology-enhanced learning environments. Keyword network analysis revealed scientific reasoning as a central research theme interconnected with inquiry-based learning, problem-based learning, critical thinking, and digital learning contexts. Overlay visualization further indicated emerging research directions involving artificial intelligence and hybrid learning environments. Overall, the findings demonstrated a clear repositioning of scientific reasoning as a foundational competency in post-COVID educational research and provided insights to inform future studies and instructional innovations.

Keywords: *coaching-based supervision, motivation, teacher performance professionalism*

INTRODUCTION

Education is a planned process designed to create a learning environment that allows students to actively develop their potential. One crucial factor in educational success is the teacher, as they play a direct role in creating quality learning. Teacher quality is reflected in their professional performance, namely their ability, responsibility, and commitment to carrying out their duties effectively and efficiently.

However, in reality, the professional performance of elementary school teachers is still suboptimal. Based on initial observations in several elementary schools, it was found that some teachers still do not maximize their implementation of active, innovative, and enjoyable learning. Some teachers still tend to focus on delivering material, do not reflect on their teaching outcomes, and do not fully utilize learning media creatively. This indicates that the level of teacher professionalism still needs to be improved.

One factor suspected of contributing to low teacher professionalism is the principal's ineffective supervision. In practice, supervision often remains instructive and administrative in nature, resulting in teachers feeling supervised rather than guided. To address this, a coaching-based supervision approach emerged, in which the principal acts as a coach, helping teachers discover their potential, reflect, and develop independent performance development plans. Coaching-based supervision encourages collaborative and empowering two-way communication, rather than simply controlling.

Previous research, including "Supervision and Motivation Have a Significant Effect on Teacher Performance," does not explain the coaching-based supervision model, even though it is relevant to modern teacher development. Zuhairi, A. (2022). "The Effect of Principal Supervision and Work Motivation on Elementary School Teacher Performance." *Journal of Elementary Education Management*, 7(2), 115–124.

Research conducted by Himmatulhaq (2021), published in the *Journal of Educational Administration and Management*, entitled "The Effect of Principal Supervision on Junior High School Teacher Performance," shows that principal supervision has a 33.6% impact on teacher performance. This research confirms that the principal's role in supervision significantly contributes to improving teacher performance. However, the supervision model studied remains conventional and has not adopted a coaching-based supervision approach that emphasizes empowerment, reflection, and collaboration in teacher development.

Commitment, competence, and motivation have a positive and significant influence on vocational high school teacher performance, according to Prihatinni (2022) in the journal "The Influence of Commitment, Competence, and Motivation on Vocational High School Teacher Performance." *Journal of Vocational Education and Learning*, 4(1), 45–53. However, this study has not yet addressed the principal's supervision or coaching-based development models as factors that strengthen teacher motivation and professionalism.

Based on a review of several previous studies, it can be concluded that research on the influence of principal supervision and work motivation on teacher performance or professionalism has been conducted extensively. However, most have focused on conventional supervision and have not yet examined coaching-based supervision models that emphasize collaborative and reflective mentoring. Furthermore, research combining coaching-based supervision and motivation on the professionalism of elementary school teachers is still very limited. Therefore, this study has a research gap in the supervision model, the variables used, and the context of both public and private elementary education units.

The purpose of this study is to determine the significant influence of coaching-based supervision on teacher professionalism. Identifying the significant influence of coaching-based supervision on teacher professional performance. Understanding the impact of coaching-based supervision and motivation on teacher professional performance.

According to Carl D. Glickman (1981; 2010), academic supervision is a series of professional development activities aimed at helping teachers improve their teaching abilities consciously and reflectively. He introduced the Developmental Supervision model, a supervision approach tailored to the teacher's level of professional development. According to Glickman (2010:25), "Supervision is an assistance in the development of better teaching through cooperative activities between supervisor and teacher."

Arthur Costa and Robert Garmston (2002) introduced the concept of Cognitive Coaching, which became the main foundation for the development of coaching-based principal supervision. Robbins & Alvy's approach reinforces Costa and Glickman's view that modern supervision must shift from inspection to inspiration—focusing on teacher development, not simply supervision

METHOD

According to Sugiono (2019), quantitative, qualitative, and R&D research methods are used. Inferential quantitative research uses numerical data to analyze relationships between variables, test hypotheses, and draw conclusions applicable to the population through inferential statistical techniques. This means that the research results not only describe the data but also generalize the findings from the sample to the population based on statistical calculations.

This research was conducted from July 1, 2025, to January 15, 2026. The research took place in the Taman District Coordinator area, Pemalang Regency. The population in this study was 100 elementary school teachers in the Taman District Coordinator area. This population consisted of teachers at 12 public elementary schools and 3 private elementary schools. From this total population, the researcher took a sample of 80 teachers.

In this study, there are two independent variables: coaching-based supervision (X1) and motivation (X2), while the dependent variable is teacher professionalism (Y).

x₁: Coaching-based supervision

x₂: Motivation

Y: Teacher performance professionalism

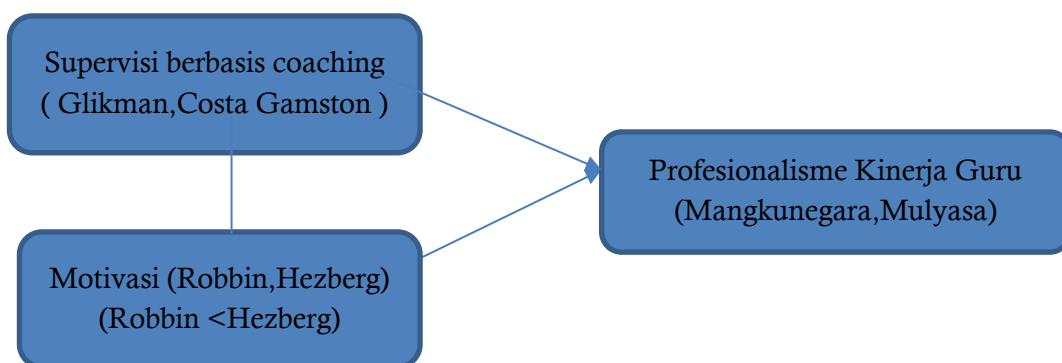


Figure 1. Thinking Framework Diagram

Coaching-based principal supervision provides professional support and guidance that enhances teacher skills. Motivation serves as an internal drive to optimally apply these skills. These two factors collectively enhance teacher professionalism, thereby improving the quality of education.

Quantitative and Inferential.

According to Sugiyono (2019), quantitative, qualitative, and research methods include quantitative, qualitative, and research and development (R&D). Inferential research uses numerical data to analyze relationships between variables, test hypotheses, and draw conclusions applicable to the population through inferential statistical techniques.

Quantitative and Inferential Steps

Determining Research Topics and Variables

- 1) Independent variable (X1): Coaching-based supervision.
- 2) Independent variable (X2): Motivation
- 3) Dependent variable (Y): Teacher professionalism.

Formulating Hypotheses

- 1) There is a positive influence of coaching-based supervision on teacher professionalism. This hypothesis will be tested using statistical analysis (e.g., Pearson correlation or linear regression).
- 2) There is a positive influence of motivation on teacher professionalism. This hypothesis will be tested using statistical analysis (e.g., Pearson correlation or linear regression).
- 3) There is a positive influence of coaching-based supervision and motivation on teacher professionalism. This hypothesis will be tested using statistical analysis using the t-test and F-test.

Determining the Population and Sample

- 1) The population of teachers at public elementary schools in the Ataman sub-district coordinator area, Pemalang Regency, is 100 people.
- 2) Sample: The sample was drawn using Slovin's law.
- 3) To calculate the sample size using the Slovin formula, we need to determine the margin of error (e). Let's use a margin of error of 5% (0.05) as an example. Rumus Slovin adalah:

$$n = \frac{N}{1 + N \cdot e^2}$$

N = 100 (populasi)

e = 0,05 (margin of error 5%)

n = 100 / (1 + 100 * 0,05²)

n = 100 / (1 + 100 * 0,0025)

n = 100 / (1 + 0,25)

n = 100 / 1,25

n = 80

herefore, the required sample size is 80 respondents.

The purposive sampling method aims to ensure the sample is validly representative of the population.

Developing the Research Instrument

A questionnaire was developed to measure the research variables.

- 1) Questions were structured on a Likert scale (1–5).
- 2) Each item was tested for validity (calculated r > table r) and reliability (Cronbach's alpha > 70).

A valid and reliable instrument ensures accurate data collection.

Data Collection

At this stage, the questionnaire was distributed to respondents.

The collected data was then checked for completeness, inputted into the JASP statistical program, and prepared for analysis.

Data Analysis

The collected data was analyzed in several stages: classical assumption tests (normality, heteroscedasticity, autocorrelation, multicollinearity, multiple linear regression), Pearson correlation tests to determine the relationship between variables, and multiple regression tests to determine the effect of variable X on Y. The results of the analysis indicate whether the hypothesis is accepted or rejected.

Drawing Conclusions

Based on the results of statistical tests, researchers draw scientific conclusions about whether there is a significant influence between variables X and Y. The extent of this influence is determined (r-value or regression coefficient).

Research Reporting

The final step is to compile a preliminary research report consisting of: (background, problem statement, objectives), research methodology, research results, conclusions, and recommendations. This report becomes an official document that can be published, used as a basis for policy, or as a reference for further research.

Research Focus

Researchers observed samples and focused on public and private elementary school teachers in the Taman District Coordinator area, Pematang Regency.

RESULTS AND DISCUSSION

Description of Research Data

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	26	32.500	32.500	32.500
Female	54	67.500	67.500	100.000
Missing	0	0.000		
Total	80	100.000		

Source: JASP 0.17.2.0

The number of respondents was 80. Respondents ranged in age from 24 to 59, with a mean of 41, and a median of approximately . The age distribution was relatively moderately varied, with a standard deviation of approximately 10 years. Most respondents were between the ages of 30 and 50.

Prerequisite analysis test

Data validity and reliability

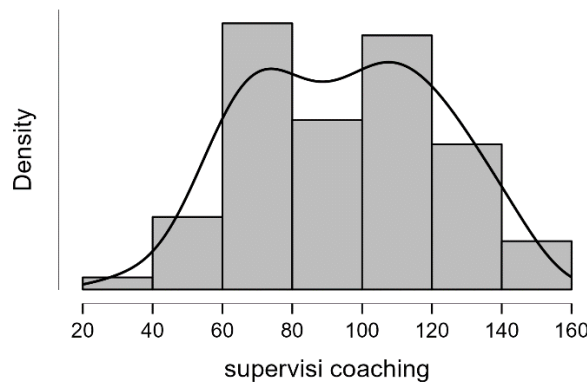
Table 2. Validity and reliability

Variabel	Cronbach's Alpha	Kategori	Validitas	Keterangan
Supervisi Berbasis Coaching Motivasi Guru	0.939	Sangat Reliabel	9 valid, 1 tidak valid	Layak digunakan
Profesionalisme Guru	0.928	Sangat Reliabel	Semua valid	Layak digunakan
	0.946	Sangat Reliabel	Semua valid	Layak digunakan

The results of the Coaching-Based Supervision validity test show that 9 items are valid, and 1 item is invalid. Most items align with the construct being measured. Because most items are valid and reliable, the instrument remains suitable for use after possibly removing the 1 invalid item. All motivation items are valid; all statements accurately measure teacher motivation. This is supported by an α of 0.928, indicating a very good and stable instrument. Similarly, for the teacher performance professionalism item, all items are valid, with an α of 0.946 indicating high validity and reliability.

Normality Test

According to Ghozali (2018) and Sugiyono (2017), data can be considered normally distributed if: The histogram pattern resembles a bell-shaped curve, there are no extreme deviations on the left or right side of the graph, and statistical test results (e.g., Kolmogorov–Smirnov or Shapiro–Wilk) show a significance value >0.05 .



Gambar 1. supervisi coaching

The graph shows histogram bars (in gray) indicating the frequency and extent of coaching supervision over a range of values. The curved black line above them represents the theoretical normal curve (density curve) used as a comparison for the ideal distribution of normal data.

Table 3. Normality test

Descriptive Statistics			
	supervisi coaching	motivasi	profesionalisme
Valid	80	80	80
Missing	0	0	0
Mean	94.905	96.803	101.789
Std. Deviation	27.028	27.580	28.239
Skewness	-0.019	0.198	-0.070
Std. Error of Skewness	0.269	0.269	0.269
Kurtosis	-0.889	-0.894	-0.992
Std. Error of Kurtosis	0.532	0.532	0.532
Shapiro-Wilk	0.977	0.971	0.971
P-value of Shapiro-Wilk	0.162	0.069	0.065
Minimum	32.130	44.405	38.000
Maximum	145.890	151.980	152.040

To determine whether the data were normally distributed, three indicators were used: skewness and kurtosis. The skewness values for the three variables ranged from -0.009, and the kurtosis values ranged from -0.889 to -0.992. According to normal distribution criteria (George & Mallery, 2010), data are considered normal if the skewness and kurtosis values range from -2 to +2. Therefore, all variables in this study were statistically normally distributed. The Shapiro-Wilk test values for the three variables ranged from 0.971 to 0.977, with a p-value (sig) >0.05 (Coaching Supervision = 0.162; Motivation = 0.069; Professionalism = 0.065).

Autocorrelation

Table 4. Autocorrelation test results

Model Summary - profesionalisme							
Model	R	R²	Adjusted R²	RMSE	Durbin-Watson Autocorrelation	Statistic	p
H₀	0.000	0.000	0.000	28.239	0.887	0.134	< .001
H₁	0.973	0.946	0.945	6.637	-0.087	2.173	0.503

Multicollinearity Test

The multicollinearity test is conducted to determine whether there is a deviation from the classical assumption, namely a linear relationship between the independent variables. If the VIF value is <10, multicollinearity is absent, and if the VIF is >10, multicollinearity is present (El Faradis, 2016). Several criteria can be used to detect multicollinearity, including the Tolerance and Variance Inflation Factor (VIF) calculations. Data are considered to pass the multicollinearity test if the VIF value is <10. This can be seen in the statistical data coefficient test results below.

Table 5. Multicollinearity Test Results

Model		Unstandardized	Standard Error	Standardized	t	p	Coefficients	
							Tolerance	VIF
H_0	(Intercept)	101.789	3.157		32.240	< .001		
H_1	(Intercept)	4.417	2.764		1.598	0,079		
	supervisi	0,576	0.080	0,551	10.364	< .001	0,083	8.400
	coaching							
	motivasi	0,133	0.078	0,131	2.451	0.017	0,083	8.400

The table above shows the Constant (Intercept) value. The constant value of 44.17 indicates that if the coaching supervision and motivation variables are held constant (unchanged), then the baseline employee professionalism score is 44.17. However, because the p-value = 0.079 > 0.05, this constant is not statistically significant and therefore does not significantly influence the model.

Heteroscedasticity Test

According to Ghozali (2018), heteroscedasticity results in inefficient regression coefficient estimates and biased standard errors. The heteroscedasticity test aims to examine whether the residual variances in the regression model are unequal from one observation to another. If the residual variances are equal, it is called homoscedasticity; otherwise, it is called heteroscedasticity.

The data is said to meet heteroscedasticity as seen in the data plot below.

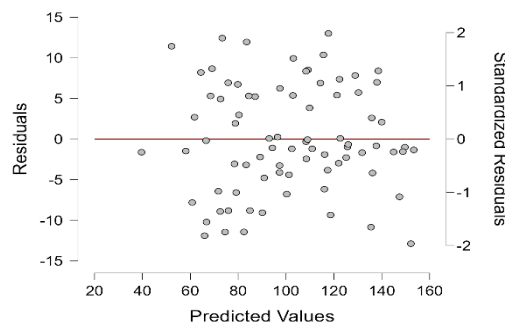


Figure 2. Heteroscedasticity Test Graph

The data shows a distribution above the zero point and below the zero point. This indicates that the data meets the requirements for the heteroscedasticity test.

Observation

Observations in quantitative research are conducted systematically and use measuring tools(instruments), including observation sheets, data checklists, and reports.

Documentation

Documentation in research is a data collection technique that involves tracing, collecting, and analyzing documents or archives relevant to the research problem.

Hypothesis Testing

t-Test

Documentation in research is a data collection technique that involves tracing, collecting, and analyzing documents or archives relevant to the research problem.

Tabel 6. uji t test

Test of Normality (Shapiro-Wilk)			
		W	p
Professionalism	Laki - laki	0.936	0.108
	Perempuan	0.981	0.558
Coaching Supervision	Laki - laki	0.935	0.102
	Perempuan	0.982	0.582
Motivation	Laki - laki	0.950	0.228
	Perempuan	0.977	0.386

Note. Significant results suggest a deviation from normality.

The t-test is used to determine whether each independent variable (X) whether each variable in the regression model has a significant effect on the dependent variable (Y) coaching supervision (X1) has a t-value = 10.364 and $p < 0.01$, meaning it has a positive and significant effect on Y. The higher the coaching supervision, the higher the Y variable (e.g., performance, satisfaction, or others depending on the context). Motivation (X2) has a t-value of 2.451 and $p < 0.017$ is also significant at $\alpha = 0.05$. This means that motivation also has a real positive effect on Y. The intercept is not significant ($p = 0.114$), meaning the constant is not significantly different from zero; however, this does not affect the conclusion about the influence of the independent variable. If the r value is in the range of 0.20-0.40, the relationship is classified as weak to moderate, while if it reaches 0.60 and above the relationship can be categorized as strong to very strong (Sugiyono, 2019). A significance value (p-value) of less than 0.05 ($p < 0.05$) indicates that the relationship is statistically significant, meaning the relationship between teacher motivation and professionalism is not a coincidence but has a strong empirical basis.

Data are normal (Shapiro–Wilk's test is met).

Variance is homogeneous (Levene's test is met). F test / simultaneous test

Table 7. ANOVA simultaneous test

ANOVA						
Model		Sum of Squares	df	Mean Square	F	p
H₁	Regression	59605.089	2	29802.545	676.577	< .001
	Residual	3391.774	77	44.049		
	Total	62996.863	79			

Note. The intercept model is omitted, as no meaningful information can be shown.

The Effect of Coaching-Based Supervision and Motivation on Teacher Performance Professionalism This ANOVA analysis is used to test whether the independent variables (e.g., coaching-based supervision and motivation) simultaneously have a significant effect on the dependent variable. The F value = 676.577 is very significant, indicating the strength of the

overall regression model relationship. A p value <0.01 means it is very significant (because it is smaller than 0.05). Because the p value <0.05 , H1 is accepted and Ho is rejected. This means that there is a significant effect on the independent variable (coaching supervision together with motivation has an effect on teacher performance professionalism).

The coefficient of determination of residual normality and linearity. The results of the multiple linear regression analysis conducted using the JASP program yielded a coefficient of determination (R^2) of 0.946 and an adjusted R^2 of 0.945. This indicates that coaching-based supervision and motivation variables collectively contribute 946% to the variation in teacher professionalism, while the remaining 54% is influenced by other factors not included in the research model. The very small difference between the R^2 and adjusted R^2 values indicates that the regression model used is quite good and stable in explaining the relationship between variables. In the multiple regression model, adjusted R^2 is also used because the normal R^2 tends to increase with the addition of variables, even if the variables are not significant.

Adjusted R^2 provides a more accurate value for describing the model's ability, especially when involving multiple predictors. Based on the results of the regression analysis, the coefficient of determination (R^2) was 0.946 and the coefficient of α was 0.945.

The coaching-based supervision and motivation variables together explained 94.6% of the variation in the teacher professionalism variable, while the remaining 5.4% was explained by other factors not included in this research model.

Degrees of Freedom (df)

A regression df of 2 indicates there are two predictors in the model.

The residual df = 77 = the number of samples (80) minus the number of independent variables (2) and the intercept (1).

The total df = 79 corresponds to the number of respondents minus 1 ($n - 1$).

Sum of Squares and Mean Square Values

The regression sum of squares = 59.605089 = the variation explained by the model.

The residual sum of squares = 3391.774 = the unexplained variation (error).

Mean Squares Regression = 29,802,545, the result of dividing SSR / df_regression.

Mean Squares Residual = 44,049, the result of dividing SSE / df_residual.

The ratio of the two Mean Squares produces an F value of 676,577. Based on the results of the analysis of variance (ANOVA) using the JASP program, the F value obtained was 676,577 with a significance level of $p < 0.001$.

CONCLUSION

Based on the research results and discussion presented previously, conclusions can be drawn from this study regarding the influence of coaching-based supervision and motivation on the professional performance of elementary school teachers in both public and private schools in the Taman District Coordinator, Pemalang Regency.

Recommendations

Schools and education administrators are advised to continuously improve the quality of coaching supervision, which is both guiding and supportive, and to pay attention to teacher motivational factors, both intrinsic and extrinsic, as both factors have the potential to improve teacher professionalism.

Teachers are advised to be more open to supervision activities and actively increase their work motivation to continuously develop professional competencies.

Further researchers are advised to expand the sample size, add other relevant variables such as principal leadership, organizational culture, or job satisfaction, and use more diverse research

designs to obtain a more comprehensive picture of the factors influencing teacher professionalism.

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