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The Influence of Principal Professional Competence on the Quality of Elementary School Education

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Abstract

Background – The quality of education is a critical issue for the Indonesian government, encompassing the quality of input, process, and output. Input quality refers to elements like curriculum and facilities, process quality relates to student comfort with learning services, and output quality is the tangible result of education experienced by students. In Randublatung District, the low quality of education is evident in student achievements in various competitions and the lack of transparency and accountability from school principals in resource management.
Purpose – This study aims to analyze the influence of principals' professional competence on the quality of elementary school education, specifically in the Randublatung District area.
Method/Approach – This research employs a quantitative approach with an *ex post facto* correlational design. The subjects of the study were 207 teachers in Dabin II, Randublatung District, Blora Regency, with a sample of 136 teachers taken from 26 elementary schools. Data were collected through questionnaires and analyzed using validity, reliability, normality, linearity, multicollinearity, and heteroscedasticity tests with the aid of SPSS version 22 for Windows.
Findings – The data analysis results indicate that the highest score for principals' professional competence was 128, the lowest score was 59, with an average (mean) of 95.04, a median of 96.00, and a standard deviation of 18.814. The distribution of principals' professional competence categories was 15.44% in the poor category, 19.12% in the less good category, 22.79% in the fairly good category, 24.26% in the good category, and 18.38% in the very good category. The average (mean) of principals' professional competence (95.04) falls into the "Fairly Good" category.
Conclusions – This study concludes that the professional competence of school principals in Randublatung District is at a "fairly good" level. These findings suggest a potential influence of principals' professional competence on education quality, although the majority of principals' competence levels are still in the mid-range category.
Novelty/Originality/Value – This research contributes to the understanding of the role of principals' professional competence in improving the quality of elementary education within the specific rural context of Indonesia. The findings can serve as a basis for local governments and education stakeholders to formulate more targeted policies and training programs aimed at enhancing principals' competence, which is ultimately expected to impact overall education quality improvement.

Keywords: Quality of Education, Professional Competence, Principal, Education.

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INTRODUCTION

Education is an important element of a person's life and is a strategic aspect for a country (Shavkidinova et al, 2023). The nature of education is complex, dynamic and contextual. Therefore, education is not an easy or simple thing to discuss. The complexity of education illustrates that education is a serious effort because education involves cognitive, affective, and skills aspects that will shape a person as a whole into a whole human being. Referring to the complexity and dynamism of education, experts and observers of education have contributed a lot of their thoughts with the intention of improving the quality and advancing education. The demand for improving the quality of education is part of public accountability (Jerrim & Sims, 2022). This happens because in a world that is increasingly developing globally, it demands that the management of the development sector be carried out transparently and has accountability to the community. The quality of education is seen as necessary to make improvements and changes in various sectors, especially management as part of efforts to improve the quality of education.

The quality of education is the ability of the education system to manage and process education in a quality and effective manner to increase added value in order to produce quality output. The quality of education is a problem that is considered by the Indonesian government (Rafsanjani & Rozaq, 2024). This is evidenced by the role of the Ministry of Education and Culture in expanding and improving the quality of education in Indonesia to date. Quality or quality in the field of education includes the quality of input, process, and output or outcome (Latifi et al, 2021). Input quality is the quality that is seen from various inputs for the learning process to occur, including curriculum, facilities, students and various other things that contribute to the learning process. While the quality of the process is the quality that is seen from the extent to which students feel comfortable with the learning services carried out by teachers with various resources owned by the school (Shofwan et al, 2022). While the quality of the results is the quality of the results of education that are felt primarily by students as a real manifestation of the learning process. The low quality of education in Randublatung District can also be seen from the output of the quality of education on student achievement in various competitions

In the 2022/2023 school year, in the National Science Competency Competition at the Blora Regency level, representatives from Randublatung District in Mathematics ranked 12th out of 16 districts. Meanwhile, in Science subjects they were ranked 14th. In the 2023/2024 school year, representatives from Randublatung District have also not been able to improve their achievements in the National Science Competency event at the Blora Regency level. Representatives from Mathematics ranked 11th and from Science subjects ranked 15th. Educational inputs that are factors that can influence the quality of education (Fomba et al, 2023), can be in the form of: Human resources as school administrators consisting of: (1) Principals, who are teachers who receive additional duties as principals, (2) Teachers, that teachers are professional educators with the main task of educating, teaching, guiding, directing, training, assessing and evaluating students, and (3) Administrative staff. Factors that influence the quality of education include the professional competence of the principal (Darling-Hammond, 2021). According to the Regulation of the Director General of Teachers and Education Staff of the Ministry of Education, Culture, Research and Technology Number 7327/B.B1/HK.03.01/2023 concerning the Principal Competency Model, the principal's professional competence is the principal's ability to develop the vision and learning culture of the educational unit, implement student-centered learning leadership, and manage resources effectively, transparently, and accountably.

Principals in Randublatung District have not been able to develop the vision and learning culture of educational units. In compiling the school's vision and mission, the principal has not facilitated the participation of school residents in compiling the school's vision and mission. Of the 26 principals in Dabin II, Randublatung District, only seven schools involved all school residents in compiling the school's vision and mission. The principal has also not fostered a learning culture for school residents to realize the school's vision and mission. The learning culture is only as a fulfillment of the obligation to complete lesson materials, not focused on achieving the school's vision and mission. The principal has also not been able to implement student-centered learning

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leadership. The principal has not developed a comfortable and safe school environment for school residents. From the results of the pre-survey, data was obtained that only 11 schools have a comfortable and safe school environment for students, such as an attractive learning park, a reading corner in the classroom, and the habit of reading in the morning before learning begins.

The principal has also not been able to manage the resources of the educational unit effectively. In planning school programs, the principal does not utilize the potential that exists in the school to support the achievement of school goals. In managing school resources, the principal does not do it transparently and accountably. There are several factors that influence the improvement of the quality of education, including: (a) Educational goal factors; (b) Educational input factors; (c) Educational management and supervision factors; (d) Educational personnel factors (students, teachers, staff, principals, supervisors); (e) Educational facilities and infrastructure factors (curriculum, facilities, equipment, learning, buildings, workshops, libraries and others); (f) Institutional factors (all parties related to the implementation of education); (g) Factors of science, technology, and art learned by students (Shofwan et al, 2023).

METHODS

This study uses a quantitative correlational research approach and an ex post facto research approach. The population of the study was all elementary school teachers in Dabin II, Randublatung District, Blora Regency, totaling 207 teachers from 26 elementary schools and the research sample was 136 teachers. The sampling technique used proportional random sampling. The research instrument used in data collection was a questionnaire. Using a likert scale, namely to measure teachers' opinions or perceptions of the problems that are research variables. The analysis of this study includes validity analysis, reliability, normality test, linearity test, multicollinearity test, and heteroscedasticity test. Hypothesis testing includes simple regression tests and multiple regression tests using SPSS Version 22.0 for Windows.

RESULTS AND DISCUSSION

Data description is conducted to analyze the research variables by describing the perceptions or responses of 136 respondents, namely Elementary School teachers in Dabin II, Randublatung District. Analysis of the statements submitted in the questionnaire regarding the research variables, namely the quality of education, professional competence of the principal, academic supervision, and teacher work motivation. Descriptive analysis is used to provide an overview of the research results based on respondents' answers. Data is processed using the SPSS version 22 for Windows programs. Data on the quality of education variables consists of 59 statement items. Based on the results of data processing using the SPSS version 22 for Windows program, the highest score was 294, the lowest score was 132, the average (mean) was 210.29; median 205.50; and standard deviation of 40.698. From the table and graph above, it is known that the results of the questionnaire on the quality of education show that 18 people (13.24%) are in the bad category, 36 people (26.47%) are in the less good category, 35 people (25.74%) are in the fairly good category, 32 people (23.53%) are in the good category, and 15 people (11.03%) are in the very good category. The average (mean) of the education quality variable data is 210.29. The mean value is in the class interval 197 - 229 so it is in the "Quite Good" category.

The professional competence variable data of the principal consists of 26 statement items. Based on the results of data processing using the SPSS version 22 for Windows program, the highest score was 128, the lowest score was 59, the average (mean) was 95.04; median 96.00; and standard deviation of 18.814. From the table and graph above, it is known that the results of the questionnaire on the professional competence of the principal showed that 21 people (15.44%) were in the bad category, 26 people (19.12%) were in the less good category, 31 people (22.79%) were in the fairly good category, 33 people (24.26%) were in the good category, and 25 people (18.38%) were in the very good category. The average (mean) of the professional competence variable data of the principal was 95.04. The mean value is in the class interval 87 - 100 so that it is in the "Quite Good" category.

The education quality variable consists of 59 statements divided into 3 dimensions, namely: (a) education quality input with 26 statements, (b) education quality process with 22 statements, (c) education quality output with 11 statements. Based on the respondent questionnaire data, the results of the factor analysis test on the education quality variable are as follows:

Table 1. Results of Factor Analysis of Education Quality Variables Communalities

	Initial	Extraction
Education Quality Input	1.000	.998
Education Quality Process	1.000	.990
Education Quality Output	1.000	.985

Extraction Method: Principal Component Analysis.

Based on the table of test results of the factor analysis of the quality of education variables, it was obtained that the input dimension of quality of education gave the largest contribution (Rodrigues et al, 2021), namely 0.998, and the output dimension of quality of education gave the smallest contribution (Bartholomew et al, 2021), namely 0.985. This is in accordance with the reality presented in the background of the problem that the output of quality of education on student achievement in various competitions. In the 2022/2023 school year, in the National Science Competency competition at the Blora Regency level, representatives from Randublatung District in Mathematics were ranked 12th out of 16 districts. Meanwhile, in the Science subject, they were ranked 14th. In the 2023/2024 school year, representatives from Randublatung District have also not been able to improve their achievements in the National Science Competency event at the Blora Regency level. Representatives from Mathematics subjects were ranked 11th and from Science subjects were ranked 15th.

The principal's professional competency variable consists of 26 statements divided into 3 dimensions, namely: (a) development of the vision and learning culture of educational units with 9 statements, (b) student-centered learning leadership with 9 statements, (c) effective management of educational unit resources with 8 statements. Based on the respondent questionnaire data, the results of the factor analysis test on the principal's professional competency variable are as follows:

Table 2. Results of Factor Analysis of Principal Professional Competence Variables Communalities

	Initial	Extraction
Development of vision and learning culture of educational units	1.000	.858
Student-centered learning leadership	1.000	.941
Effective management of educational unit resources	1.000	.870

Extraction Method: Principal Component Analysis.

Based on the table of results of the factor analysis test of the principal's professional competence variable, it was obtained that the dimension of student-centered learning leadership gave the largest contribution (Alanoglu, 2025), namely 0.941, and the dimension of developing the vision and learning culture of the educational unit gave the smallest contribution (Amtu et al, 2021), namely 0.858. This is in accordance with the reality presented in the background of the problem that in compiling the school's vision and mission, the principal has not facilitated the participation of school residents in compiling the school's vision and mission. Of the 26 principals in Dabin II, Randublatung District, only seven schools involved all school residents in compiling the school's vision and mission. The principal has also not fostered a culture of learning for school residents to realize the school's vision and mission. The culture of learning is only as a fulfillment

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of the obligation to complete lesson materials, not focused on achieving the school's vision and mission.

The data normality test aims to determine whether the distribution of research data is normal or not (Khatun, 2021). In this study, the normality test was carried out using the Statistical Package for Social Science (SPSS) 22 based on probability. The Normality Test Formula used is Kolmogorov Smirnov. The basis for making decisions about whether the distribution is normal or not can be done based on probability, namely: If the probability> 0.05 then the distribution of the population is normal, but if the probability <0.05 then the population is not normally distributed. Based on the table above, the Asymp. Sig. (2-tailed) value of the education quality variable is 0.197. The Asymp. Sig. (2-tailed) value of the education quality variable shows results greater than 0.05. These results indicate that the data on the education quality variable is normally distributed. Based on the table above, the Asymp. Sig. (2-tailed) value of the principal's professional competence variable is 0.068. The Asymp. Sig. (2-tailed) value of the principal's professional competence variable shows results greater than 0.05. These results show that the data on the principal's professional competency variables are normally distributed.

The results of the linearity test of the principal's professional competence on the quality of education obtained a Deviation from Linearity value of 0.181. This value indicates the Deviation from Linearity> significance level, namely 0.181> 0.05. Based on the basis of decision making in the linearity test, it can be concluded that the relationship between the principal's professional competence variable and the quality of education is linear (Rachmawati & Suyatno, 2021). The results of the homogeneity test of the quality of education on the principal's professional competence obtained a significance value (sig) of 0.365. So the significance value is > 0.05, so it can be concluded that the data on the quality of education variable and the principal's professional competence variable are homogeneous. The test results show a tolerance value for the principal's professional competence of 0.271 and a VIF value for the principal's professional competence of 3.694. The tolerance value for academic supervision is 0.257 and the VIF value for academic supervision is 3.890. The tolerance value for teacher work motivation is 0.271 and the VIF value for teacher work motivation is 3.695. From the three variables, the tolerance value was obtained > 0.1 and the VIF value < 10, so it can be concluded that there are no symptoms of multicollinearity in the principal's professional competence variable.

To determine the effect of independent variables on the dependent variable, an Anova test is conducted. The basis for decision making in the Anova test is: (a) If the Sig. value <0.05 and (b) If the Fcount value > Ftable, then there is an effect of the independent variable on the dependent variable. The Ftable value for 136 respondents with 3 predictor variables is 2.67.

To determine the amount of contribution given by the independent variable to the dependent variable, namely by conducting a Summary test (Alita et al, 2021). From the Summary test, the coefficient of determination (R2) is obtained which is called the determining coefficient because the variance that occurs in the dependent variable can be explained through the variance that occurs in the independent variable.

In determining the simple regression equation (Y = a + bX) and the multiple regression equation (Y = a + b2X1 + b2X2 + b3X3) using a regression test. The results of the regression test are also used to determine the level of significance of the influence of the independent variable on the dependent variable. The basis for decision making is: if the ttable value <tcount, then the influence of the independent variable on the dependent variable is significant (Aras et al, 2023). The ttable value of 136 is obtained using the formula: ttable = t(α/3 ; n – k – 1) = t (0.025 ; 132) = 1.97810.

The results of the correlation test of the principal's professional competence on the quality of education with the help of the Statistical Package for Social Science 22 are as follows:

Table 3. Correlation Test of Principal's Professional Competence on Education Quality

Correlations

		Quality of Education	Professional Competence of Principals
Quality of Education	Pearson Correlation	1	.795**
	Sig. (2-tailed)		.000
	N	136	136
Professional Competence of Principals	Pearson Correlation	.795**	1
	Sig. (2-tailed)	.000	
	N	136	136

**. Correlation is significant at the 0.01 level (2-tailed).

The results of the correlation test show that the Sig. (2-tailed) value is 0.000. This indicates a relationship between the principal's professional competence and the quality of education (Tihabsah et al, 2024). The correlation coefficient value is 0.795. The correlation coefficient value indicates that the level of relationship between the principal's professional competence and the quality of education is included in the "STRONG" category.

The results of the Anova test of the principal's professional competence on the quality of education can be seen in the following table:

Table 4. Anova Test of the Principal's Professional Competence on the Quality of Education

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	141403.223	1	141403.223	230.503	.000b
	Residual	82203.012	134	613.455		
	Total	223606.235	135			

a. Dependent Variable: Kualitas Pendidikan

b. Predictors: (Constant), Kompetensi Profesional Kepala Sekolah

The results of the Anova test show that the significance level is 0.000 and the F count value is 230.503. The significance level <0.05 and the F count value> F table is 230.503> 2.67. So it can be concluded that there is an influence of the principal's professional competence on the quality of education (Karim et al, 2021).

The results of the Summary test of the principal's professional competence on the quality of education can be seen in the following table:

Table 5. Summary Test of the Principal's Professional Competence on the Quality of Education

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.795a	.632	.630	24.768

a. Predictors: (Constant), Kompetensi Profesional Kepala Sekolah

Summary Test Results show a determination value (R2) of 0.632. This shows that the magnitude of the influence of the principal's professional competence on the quality of education is 63.2%. The remaining 36.8% is influenced by other variables.

The results of the regression coefficient test of the principal's professional competence on the quality of education can be seen in the following table:

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Table 6. Regression Coefficient Test of Principal's Professional Competence on Education Quality

Coefficientsa

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	46.810	10.976		4.265	.000
	Professional Competence of Principals	1.720	.113	.795	15.182	.000

a. Dependent Variable: Professional Competence of Principals

The results of the regression test show a constant value of 46.810 and a regression coefficient value of 1.720. From these results, the regression equation Y = 46.810 + 1.720X1 is obtained. The results of the regression test also obtained sig. 0.000. Sig. Value <0.05. Tcount value = 4.265. Tcount value> ttable, namely 4.265> 1.97810. So it can be concluded that there is a significant influence of the principal's professional competence on the quality of education.

The Influence of the Principal's Professional Competence on the Quality of Education Hypothesis 1 proposed in this study is "There is an influence of the principal's professional competence on the quality of elementary school education in Randublatung District". For the purpose of testing the hypothesis, the following statistical hypotheses are set:

H0 = there is no influence of the principal's professional competence on the quality of elementary school education in Randublatung District

Ha = there is an influence of the principal's professional competence on the quality of elementary school education in Randublatung District

The results of the correlation test show that the level of relationship between the principal's professional competence and the quality of education is included in the "STRONG" category with a correlation value of 0.795. The results of the Anova test show that there is an influence of the principal's professional competence on the quality of education. The results of the Summary Test show that the magnitude of the influence of the principal's competence on the quality of education is 63.2%. The remaining 36.8% is influenced by other variables. Variables other than the principal's professional competence that influence the quality of education include: educational management process (Handayani et al, 2024), human resources, facilities and infrastructure, budget, curriculum, organization, physical environment, development of science, community participation, education policy, educational input, educational supervision, principal's academic supervision, teacher professionalism, school culture, teacher competence, organizational culture, teacher performance, school committee, principal's role, organizational climate, education level, and teacher work motivation. The results of the regression test obtained the regression equation Y = 46.810 + 1.720X1. The equation can be explained as follows: 46.810 means that if the principal's professional competence is considered constant, the quality of education has a value of 46.810; 1.720 shows a positive regression coefficient, meaning that if the principal's professional competence increases by 1 point, the quality of education will increase by 1.720 points.

The results of the regression test also prove that there is a significant influence of the principal's professional competence on the quality of education with a t-value of 4.265. From the results of the research that have been presented, it can be concluded that H0 is rejected and Ha is accepted or there is an influence of the principal's professional competence on the quality of elementary school education in Randublatung District. The results of this study are in line with the opinion who explains that educational input, which is a factor that can influence the quality of education, includes human resources as school managers, namely competent principals (Qutni et al, 2021). The results of this study also support the research conducted by Sundani & Widjanarko (2024) which states that there is an influence of principal competence on school quality.

The influence of the principal's professional competence on the quality of elementary school education in Randublatung District is quite large, namely 63.2%. The large influence of the principal's professional competence on the quality of elementary school education in Randublatung District is due to the contribution of the dimension of student-centered learning leadership. The principal is quite good at developing a comfortable and safe school environment for the school community (Wijaya et al, 2022). In leading the school, the principal has implemented learning leadership by paying attention to teacher characteristics (Pan & Chen, 2021). Several things that must be fixed regarding the principal's professional competence are in the dimension of developing the vision and learning culture of the educational unit. The principal must increase the participation of the school community in preparing the school's vision and mission (Wardani et al, 2025). The principal must also foster a learning culture of the school community. Efforts to foster a learning culture can be done by managing a learning community in an educational unit oriented towards improving teacher competence and student learning achievements.

CONCLUSION

Based on the results of the study and discussion in the previous chapter, it can be concluded that: There is an influence of the principal's professional competence on the quality of elementary school education in Randublatung District of 63.2%. The correlation coefficient is 0.795 and the simple regression equation is Y = 46.810 + 1.720X1. Based on the conclusions of the research results, the researcher provides several suggestions as follows: 1). Teachers are advised to be involved in the preparation of the school's vision and mission so that the potential in the school environment can be accommodated in the vision and mission that has been set, 2. Teachers are advised to be involved in the preparation of supervision planning that will be carried out by the principal so that the problems faced by teachers in learning get solutions from the supervision activities carried out, 3). Teachers are advised to increase their motivation to improve their competence as educators through seminars, training, and the like, and 4). The principal must foster a learning culture for school residents by managing a learning community in an educational unit oriented towards improving teacher competence and student learning outcomes. The principal's professional competence has a positive influence on the quality of elementary school education in Randublatung District. The principal's professional competence in the form of the ability to develop the vision and learning culture of the educational unit, the ability to carry out student-centered learning leadership, and the ability to manage educational unit resources must be mastered well by the principal. If the principal is able to carry out his/her professional competence well, the quality of elementary school education in Randublatung District will increase.

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