(RESEARCH ARTICLE)

The influence of principal leadership and academic supervision on learning quality through teacher performance with work motivation as a moderation in Public Senior High Schools in Blora Regency

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Abstract

Learning quality is one indicator of successfull educational implementation. However, the 2024 Education Report indicates that the learning quality and instructional leadership of principals in public senior high schools in Blora Regency has not yet reached optimal levels. Therefore, improving learning quality requires serious attention. Efforts to improve learning quality are inseparable from principal leadership and teacher performance, which are also influenced by other factors, including academic supervision and work motivation. This study employed a quantitative approach with a hypothesis study design. The population consisted of all teachers of public senior high schools in Blora Regency, and the sample was selected using proportional random sampling. Data were collected through questionnaires that had met validity and reliability requirements. Data analysis was conducted using path analysis and Moderated Regression Analysis (MRA). The research results show that principal leadership and academic supervision have a positive and significant influence on learning quality and teacher performance. Teacher performance is the dominant factor in improving learning quality (72.1%), but it is not proven to mediate the influence of principal leadership and academic supervision on learning quality. Similarly, work motivation neither strengthens nor weakens the influence of teacher performance on learning quality. Based on the research results, it can be concluded that improving learning quality requires effective principal leadership, systemic academic supervision, and teacher performance improvement. Schools are advised to continue improving the quality of principal leadership, strengthening structured and continuous academic supervision practices, and providing more optimal support to teachers through training, learning facilities, and professional mentoring so that teachers have the opportunity to improve their competencies and support better learning quality.

Keywords: Principal Leadership; Academic Supervision; Teacher Performance; Work Motivation; Learning Quality

1   Introduction

Schools, as education providers, play a crucial role in improving the quality of education. Education is considered high-quality if it produces academic and extracurricular excellence in students who graduate or complete a specific degree program. (Muhaemin, 2024). Improving the quality of learning in schools is one indicator of successful education delivery.

Learning is a process of interaction between educators, students, and learning resources within a learning environment. Quality learning is determined not only by student academic achievement but also by the quality of the learning process, which includes effective and meaningful planning, implementation, and evaluation.

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Empirical conditions in public senior high schools in Blora Regency indicate that learning quality is not yet optimal. Based on the 2024 Education Report, most public senior high schools in Blora Regency scored below 70 on learning quality indicators, particularly in aspects of learning methods and classroom management.

Learning quality is strongly influenced by teacher performance, as the primary implementers of the learning process in the classroom. Teacher performance is reflected in their ability to systematically design learning materials, implement diverse and student-centered learning strategies and methods, and conduct assessments relevant to learning objectives. Optimal teacher performance will foster an active and meaningful learning process that can improve student learning outcomes.

Field conditions related to teacher performance in learning also show significant variation. Teachers are still found to have not systematically designed lessons, use monotonous teaching methods, and apply assessment techniques that lack variety and are not relevant to learning objectives. The results of interviews with school principals are also supported by research conducted by Herlina (2024) on high school teachers in Blora Regency. 63.1% of teachers created lesson plans with objectives that were not specific, measurable, and aligned with the curriculum, and 63.2% of teachers created materials that were not tailored to student needs and the local context. 66.7% of teachers tended to use monotonous and lacked variety in assessment techniques for both formative and summative assessments, and 64.9% of teachers tended to use assessment techniques and instruments that were not relevant to learning objectives.

Teacher performance in learning is influenced by various factors. One crucial factor is principal leadership. The principal, as the instructional leader, is responsible for directing, coaching, and facilitating teachers to implement learning in accordance with established standards. Effective principal leadership is expected to create a conducive work climate, increase teacher commitment, and encourage improved teacher performance in learning. However, based on the 2024 Education Report, the principal's instructional leadership indicator also showed relatively low performance, indicating that the principal's role in directing and supporting the learning process in schools is not yet optimal.

In addition to principal leadership, academic supervision is also a crucial factor in improving teacher performance. Academic supervision is a professional development process aimed at helping teachers develop pedagogical and professional skills in planning, implementing, and evaluating learning. Academic supervision, implemented in a planned, systematic, and ongoing manner, will provide constructive feedback to teachers, enabling them to improve and enhance the quality of learning.

Based on interviews regarding field conditions, it was discovered that academic supervision in a number of public high schools in Blora Regency still tends to be administrative in nature. Supervision focuses more on checking the completeness of learning materials, such as lesson plans and teaching administration, rather than on substantive support for learning strategies, classroom management, and student learning assessments. Although supervision is regularly scheduled, its implementation is not accompanied by constructive feedback and systematic follow-up. The principal's limited time also means that supervision activities are carried out by a team consisting of the vice principal or a senior teacher. As a result, academic supervision has not had a significant impact on improving teacher performance in learning.

In addition to school structural factors, individual teacher factors, such as work motivation, also play a role in determining the quality of teacher performance. Teacher work motivation is defined as a teacher's willingness to perform their duties. Work motivation influences a teacher's level of commitment to carrying out teaching tasks, developing professional competencies, and innovating in learning. Teachers with high work motivation tend to demonstrate better learning performance than those with low work motivation.

Normally, teachers are expected to have high work motivation as a primary prerequisite for optimally carrying out professional duties. However, actual conditions in public senior high schools in Blora Regency indicate that teacher work motivation does not fully reflect this expectation. This is evident in the low enthusiasm of some teachers in designing creative and contextual learning, minimal participation in training or competency improvement activities, and a tendency to view the development of learning materials as a mere administrative burden.

Based on this description, this study is important to comprehensively analyze the influence of principal leadership and academic supervision on learning quality through teacher performance, with work motivation as a moderating variable in public senior high schools in Blora Regency.

2 Material and methods

2.1 Research design and procedures

This research is a quantitative research type with a hypothesis study research design, namely a quantitative research design that aims to analyze, describe, and obtain empirical evidence on the relationship between two or more variables. This study uses a causality approach that aims to test the direct and indirect effects of independent variables on the dependent variable through mediating and moderating variables. In this case, to analyze the relationship between principal leadership and academic supervision on the quality of learning with teacher work motivation as a mediating variable and teacher performance as a moderating variable.

2.2 Population and sample

2.2.1. Population

The population in this study was all 410 teachers at state senior high schools in Blora Regency, representing eight state senior high schools.

2.2.2. Sampel

The sample size for this study was 202 respondents, determined using the Slovin Formula and Proportional Random Sampling.

2.3 Data collection tools and techniques

The instrument used in this study was a questionnaire that had been tested for validity and reliability. The questionnaire consisted of closed-ended questions, meaning that the researchers provided alternative answers. This questionnaire measured all variables involved in the study using a Likert scale.

3 Results

Data analysis techniques include descriptive analysis, analysis requirements testing, hypothesis testing, path analysis, and Moderated Regression Analysis (MRA).

3.1 Descriptive analysis

Descriptive analysis shows that overall, the data for all variables falls into the good to excellent category with varying degrees of diversity.

- Principal leadership showed a mean score of 69.84, a median of 69, and a mode of 76, indicating that respondents' perceptions were relatively good and tended to be homogeneous, as evidenced by the low standard deviation (6.255). The range of 30, from a minimum of 50 to a maximum of 80, indicates some variation, but not extreme.
- For academic supervision, the mean score of 94.32 and median of 92 indicate that supervision was perceived as good by the majority of respondents. However, the higher standard deviation (9.824) and range of 51 suggest more diverse respondent perceptions.
- Teacher performance had a mean score of 97.93, a median of 95.5, and a standard deviation of 8.897. This indicates that teacher performance is relatively high, with a moderate distribution of data. The minimum score of 74 and the maximum score of 115 indicate that most teachers demonstrate good to excellent performance.
- Teacher work motivation had a mean score of 86.96 and a median of 86, indicating a solid level of work motivation, supported by a standard deviation of 7.515, indicating relatively stable data. The range of scores from a minimum of 70 to a maximum of 100 indicates that most teachers have moderate to high work motivation.
- Learning quality had the highest mean score of 118.71, a median of 114, and the largest standard deviation of 12.214. This indicates that learning quality is considered quite high, but respondents' perceptions varied more than other variables.

3.2 Requirements analysis test

3.2.1.Normality Test

The Kolmogorov–Smirnov test yielded an unstandardized residual significance value of 0.367 with a significance level of 0.579. This significance value is greater than 0.05, indicating that the data from each variable is normally distributed.

3.2.2.Homogeneity Test

Based on the output results of the homogeneity of variance test using the Levene test, the significance probability value is 0.276. Therefore, it can be concluded that the value comes from a population that has the same or homogeneous variance.

3.2.3.Multicolonierity Test

Based on the results of the multicollinearity test, it is known that the principal leadership variable has a tolerance value of 0.358 and a VIF of 2.796. The academic supervision variable shows a tolerance value of 0.259 and a VIF of 3.854. The teacher performance variable has a tolerance value of 0.309 with a VIF of 3.240, and the teacher work motivation variable shows a tolerance value of 0.252 and a VIF of 3.970. All independent variables have a tolerance value above 0.10 and a VIF value below 10. Thus, it can be concluded that there is no multicollinearity between the independent variables in the regression model.

3.2.4.Linearity Test

The results of the linearity test indicate that the relationship between principal leadership and teacher performance (Sig. Linearity = 0.000; Deviation from Linearity = 0.568), as well as between academic supervision and teacher performance (Sig. Linearity = 0.000; Deviation from Linearity = 2.402), is linear. Furthermore, the relationship between teacher performance and learning quality (Sig. Linearity = 0.000; Deviation from Linearity = 0.275), principal leadership and learning quality (Sig. Linearity = 0.000; Deviation from Linearity = 0.272), and academic supervision and learning quality (Sig. Linearity = 0.000; Deviation from Linearity = 0.272) is also linear. Therefore, all variables meet the assumption of linearity and are suitable for further regression and path analysis.

3.3   Hypothesis Testing Results

3.3.1.The Influence of Principal Leadership on Teacher Performance

Regression analysis shows that principal leadership has a positive and significant influence on teacher performance (coefficient B = 0.793; Sig. = 0.000 < 0.05). These results confirm that the rise and fall of teacher performance is greatly influenced by principal leadership.

3.3.2.The Influence of Academic Supervision on Teacher Performance

Regression analysis shows that academic supervision has a positive and significant influence on teacher performance (coefficient B = 0.617; Sig. = 0.000 < 0.05). These results confirm that the rise and fall of teacher performance is greatly influenced by academic supervision.

3.3.3.The Influence of Principal Leadership on Learning Quality

Regression analysis shows that principal leadership has a positive and significant influence on learning quality (coefficient B = 1.120; Sig. = 0.000 < 0.05). These results confirm that the rise and fall of learning quality is greatly influenced by principal leadership.

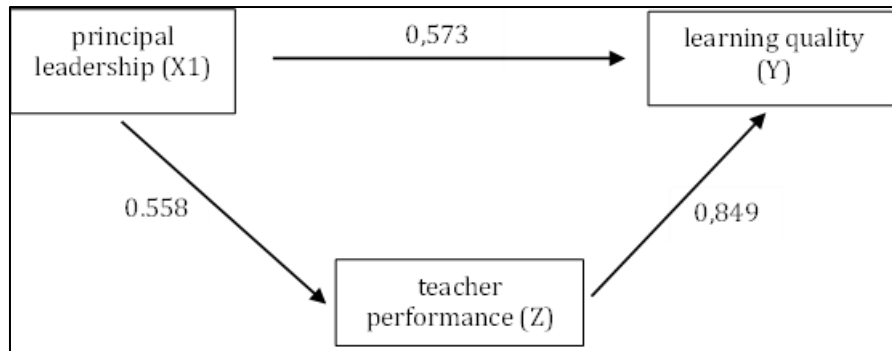*3.3.4.The Influence of Academic Supervision on Learning Quality*

 Regression analysis shows that academic supervision has a positive and significant influence on the quality of learning (coefficient B = 0.875; Sig. = 0.000 < 0.05). This result confirms that the rise and fall of learning quality is greatly influenced by academic supervision.

3.3.5.The Influence of Teacher Performance on Learning Quality

Regression analysis shows that teacher performance has a positive and significant influence on learning quality (coefficient B = 1.166; Sig. = 0.000 < 0.05). This result confirms that the rise and fall of learning quality is greatly influenced by teacher performance.
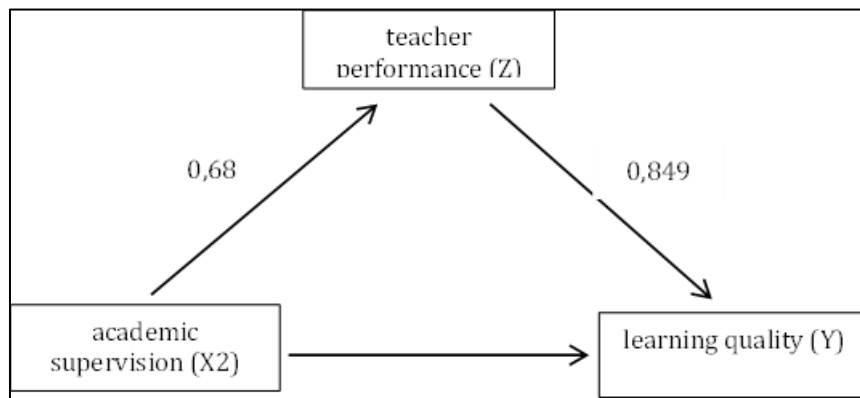
3.4   Path Analysis Results

Path analysis shows that the direct effect of the principal's leadership on learning quality is 0.573, while the indirect effect is 0.473. This means that the influence of principal leadership on learning quality is more effective directly without being mediated by teacher performance, because 0.573 > 0.473. Therefore, it can be concluded that teacher performance is not an intermediary variable that bridges the influence of principal leadership on learning quality.

Path calculation:
Direct path from X1 to Y   = 0.573
Indirect path from X1 to Z to Y (0.558 x 0.849)   = 0.473

Figure 1 Mediation Test 1

Meanwhile, the direct effect of academic supervision on learning quality is 0.703, while the indirect effect is 0.578. This means that the direct effect of academic supervision on learning quality is more effective when compared to using teacher performance as mediator, because 0.703>0.578. Therefore, it can be concluded that teacher performance is not an intervening variable that bridges academic supervision on learning quality.

Path calculation: 0.703
Direct path from X2 to Y   = 0.573
Indirect path from X2 to Z to Y (0.681 x 0.849)   = 0.578

Figure 2 Mediation Test 2

3.5 Moderated Regression Analysis (MRA)

The MRA test results indicate that work motivation did not moderate the relationship between teacher performance and learning quality. This finding is demonstrated by a significance value of 0.121, which is greater than the 0.05 threshold, thus declaring the interaction between teacher performance and work motivation insignificant.

4 Discussion

The findings of this study confirm that the better the leadership practices demonstrated by the principal, specifically in providing direction, support, and exemplary behavior, the higher the teacher's performance in implementing learning. The regression test results obtained the equation $\hat{Y} = 42.530 + 0.793X1$, indicating that every one-point increase in the principal's leadership will increase teacher performance by 0.793 points. This result aligns with previous research findings that found that the principal's transformational leadership style has a positive and significant effect on teacher performance in secondary schools. Through participatory decision-making, motivation, and the ability to create a conducive work climate, principals have been shown to encourage teachers to perform their duties optimally.

The positive regression coefficient in the test of the effect of academic supervision on teacher performance indicates that effective academic supervision practices, including coaching, classroom observation, feedback, and follow-up,

directly contribute to improving the quality of teachers' work in the learning process. Overall, the results of this study confirm that academic supervision is a strategic factor in improving teacher performance. The better the school's supervision, the higher the level of professionalism, teaching effectiveness, and responsibility of teachers in carrying out their duties. Previous studies consistently demonstrate that academic supervision is a crucial instrument in improving teacher performance.

Based on the results of the test of the influence of principal leadership on learning quality, it can be concluded that learning quality is significantly influenced by how the principal carries out their leadership role. The more effective the principal is in leading, directing, and creating a positive school climate, the higher the quality of learning. Conversely, low leadership quality will impact weak learning implementation in schools.

This is in line with the results of the test of the influence of academic supervision on learning quality. Academic supervision contributed 49.5% to learning quality. The obtained regression model, $\hat{Y} = 36.227 + 0.875X$, indicates that every one-unit increase in academic supervision increases the learning quality score by 0.875. The positive regression coefficient indicates that the direction of the influence is direct and consistent. Therefore, the more effective the principal's academic supervision activities, the better the quality of learning produced by teachers. This confirms that academic supervision is a strategic element in efforts to improve the quality of learning in schools.

The results also show that teacher performance has a very strong relationship with learning quality. A significance value of 0.000 indicates a very strong and positive relationship between the two variables, indicating that better teacher performance leads to improved learning quality. Therefore, efforts to improve learning quality must be accompanied by improvements in teacher competence, professionalism, and work performance.

The results of the mediation test analysis indicate that the direct influence of principal leadership and academic supervision is stronger than the indirect influence through teacher performance. This confirms that teacher performance does not act as an intervening variable in the relationship between principal leadership and academic supervision and learning quality. This means that while teacher performance contributes to learning quality, it does not significantly mediate the influence of principal leadership and academic supervision. This aligns with research by Hallinger (2021), which emphasizes that mediation is not always significant in every school context, especially when principal leadership already has a strong structural influence on learning quality. Furthermore, according to Hoy and Miskel (2013), principal leadership can contribute to learning quality by creating a conducive learning environment, strengthening academic norms, and providing structural support that enables effective learning.

Similarly, regarding academic supervision, the findings of this study indicate that a high-quality, planned, and continuous supervision process is strong enough to directly drive improvements in learning quality.

Regarding the moderating variable of work motivation, these findings indicate that teacher performance has a direct influence on learning quality, independent of teacher work motivation. This means that teachers with high performance are still able to produce high-quality learning, regardless of their work motivation. Conversely, teachers with low performance do not automatically improve their performance simply because they have high work motivation, because this motivation does not act as a strengthening factor in the relationship.

This insignificant moderating role could be due to several possibilities. First, in the context of this study, teacher performance may already be quite stable and not significantly influenced by psychological factors such as work motivation when contributing to learning quality. Second, teacher work motivation may be homogeneous or relatively uniform across respondents, so the variation in motivation needed to act as a moderator is not strongly evident. Third, learning quality is more likely influenced by technical aspects and professional competence of teachers, rather than by the level of work motivation within the context of teaching tasks. Theoretically, this condition can be explained by the view that work motivation functions as an individual motivator, but does not always act as a strengthening factor in the relationship between performance and organizational outcomes. In a standardized education system, learning quality is more influenced by systemic factors and academic policies than by variations in teachers' personal motivation.

5 Conclusion

Based on the results of this study, it can be concluded that principal leadership and academic supervision have a significant influence on learning quality. The direct influence is stronger than the indirect influence through teacher performance. Principal leadership, capable of directing and creating a positive school climate, will improve the quality of learning processes and outcomes in schools. Similarly, academic supervision carried out in a planned, structured, and

consistent manner can have a direct impact on improving teaching quality without requiring mediated improvements in teacher performance.

Teacher work motivation has not been shown to moderate the relationship between teacher performance and learning quality. Thus, the influence of teacher performance on learning quality is direct and is not strengthened or weakened by work motivation levels. This indicates that learning quality is more influenced by professional competence and technical aspects of teacher performance, rather than psychological variables such as work motivation.

Compliance with ethical standards

Disclosure of conflict of interest.

The authors declare that they have no conflicts of interest.

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Author's short biography

Asih Winarni was born on July 29, 1983. She is a postgraduate student in the Master of Educational Administration Program at Semarang State University. She has a strong interest in educational management and development, particularly in improving the quality of educational institutions through effective and sustainable management practices. She is known for her strong motivation to continue learning. Asih Winarni upholds the values of integrity, professionalism, and collaboration in her academic and professional endeavors. She aspires to make a greater contribution to her educational practice and support the advancement of education.	
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