

Democratic Leadership Style and Academic Supervision in Enhancing Student Learning Achievement: The Mediating Role of Teaching Quality

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ABSTRACT

Improving student achievement in primary education requires effective school management practices that translate leadership and supervision functions into quality learning processes. This study aims to analyze the direct and indirect effects of democratic leadership style and academic supervision on student learning achievement through learning quality as a mediating variable in public elementary schools in Serang City. This research employed a quantitative approach with a correlational survey design involving 200 civil servant teachers selected through purposive sampling. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) with SmartPLS 4.1. The results showed that democratic leadership style and academic supervision had positive and significant effects on learning quality. However, both variables did not have a significant direct effect on student achievement. Learning quality demonstrated a significant positive effect on student achievement and successfully mediated the relationship between democratic leadership style and academic supervision with student achievement. The research model explained 43.3% of the variance in student achievement. These findings emphasize that improving student achievement is strongly determined by the quality of learning processes supported by effective leadership and academic supervision practices.

Keywords: Democratic Leadership Style, Academic Supervision, Instructional Quality, Students' Academic Achievement.

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INTRODUCTION

Improving the quality of basic education is determined not only by the availability of educational facilities and infrastructure but also by the quality of the learning process and the effectiveness of school management. Elementary schools are a crucial foundation for developing academic competencies, character, skills, and student readiness to continue their education to the next level. Educational achievement at this level is a key indicator of the education system's success in providing quality learning services. Student achievement cannot be viewed solely as a result of individual student abilities but also as a reflection of the quality of the learning process and the school's organizational environment. Effective learning requires the support of school leadership capable of creating a collaborative work climate and academic supervision oriented toward teacher professional development. Improving student achievement needs to be placed within an educational management framework that integrates leadership, supervision, learning quality, and learning outcomes.

Issues in basic education in Serang City indicate that increased access to education has not been fully accompanied by optimal learning quality. Data used in the study indicate that the Minimum Service Standards (SPM) Index for Serang City Education in 2025 was 71.56, remaining in the "Complete Primary" category (Dinas Pendidikan Kota Serang, 2025). This situation indicates that there is still room for improvement in the provision of educational services, including aspects of learning and learning completion. Furthermore, National Assessment data presented in the study indicate that approximately 50% of students have not achieved the minimum competency in reading literacy, and approximately 67% have not met the minimum standard for numeracy (Dikdasmen, 2021). These findings indicate that educational issues are not solely related to student participation in education but also to the school's ability to produce a learning process that develops students' basic competencies.

This situation becomes even more relevant when linked to the variation in student academic achievement in public elementary schools in Serang City. Academic achievement has been inconsistent, and the learning process is not fully adaptive to individual students' characteristics. Teachers still encounter obstacles in developing lesson plans, implementing varied learning methods, and implementing innovative evaluations. This situation has the potential to create differences in learning quality between schools in the city center and schools in outlying areas. Student achievement must be understood as an output related to the quality of the instructional process and the academic management system in place within the school.

Learning quality is a crucial mechanism that explains how school management policies and practices translate into student learning outcomes (Yoseptry et al., 2024). Quality learning is characterized by clear planning, the implementation of appropriate learning strategies, active interaction between teachers and students, the use of relevant media and learning resources, and evaluations oriented toward improving the learning process. Learning quality not only reflects teacher activity in the classroom but also reflects the school's ability to create conditions that enable teachers to implement effective learning (Sitaasih, 2020). Learning quality in this study is positioned as a mediating variable because school leadership and academic supervision are expected to produce not only direct changes in student achievement but also improvements in the learning process. This framework positions learning quality as a mechanism linking principals' managerial practices to student learning outcomes.

One managerial factor that has the potential to influence learning quality is the principal's leadership style (Yoseptry et al., 2024). A democratic leadership style emphasizes the involvement of organizational members in decision-making, two-way communication, openness to opinions, and appreciation for the

contributions of subordinates (Mirsa et al., 2024). These characteristics allow teachers to have space to express ideas, participate in the decision-making process, and develop collaborative learning practices (Mirsa et al., 2024; Tobing et al., 2025). The principal functions not only as a decision-maker but also as a facilitator who creates organizational conditions that support teacher professional development. Participatory and open leadership can thus create a more conducive academic climate for improving the quality of learning.

Empirically, the relationship between democratic leadership style and learning achievement has been supported by several previous studies. Maulidyah (2023) found that the principal's democratic leadership had a positive and significant effect on student achievement. Astuti et al. (2021) also demonstrated that a principal's democratic leadership style influences student achievement, both when tested alongside teacher work motivation variables and individually. Research by Syakur et al. (2022) showed that a democratic leadership style has a positive and significant effect on the quality of educational management. These studies have not fully explained the mechanism by which a democratic leadership style can translate into improved learning achievement through quality teaching, particularly in public elementary schools in Serang City.

Academic supervision is an educational management instrument directly related to teacher professional development. Academic supervision should be understood not merely as an administrative oversight activity but rather as a systematic and ongoing development process to improve teachers' abilities in planning, implementing, and evaluating learning. Effective supervision includes supervision planning, lesson observation, providing constructive feedback, follow-up, and professional mentoring. Academic supervision can help teachers identify weaknesses in instructional practices and develop appropriate improvement strategies. Effective academic supervision has the potential to improve the quality of teaching and contribute to student achievement.

Empirical findings regarding academic supervision also demonstrate a relevant relationship with educational quality. Lestari et al. demonstrated that academic supervision significantly impacted teacher performance (Lestari et al., 2023). Sumiati et al. (2022) found a significant relationship between academic supervision and learning quality in elementary school clusters in Serang District. Research by Sari et al. (2025) showed that academic supervision and teacher performance had a positive and significant impact on elementary school quality. Silondae et al. (2025) also found a positive and significant effect of academic supervision on teacher performance in public elementary schools. These findings demonstrate that academic supervision plays a strategic role in improving teacher professional practice, although most research focuses on teacher outcomes or school quality and has not specifically explained the mechanisms by which it impacts student achievement through learning quality.

The relationship between learning quality and student achievement is also supported by previous research. Learning quality encompasses the effectiveness of instructional strategies, teacher professional competence, the use of learning media, learning interactions, and a learning environment that supports active student engagement. Zafra and Balacuit Jr. (2025) demonstrated that instructional factors, teaching quality, and the learning environment were significantly related to elementary school students' academic achievement. Bireleo and Yohana (2024) also found that teacher instruction, as part of learning quality, had a positive and significant effect on student achievement. These findings reinforce the argument that improving learning achievement cannot be achieved simply by strengthening policies at the organizational level but must be realized through effective learning at the classroom level.

Although the relationship between leadership, academic supervision, learning quality, and academic achievement has received considerable research attention, several empirical gaps remain. First, there is a contextual gap, as some previous studies were conducted at different levels and educational organizations, such as junior high schools, Islamic senior high schools, universities, and areas outside Serang City. Second, there is an empirical gap, as research findings on the influence of leadership and supervision have not yet fully demonstrated consistent patterns, especially when these variables are tested simultaneously in relation to learning quality and achievement. Third, there is a methodological gap, as several studies still use simple or multiple regression, thus failing to explain indirect effects through mediating variables.

Previous studies have predominantly examined the direct relationship between principal leadership, academic supervision, and educational outcomes separately. However, limited studies have empirically examined the mechanism through which managerial practices influence student achievement by improving the quality of classroom learning, particularly in public elementary schools. Therefore, this study contributes by developing and testing a structural model that explains learning quality as an intermediary mechanism connecting school managerial factors and student learning outcomes.

This methodological gap is important because the theoretical influence of democratic leadership and academic supervision on academic achievement is not always direct. Principals can foster participatory organizational conditions, but this influence needs to be translated into changes in teaching practices. Academic supervision can provide feedback and guidance to teachers, but the ultimate impact on students depends on the extent to which the results of supervision are implemented in the learning process. Placing learning quality as a mediating variable allows the study to explain the relationship mechanisms more comprehensively than simply testing the direct relationship between the variables. This study explicitly positions learning quality as the bridge connecting democratic leadership style and academic supervision with student achievement.

This study contributes a novel perspective by explaining the mechanism through which school managerial factors are translated into student learning outcomes. Unlike previous studies that predominantly examined the direct effects of principal leadership and academic supervision on educational outcomes, this study demonstrates that these managerial factors influence student achievement primarily through the improvement of learning quality. By positioning learning quality as a mediating mechanism, this study provides a more comprehensive explanation of how democratic leadership style and academic supervision contribute to improving student achievement.

Furthermore, this study extends existing evidence by examining this structural relationship in public elementary schools in Serang City, Indonesia, where variations in school management practices and instructional processes remain important challenges. The findings provide empirical evidence that improving student achievement requires not only strengthening leadership and supervision practices but also ensuring that these practices produce meaningful improvements in classroom learning processes.

Based on the theoretical framework and empirical findings, this study proposes a structural model explaining the relationship between democratic leadership style, academic supervision, learning quality, and student achievement. Democratic leadership style is expected to contribute to improving learning quality because participatory decision-making, open communication, teacher involvement, and supportive leadership practices can create conditions that encourage effective teaching processes. Therefore, this study hypothesizes that democratic leadership style has a positive and significant effect on learning quality (H1). In addition, academic supervision is expected to strengthen learning quality through systematic planning,

classroom observation, constructive feedback, and professional guidance for teachers. Thus, academic supervision is hypothesized to have a positive and significant effect on learning quality (H2).

Furthermore, although leadership and academic supervision primarily influence teachers and instructional processes, their contribution to student achievement remains important to examine. Democratic leadership style and academic supervision may influence student achievement by creating organizational and instructional conditions that support better learning outcomes. Therefore, this study tests the direct effects of democratic leadership style and academic supervision on student achievement (H3 and H4). Learning quality represents the actual learning process experienced by students, including instructional planning, learning implementation, teacher-student interaction, and evaluation practices. A higher quality learning process is expected to improve student achievement; therefore, learning quality is hypothesized to have a positive and significant effect on student achievement (H5).

Moreover, this study assumes that the influence of democratic leadership style and academic supervision on student achievement occurs through learning quality as a mediating mechanism. Leadership and supervision are not directly experienced by students but are translated through improvements in teaching and learning processes. Therefore, this study hypothesizes that learning quality mediates the relationship between democratic leadership style and student achievement (H6) and mediates the relationship between academic supervision and student achievement (H7).

Based on this background, this study aims to analyze the influence of democratic leadership style and academic supervision on student achievement through learning quality in public elementary schools in Serang City. Specifically, this study examines the direct effects of democratic leadership style and academic supervision on learning quality and student achievement, the effect of learning quality on student achievement, and the mediating role of learning quality in explaining the relationship between school managerial factors and student learning outcomes. This study aims to provide empirical evidence regarding the mechanism through which leadership practices and academic supervision contribute to improving student achievement through the quality of the learning process.

METHODS OF RESEARCH

This study used a quantitative approach with a correlational survey design to analyze the influence of democratic leadership style and academic supervision on student achievement through learning quality. The study was conducted at public elementary schools in Serang City, with teachers as the respondents. The study population consisted of 845 civil servant teachers at public elementary schools in Serang City. The sample consisted of 200 civil servant teachers selected using purposive sampling based on predetermined criteria (Sugiyono, 2022). Respondents were selected based on the criteria of being civil servants, having worked for at least two years, being directly involved in the learning process, and completing the research instrument completely.

Data collection was conducted using a questionnaire with a five-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree) (Sugiyono, 2022). The research instrument was developed based on indicators of each research construct: democratic leadership style (X1), academic supervision (X2), learning quality (Z), and student achievement (Y). A summary of the operationalization of the variables is presented in Table 1.

Table 1. Research Variable Indicators

Variable	Indicator
Democratic Leadership Style (X1)	Participation in decision-making; open communication; providing opportunities to express opinions; teacher involvement in problem-solving; sharing of responsibilities
Academic Supervision (X2)	Supervision planning; supervision implementation; learning observation; providing feedback; follow-up on supervision results
Learning Quality (Z)	Learning planning; learning implementation; teacher-student interaction; use of learning methods and media; learning evaluation
Student Learning Achievement (Y)	Achievement of learning outcomes; mastery of material; learning completeness; achievement of competencies; learning evaluation results

The research instrument was first tested to ensure construct validity and reliability before testing the relationships between variables. Data analysis used the Partial Least Squares–Structural Equation Modeling (PLS-SEM) method with the help of SmartPLS 4.1 software (Hair et al., 2019). Evaluation of the measurement model (outer model) was carried out through examining the outer loading, Average Variance Extracted (AVE), Composite Reliability, and Cronbach's Alpha (Priyanto, 2025). Next, evaluation of the structural model (inner model) was carried out by looking at the values of the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2), as well as the path coefficient and significance of the relationship between variables (Hair et al., 2019). Mediation testing was conducted to determine the role of learning quality in mediating the influence of democratic leadership style and academic supervision on student achievement.

RESULT AND DISCUSSION

This study involved 200 civil servant teachers at public elementary schools in Serang City as respondents. Data analysis was conducted using the Partial Least Squares-Structural Equation Modeling (PLS-SEM) approach. Model evaluation was conducted through testing the outer model to ensure construct validity and reliability, and the inner model to analyze the relationships between variables in the research model. Hypothesis testing was conducted using a bootstrapping procedure with significance criteria of t-statistics > 1.96 or p-value < 0.05 .

Construct Validity and Reliability

The results of the outer model evaluation showed that after eliminating indicators with outer loading values below 0.70, all indicators used in the final model had outer loading values above 0.70. Thus, the retained indicators were deemed to meet the criteria for convergent validity.

Table 2. Average Variance Extracted (AVE) Value

Variable	AVE	Description
Democratic Leadership Style	0,670	Valid
Learning Quality	0,593	Valid
Student Learning Achievement	0,599	Valid
Academic Supervision	0,707	Valid

Source: SEM-PLS Data Processing Results (2026)

All AVE values were above 0.50, namely 0.670 for democratic leadership style, 0.593 for learning quality, 0.599 for learning achievement, and 0.707 for academic supervision. These results indicate that each construct adequately explains the variance in its indicators.

Reliability testing also demonstrated that the results met the criteria. The Composite Reliability values for each construct ranged from 0.921 to 0.956, while Cronbach's Alpha values ranged from 0.902 to 0.948. Thus, all constructs exhibited good internal consistency and could be used for further analysis.

Structural Model Evaluation

The results of the structural model test showed an R-square value of 0.366 for learning quality. 36.6% of the variation in learning quality was explained by democratic leadership style and academic supervision, while the remaining 63.4% was explained by factors outside the research model. The R-square value of learning achievement is 0.433, which means that democratic leadership style, academic supervision, and learning quality together can explain 43.3% of the variation in student learning achievement.

Table 3. Coefficient of Determination

Endogenous Variable	R-square	Description
Learning Quality	0,366	Moderate
Academic Achievement	0,433	Moderate

Source: SEM-PLS Data Processing Results (2026)

The Q-square value of 0.640 indicates that the structural model has predictive relevance. The structural model used has relevant predictive ability for the endogenous variables in the study.

The Goodness of Fit value of 0.506 is in the largest category based on the criteria used in the study. These results indicate that the model has good ability to explain empirical data.

Effect Size

Effect size analysis indicates differences in the strength of influence between variables.

Tabel 4. Effect Size (f^2)

Endogenous Variable	Learning Quality	Academic Achievement
Democratic Leadership Style	0,075	0,001
Academic Supervision	0,044	0,002
Learning Quality	–	0,407

Source: SEM-PLS Data Processing Results (2026)

The f^2 value indicates that democratic leadership style and academic supervision have a small effect on learning quality. Conversely, the direct effect of democratic leadership style and academic supervision on learning achievement has no significant effect. Learning quality has an f^2 value of 0.407, which is categorized as a large effect and is the strongest influence in the research model.

Hypothesis Testing

Table 5. Hypothesis Testing Results

Hypothesis	Relationship	T-statistics	P-values	Decision
H1	Democratic Leadership Style → Learning Quality	2.799	0.005	Accepted
H2	Academic Supervision → Learning Quality	2.019	0.044	Accepted
H3	Democratic Leadership Style → Academic Achievement	0.236	0.813	Rejected
H4	Academic Supervision → Academic Achievement	0.346	0.729	Rejected
H5	Learning Quality → Academic Achievement	6.524	0.000	Accepted
H6	Democratic Leadership Style → Learning Quality → Academic Achievement	2.196	0.028	Accepted
H7	Academic Supervision → Learning Quality → Academic Achievement	2.200	0.028	Accepted

Source: SEM-PLS Data Processing Results (2026)

The test results indicate that H1, H2, H5, H6, and H7 are empirically supported, while H3 and H4 are not. Overall, these results indicate that democratic leadership style and academic supervision influence learning quality, but do not have a significant direct effect on learning achievement. Conversely, learning quality has a significant direct effect on learning achievement and plays a role in mediating the relationship between these two variables and learning achievement.

Discussion

The Influence of Democratic Leadership Style on Learning Quality

The results of this study indicate that democratic leadership style has a positive and significant effect on learning quality in public elementary schools in Serang City. The path coefficient value of 0.361, t-statistics of 2.799, and p-value of 0.005 indicate that increased implementation of democratic leadership style is followed by improved learning quality.

These findings indicate that learning quality is not solely determined by teacher-initiated factors but is also influenced by the leadership conditions that develop within the school environment. Democratic leadership, characterized by open communication, teacher involvement in decision-making, respect for teacher opinions, and trust, can create a more conducive work environment. Teachers have greater space to express ideas, exchange experiences, and develop learning innovations tailored to student needs.

Descriptive findings indicate that all indicators of democratic leadership style are in the high category. The indicator with the highest index value is providing support for teacher professional development, with a score of 177.4, while the lowest score is providing clear and transparent information, with a score of 162.2. These findings indicate that principals have prioritized teacher development, although communication transparency remains an aspect that requires further strengthening.

Substantively, these results demonstrate that principals function not only as administrators but also as learning leaders. Teacher involvement in decision-making can foster a sense of ownership toward school programs and encourage teachers to take greater responsibility in planning, implementing, and evaluating learning activities.

These findings are consistent with previous studies demonstrating that democratic leadership contributes to improving learning management effectiveness through teacher participation, collaborative

working relationships, professional development support, and the creation of a conducive learning environment. However, previous studies have generally focused on the relationship between principal leadership and educational outcomes, teacher performance, or school management effectiveness. This study extends previous findings by demonstrating that democratic leadership contributes to student achievement primarily through the improvement of learning quality. This finding suggests that leadership effectiveness in elementary schools should not only be assessed from administrative performance but also from its capacity to create instructional conditions that enable teachers to improve classroom practices.

The f^2 value of 0.075 indicates that the influence of democratic leadership on learning quality is relatively small. This finding suggests that democratic leadership is an important supporting factor but not the sole determinant of learning quality. Other factors, such as teacher competence, availability of learning resources, school culture, student characteristics, and instructional strategies, may also contribute to variations in learning quality.

The Effect of Academic Supervision on Learning Quality

Test results indicate that academic supervision has a positive and significant effect on learning quality. The path coefficient value of 0.277, t-statistic of 2.019, and p-value of 0.044 indicate that the better the implementation of academic supervision, the better the quality of learning implemented by teachers.

Academic supervision can be understood as a professional development process that provides teachers with the opportunity to receive feedback on their learning practices. Teachers can identify the strengths and weaknesses of their learning and receive guidance for improvement. Academic supervision should not only function as an assessment instrument but also as a means of teacher professional development.

Descriptive results indicate that all academic supervision indicators are in the high category. The indicator with the highest index value is the provision of discussion space before establishing policies, with a score of 170.0. The indicator with the lowest score is teacher assistance in correcting learning weaknesses, with a score of 153.4. This situation indicates that communication in the supervision process has been relatively good, but follow-up, in the form of direct mentoring for teachers, still needs improvement.

These findings suggest that academic supervision will have a greater impact if the results are followed by corrective actions. Observations without ongoing feedback and mentoring have the potential to render supervision merely an administrative activity. Conversely, supervision accompanied by reflection, coaching, and follow-up can help teachers improve the planning, implementation, and evaluation of learning.

These findings align with previous research showing that systematic academic supervision can improve teacher pedagogical competence, professionalism, and performance, which in turn impacts learning quality.

The f^2 value of 0.044 indicates that the contribution of academic supervision to learning quality is still small. Academic supervision needs to be integrated with other teacher professional development programs to optimize its impact on learning quality.

The Effect of Democratic Leadership Style on Learning Achievement

Democratic leadership style was not proven to have a significant direct effect on student learning achievement. The t-statistic of 0.236 and p-value of 0.813 indicate that the relationship is not significant.

These findings indicate that changes in the principal's leadership style do not necessarily result in changes in student learning achievement. Although democratic leadership can create a conducive work environment for teachers, this influence still needs to go through a learning process before it can be felt by students.

Principals typically do not interact directly with students during all learning activities. The principal's role is more realized through school management, teacher development, creating a work environment, and policy-making. The influence of leadership on learning achievement depends heavily on the teacher's ability to translate organizational conditions into the learning process.

This finding is supported by the f^2 value of 0.001, which falls below the small effect size limit, indicating that democratic leadership does not make a significant substantive contribution to direct changes in learning achievement.

The results of this study provide an understanding that democratic leadership plays a more supportive role in the educational process than as a direct determinant of learning achievement. This role becomes clearer when learning quality is positioned as a variable linking leadership to learning achievement.

The Effect of Academic Supervision on Learning Achievement

Academic supervision was also not proven to have a significant direct impact on student learning achievement. The test results yielded a t-statistic of 0.346 and a p-value of 0.729, thus disproving the fourth hypothesis.

This finding indicates that academic supervision does not directly lead to improvements in student learning achievement. This is understandable because the primary objective of academic supervision is the teacher and the learning process, not student achievement directly. The principal conducts supervision to provide direction, evaluation, and coaching to teachers, while changes in student achievement occur after the results of this coaching are implemented in the learning process.

The success of academic supervision is not solely measured by the frequency of supervision but also by the extent to which the results of supervision are followed up in learning practices. If the results of supervision are not followed up by changes in learning strategies, classroom management, media use, or learning evaluation, the impact on student learning achievement will be limited.

The f^2 value of 0.002 strengthens this finding because it indicates that academic supervision does not have a substantive effect on learning achievement directly.

This result does not imply that academic supervision is unimportant. The research results indicate that the supervisory function is more indirect, namely through improving the quality of learning. Academic supervision will be more effective if directed at tangible improvements in the learning process.

The Effect of Learning Quality on Learning Achievement

Unlike the previous two variables, learning quality was proven to have a positive and significant influence on student learning achievement. The test results showed a t-statistic of 6.524 and a p-value of 0.000, with a path coefficient of 0.603.

These results indicate that the better the quality of learning, the higher the student's learning achievement. Learning quality was the strongest factor in the research model, as indicated by the f^2 value of 0.407, which falls into the large effect category.

Descriptive findings indicate that all learning quality indicators are in the high category. The indicators with the highest scores are the application of varied learning strategies and two-way communication between teachers and students, each of which achieved an index of 172.2. The use of relevant learning media had the lowest index value, at 154.4.

These results indicate that a learning process that actively engages students, utilizes a variety of strategies, and fosters two-way communication can create a more effective learning experience. When students are actively engaged in the learning process, they have a greater opportunity to understand the material, develop skills, and achieve learning objectives.

The relatively low score for the instructional media use indicator indicates room for improvement. Although still in the high category, the use of relevant media needs to be continuously developed to make learning more engaging, contextual, and tailored to student characteristics.

These findings emphasize that improving student achievement needs to be directed primarily at improving the quality of the learning process. Leadership and supervision are important supporting factors, but the changes most directly affecting student achievement occur through the learning process they experience directly.

The Influence of Democratic Leadership Style on Learning Achievement through Learning Quality

The results of the indirect effect test indicate that democratic leadership style has a positive and significant effect on learning achievement through learning quality. The t-statistic of 2.196 and p-value of 0.028 indicate that the sixth hypothesis is accepted.

These findings provide a more comprehensive explanation of the relationship between principal leadership and student achievement. Although democratic leadership style does not have a significant direct effect on learning achievement, it can exert an influence by improving learning quality.

The mechanism of this relationship can be explained by the process by which democratic leadership creates a work environment that allows teachers to participate, express ideas, and receive support for professional development. These conditions then encourage teachers to improve the quality of learning planning, implementation, and evaluation. Improved learning quality subsequently impacts student achievement.

Learning quality acts as a mechanism connecting principal leadership practices with student learning outcomes. These findings suggest that the success of democratic leadership in an educational context can be assessed not only by its direct relationship with student achievement but also by its ability to create conditions that support improved learning quality.

The Effect of Academic Supervision on Learning Achievement through Learning Quality

The results of the seventh hypothesis test indicate that academic supervision has a positive and significant effect on learning achievement through learning quality. The t-statistic of 2.200 and p-value of 0.028 indicate that the seventh hypothesis is accepted.

These findings indicate that learning quality can act as a link between the implementation of academic supervision and student learning achievement. Academic supervision impacts learning achievement when the supervision process results in improvements in learning quality.

This relationship can occur through the supervision process, which includes learning observations, feedback, mentoring, and follow-up. Teachers can identify learning weaknesses and receive guidance on

how to correct them. When these improvements are implemented in learning, the quality of student learning improves, further contributing to learning achievement.

These results also explain why academic supervision does not directly affect learning achievement. Supervision is an intervention that operates at the teacher level and the learning process, while learning achievement is an outcome that emerges after the learning process has taken place. Learning quality is a crucial link between these two variables.

The research findings reinforce the view that academic supervision should be not solely oriented toward reviewing learning administration but also directed toward professional development that produces tangible changes in learning practices.

Synthesis of Research Findings

Simultaneously, all research findings demonstrate a strong pattern. Democratic leadership style and academic supervision significantly influence learning quality, but neither has a significant direct effect on learning achievement. Learning quality has a strong direct effect on learning achievement and acts as a mediator in the relationship between these two variables and learning achievement.

This pattern indicates that learning quality is central to the research model. The f^2 value of 0.407 indicates that learning quality has the greatest substantive influence on learning achievement compared to other variables.

Improving student learning achievement cannot be achieved simply by improving the principal's leadership style or enhancing the implementation of academic supervision. Both factors need to be directed toward producing tangible changes in the learning process. The principal needs to create a participatory and supportive work environment for teachers, while academic supervision needs to be directed toward coaching, feedback, mentoring, and follow-up.

These findings demonstrate that school managerial factors operate throughout the educational process before producing outcomes for students. Leadership creates organizational conditions, supervision provides professional development, teachers implement improvements in instruction, and students gain higher-quality learning experiences. This chain of events ultimately results in improved academic achievement.

CONCLUSION

This study shows that a democratic leadership style has a positive and significant effect on the quality of learning in public elementary schools in Serang City. These findings indicate that the implementation of participatory, open, and communicative leadership, while allowing teachers to participate in decision-making, can create working conditions that support improved learning quality.

Academic supervision has also been shown to have a positive and significant effect on learning quality. Planned and ongoing supervision can help teachers identify learning weaknesses and make improvements to the learning process. Democratic leadership style and academic supervision were not shown to have a significant direct effect on student achievement.

Learning quality was shown to be the strongest factor influencing student achievement. The path coefficient of 0.603 and the f^2 value of 0.407 indicate that learning quality has a significant contribution to

learning achievement. These findings confirm that improvements in student achievement are more closely related to the quality of the learning process experienced by students in the classroom.

Democratic leadership style and academic supervision were shown to have a positive and significant indirect effect on learning achievement through learning quality. These results indicate that learning quality acts as a mediating variable linking school managerial factors to student learning outcomes.

This research provides empirical evidence that learning quality is the primary mechanism that translates principal leadership and academic supervision into improved student achievement. Efforts to improve the quality of education in public elementary schools in Serang City must prioritize improving learning quality. Democratic leadership and academic supervision need to be directed not only toward fulfilling managerial and administrative functions, but also toward creating conditions that enable teachers to continuously improve their learning practices.

Practically, school principals should strengthen participatory leadership practices and develop supervision systems oriented toward teacher coaching rather than administrative evaluation. For policymakers, improving student achievement requires integrated strategies that combine leadership development, academic supervision, and continuous improvement of instructional quality.

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