The Effect of Implementing Quality Standards and Teacher Competencies on the Quality of Student Learning at SMA Negeri 1 Leuwiliang, Bogor Regency

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Abstract: This study aims to analyze the effect of the implementation of Quality Standards (X1) and Teacher Competence (X2) on the Quality of Learning (Y) at SMA Negeri 1 Leuwiliang, Bogor Regency. Improving the quality of education is a crucial agenda in human resource development, where its success at the school level is largely determined by the synergy between the implementation of systemic standards and the capabilities of individual educators. This study uses a quantitative approach with an explanatory research type to explain the causal relationship between variables. The research sample consisted of 30 teachers selected through a purposive sampling technique. Data collection was carried out using a Likert-scale questionnaire consisting of 50 statements. Data were analyzed using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method with SmartPLS 4.0 software. The results of the analysis show that (1) Quality Standards have a positive and significant effect on the Quality of Learning with a path coefficient of 0.350; (2) Teacher Competence has a positive and significant effect on the Quality of Learning with a path coefficient of 0.550. Simultaneously, the two independent variables were able to explain 68.3% of the variance in the Learning Quality variable. This finding indicates that although structured quality standards are an important foundation, teacher competence is a factor with a more dominant influence in creating superior learning quality at SMAN 1 Leuwi Liang. The practical implication of this study is the need to prioritize continuous teacher professional development programs, in addition to ensuring compliance with national education standards.

Keywords: Quality Standards, Teacher Competence, Learning Quality, PLS-SEM, Educational Management

1. Introduction

Education plays a crucial and strategic role as the foundation for developing high-quality and competitive human resources. In the face of global challenges, improving the quality of national education is no longer a mere option but a continuous necessity. Recognizing this urgency, the Indonesian government has responded systematically by establishing the Standar Nasional Pendidikan (SNP) or National Education Standards through Government Regulation No. 57 of 2021. These standards serve as minimum criteria and benchmarks to ensure the quality of education across the country, covering aspects from planning and implementation to supervision of the educational process (Ainiyah & Husnaini, 2019).

However, the formulation of standards at the macro level does not automatically translate into improvements at the micro level specifically within individual schools. The successful implementation of SNP relies on two fundamental pillars. The first pillar is the institution's capacity to interpret and operationalize these standards in measurable processes, referred to as the "quality standard" variable in this study (Siswopranoto, 2022). The second pillar is the readiness and capability of the frontline executors namely, teacher competence.

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A school can be said to deliver quality education only when its learning processes are of high quality, a result that emerges from the complex interplay between system structure and individual actors (Supriyanto et al., 2019).

In practice, there remains a significant gap between ideal policy formulation and real-world implementation. While the SNP framework and the teacher competency standards outlined in Law No. 14 of 2005 are already in place (Yuliana & Raharjo, 2019), the actual learning experiences and outcomes vary widely across schools and even between classrooms within the same institution. This inconsistency raises a critical research question: To what extent do the systemic application of educational quality standards and the individual competence of teachers either partially or simultaneously influence the quality of learning processes in a high school context?

To answer this question, this study focuses on SMA Negeri 1 Leuwiliang in Bogor Regency as a case study. By investigating this specific context, the research aims to provide an in-depth empirical understanding of how macro-level education policies intersect with micro-level school and teacher practices. Moreover, it will explore the direct and indirect impacts of institutional standards and personal competencies on learning quality. Ultimately, this investigation contributes to the broader discourse on education reform by offering insights into how national standards can be effectively translated into classroom excellence

2. Literature Review

This section must contain a state-of-the-art explanation. It can be explained in several ways. First, you can discuss several related papers, both about objects, methods, and their results. From there, you can explain and emphasize gaps or differences between your research and previous research. The second way is to combine theory with related literature and explain each theory in one sub-chapter.

2.1. Quality Standards

The concept of Standar Mutu (Quality Standards) in this study refers to the school's level of compliance and effectiveness in implementing components of the Standar Nasional Pendidikan (SNP), especially those directly influencing teaching and learning processes. Grounded in Government Regulation No. 57 of 2021, this variable focuses on two key dimensions: the implementation of the Process Standards and the Assessment Standards (Siswopranoto, 2022). These dimensions serve as indicators of a school's continuous effort to ensure stakeholder satisfaction and graduate quality through measurable practices. The Process Standards assess how teachers plan, execute, and supervise learning in ways that are interactive, inspiring, and student-centered. The indicators include structured lesson plans (RPP/Modul Ajar), diverse and effective teaching strategies, and ongoing student monitoring (Sobarningsih, 2019).

Meanwhile, the Assessment Standards examine how educational assessments are carried out systematically and accountably to track students' progress. Indicators include the application of fair and integrated assessment principles, the use of various instruments such as written tests, portfolios, and observations, and how assessment results are used to improve the learning process (Kusainun, 2020). Together, these dimensions not only reflect policy compliance but also signify a school's internal commitment to quality assurance. The accurate implementation of these standards is essential for narrowing the gap between policy formulation and classroom realities, contributing directly to the overall improvement of educational quality in Indonesian schools (Ainiyah & Husnaini, 2019).

2.2 Teacher Competence

Teacher competence is defined as a set of integrated knowledge, skills, and behaviors that educators must possess and internalize to carry out their professional duties effectively. It is a qualitative measure of meaningful and impactful teacher behavior. As stipulated in Law No. 14 of 2005 and Ministerial Regulation No. 16 of 2007, teacher competence is categorized into four interrelated dimensions: pedagogical, personal, social, and professional (Chasanah & Ningsih, 2023). Pedagogical competence involves the teacher's ability to manage learning,

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including understanding students, planning and implementing instruction, evaluating learning outcomes, and developing student potential. Indicators include designing learning that aligns with student characteristics and using technology in the learning process (Ramaliya & Hufad, 2022).

Personal competence reflects the teacher's integrity and maturity, demonstrated through ethical conduct, responsibility, and being a role model. Social competence involves the ability to communicate effectively with students, colleagues, parents, and the broader community. Meanwhile, professional competence emphasizes deep mastery of subject matter and the ability to develop curriculum materials creatively and innovatively (Rosyada, 2021; Mangngi, 2022). These four dimensions interact to form a comprehensive picture of teacher capability, essential for improving student outcomes and instructional quality. Therefore, teacher competence is not merely an administrative requirement, but a pivotal factor in educational success, directly influencing the quality of teaching and learning in schools (Rahmawati & Syahrullah, 2024).

2.3 Learning Quality (Y)

Learning quality refers to the degree of effectiveness and value of students' learning experiences, emphasizing meaningful engagement, motivation, interaction, and achievement of learning goals. It is not solely assessed through final outcomes or grades but more through the dynamic and empowering nature of the learning process itself (Supriyanto et al., 2019). High learning quality is characterized by the presence of stimulating and student-centered teaching approaches, supportive classroom environments, and sustained learner engagement. This concept reflects a shift from teacher-centered to learner-centered paradigms, where students play an active role in their own learning journey (Chasanah & Ningsih, 2023).

Three dimensions frame this variable: student engagement and motivation, classroom interaction and climate, and achievement of learning objectives. Indicators include students' enthusiasm, active participation in class activities, and intrinsic motivation to learn beyond the classroom. Additionally, high-quality interaction among peers and with teachers fosters a safe and dynamic atmosphere for learning. The effectiveness of instruction is evident in how well students understand the content, apply their skills, and perceive their academic improvement (Siswopranoto, 2022). These indicators demonstrate that improving learning quality requires attention not only to pedagogical techniques but also to psychological and social elements that support learners holistically.

3. Method

This study adopts a quantitative approach to examine causal relationships between variables using numerical data analyzed through statistical methods. Specifically, it employs explanatory research to test the effects of independent variables quality standards and teacher competence—on the dependent variable, learning quality. The study was conducted at SMA Negeri 1 Leuwi Liang, West Java, over a three-month period from September to November 2024. The population consisted of all civil servant teachers (PNS and PPPK), with a purposive sample of 30 teachers who had taught for at least two years. Data were collected using a closed-ended questionnaire comprising 50 items developed based on literature-reviewed indicators, measured on a 5-point Likert scale. Instrument validity was ensured through logical derivation of each item from well-established theoretical dimensions. For data analysis, Partial Least Squares Structural Equation Modeling (PLS-SEM) via SmartPLS 4.0 was used, suitable for small samples and non-normal data. The analysis stages included testing the measurement model—assessing convergent validity, construct reliability, and discriminant validity and the structural model to evaluate path coefficients, R^2 values, and hypothesis significance using bootstrapping with 5,000 resamples. The model was deemed strong if $R^2 > 0.75$, and hypotheses were accepted if T-statistics > 1.96 or p-values < 0.05.

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4. Results and Discussion

4.1. Hypothesis Testing Results Relationship Hypothesis

Outer model evaluation is carried out to ensure that the instruments used are valid and reliable.

Construct Validity and Reliability

The convergent validity test results show that all indicator outer loadings are above 0.70, and the AVE value for each construct is above the threshold of 0.50. Furthermore, the reliability test results show that the Cronbach's Alpha and Composite Reliability values for all constructs are above 0.70. Thus, it can be concluded that all constructs in this study have met the requirements for convergent validity and reliability. The complete results are presented in Table 1.

Table 1. Results of Convergent Validity and Construct Reliability Tests

Construct	Cronbach's Alpha	Composite Reliability	AVE	Information
Quality Standards (X1)	0.895	0.920	0.658	Valid & Reliabel
Teacher Competence (X2)	0.945	0.953	0.702	Valid & Reliabel
Quality of Learning (Y)	0.911	0.933	0.735	Valid & Reliabel

Discriminant Validity

Discriminant validity was tested using the Fornell-Larcker criterion. The results in Table 4 show that the square root of the AVE (diagonal numbers in bold) for each construct is higher than its correlation value with other constructs. This proves that each construct in this study is unique and measures a different concept.

Table 2. Results of the Discriminant Validity Test (Fornell-Larcker Criterion)

Construct	Teacher Competence	Quality of Learning	Quality Standards
Teacher Competence	0.838		

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Quality of Learning	0.754	0.857	
Quality Standards	0.689	0.712	0.811

4.2 Structural Model Test Results (Inner Model) and Hypothesis Testing

After the outer model is declared valid and reliable, testing continues to the inner model to evaluate the relationship between constructs and test the hypothesis.

Coefficient of Determination (R2)

The R2 value for the endogenous variable, Learning Quality (Y), is 0.683. This means that 68.3% of the variation in Learning Quality can be jointly explained by variations in Quality Standards and Teacher Competence. This value is categorized as moderate to strong, indicating that the research model has good explanatory power. The remaining 31.7% is explained by other variables outside the research model.

Hypothesis Testing

Hypothesis testing was conducted using a bootstrapping procedure to determine the path coefficient (β), T-statistics, and P-values. The complete results of the hypothesis testing are presented in Table 3.

Tabel 3. Hasil Pengujian Hipotesis

Hypothesis	Connection	Path Coefficient (β)	T-Statistics	P-Values	Decision
H1	Quality Standards -> Quality of Learning	0.350	2.851	0.004	Accepted
H2	Teacher Competence -> Quality of Learning	0.550	4.983	0.000	Accepted

Based on   Table 3, it can be concluded:

Hypothesis 1 (H1) is accepted. There is a positive and significant influence of Quality Standards on the Quality of Learning. ($\beta = 0.350$; $T = 2.851 > 1.96$; $p = 0.004 < 0.05$).

Hypothesis 2 (H2) is accepted. There is a positive and significant influence of teacher competence on the quality of learning.   ($\beta = 0.550$; $T = 4.983 > 1.96$; $p = 0.000 < 0.05$).

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4.2 Discussion

The Influence of Quality Standards on Learning Quality

The acceptance of H1 indicates that the implementation of Quality Standards, operationalized through Process Standards and Assessment Standards, has a significant contribution to improving the quality of learning. This finding aligns with the argument that schools with quality learning processes are those capable of meeting certain quality standards. When teachers systematically plan learning, implement interactive processes, and conduct objective assessments in accordance with the standards framework, the learning process becomes more structured, directed, and accountable. This structure provides a solid foundation, creating a more predictive and equitable learning environment for students, which is ultimately perceived as higher-quality learning.

The Influence of Teacher Competence on Learning Quality

The most striking finding of this study is the influence of teacher competence, which is not only statistically significant but also demonstrates a higher path coefficient ($\beta = 0.550$) than that of quality standards ($\beta = 0.350$). This suggests that teacher competence is a stronger predictor of learning quality in the research context. These findings are consistent with previous studies that confirm the crucial role of teacher competence in enhancing the effectiveness of the learning process (Supriyanto et al., 2019). Competent teachers are not merely implementers of educational standards as administrative routines (Chasanah & Ningsih, 2023); they serve as the "living curriculum," embodying the essence of education in action. Pedagogical competence enables them to design meaningful and motivating learning experiences. Personal competence makes them inspiring role models. Social competence fosters positive classroom communication and climate, while professional competence ensures the depth and accuracy of content delivery. A competent teacher is capable of creating a learning environment that is effective, enjoyable, and engaging ultimately enhancing student motivation and academic achievement (Yuliana & Raharjo, 2019).

Synergy and Dominance of Factors in Quality Improvement

If Quality Standards are the "framework" or "roadmap" for learning, then Teacher Competence is the "driving engine" that navigates that path. The results of this study clearly show that although both are important and synergistic, the human factor (Teacher Competence) has a more dominant driving force. A good framework in the hands of an unskilled "driver" may not reach the destination optimally. Conversely, a highly skilled "driver" (a competent teacher) is capable of producing an extraordinary journey (learning), even with a standard map, and will be superior if supported by an excellent map. This dominant influence of Teacher Competence suggests that investing in the development of individual educator capabilities is the most impactful strategy for continuously improving the quality of learning.

5. Conclusions

The implementation of Quality Standards has a positive and significant effect on the Quality of Learning at SMA Negeri 1 Leuwi Liang. This confirms that adherence to process standards and systematic assessments provide an important contribution in creating structured and accountable learning. Teacher Competence has a positive and significant effect on the Quality of Learning, and is a variable with a stronger influence than Quality Standards. This indicates that teachers' personal, social, pedagogical, and professional capabilities are the main determining factors in creating an effective and meaningful learning experience for students. Together, Quality Standards and Teacher Competence are able to explain 68.3% of the variance in the Quality of Learning. This indicates that the synergy between a standardized system and competent individuals is the main key to achieving superior learning quality.

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