The Influence of Teacher Competencies on Student Learning Achievement: A Comprehensive Analysis

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Abstract. Examining the impact of teacher competencies on student learning achievement, this research delves into crucial aspects, revealing data from 16 male and 64 female teachers, with females comprising 80% of the sample. The age range of 23 to 58 years, with a concentration between 30 and 46 years, underscores diverse educator backgrounds. Noteworthy is the gender-based disparity, with female teachers more prevalent in rural areas and males in urban regions. The research empirically tests hypotheses, confirming a positive correlation between teacher competencies (Personality, Pedagogy, Professionalism, and Social Engagement) and student learning achievement. The study underscores the pivotal role of teachers' robust competencies in fostering positive effects on student performance, advocating for strategic interventions such as teacher training, curriculum alignment, parental involvement, and innovative teaching methods to create a conducive learning environment.

Keywords: teacher competencies, student learning achievement, gender disparity, educator demographics, strategic interventions

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INTRODUCTION

It is evident that educators play a pivotal role within the realm of education, wielding the power to facilitate meaningful reforms. Among the various factors at play in the school environment, the cumulative experience of teachers exerts a consistently positive impact on student performance (Gupta & Gueneau, 2021; Laxmi & Patil, 2012). Their influence stands as a linchpin in the enhancement of the educational system and the attainment of societal educational objectives. Conversely, the significance of teachers' knowledge remains paramount. The outcomes achievable are largely contingent on the breadth of their expertise, with specialized content knowledge serving as a crucial bridge between subject matter proficiency and effective pedagogy, as well as fostering meaningful connections between content and students. Therefore, ensuring the competence of teachers emerges as an imperative (Jennings & Greenberg, 2019; Kunter et al., 2013).

It is widely acknowledged that a proficient educator must possess not only subject matter expertise but also be adept in employing diverse teaching strategies that foster the development of intricate skills in students. These skills encompass problem-solving abilities, the cultivation of positive attitudes, motivation to actively engage in society, and the nurturing of lifelong learning habits (Ghazali, 2020;Kivinen & Kaarakainen, 2014) . Consequently, these evolving educational demands have posed significant challenges to conventional institutions and methodologies employed in the initial and ongoing training of teachers (E.A, 2021).

The elements of teacher competence that have been mentioned have not been fully applied as reflected in the literacy and numeracy assessment scores (Rubin & Feezel, 1986). Therefore, a more in-depth study is needed by conducting a research entitled "The

Influence of Teacher Competencies on Student Learning Achievement: A Comprehensive Analysis".

LITERATURE REVIEW

Current educational reforms in Indonesia focus on enhancing the overall quality of pedagogy. These reforms primarily target primary school teaching and aim to provide educational institutions with the necessary conditions to facilitate sustainable, efficient, and lasting improvements in pedagogical practices. To achieve this goal, quality assessment systems for education have been introduced.

Personality Competence

McCrae & Jonathan (2018) state that personality is a distinctive pattern of thoughts, feelings, and behaviours that are consistently maintained within an individual. They identified five main personality traits: emotional stability, extroversion, openness to experience, adaptability, and conscientiousness (Cipto Wardoyo, 2015) .

Moreira et al., (2020) sees personality as a psychological construct that includes cognitive, emotional and motivational aspects that influence individual behaviour. His personality theory includes three main aspects: learnt intelligence, social cohesion and the transcendent self.

Pedagogical Competence

According to Klaassen, (2002) pedagogical competence includes subject matter knowledge, an understanding of how students learn, and the ability to plan lessons that promote student understanding and development. Pedagogical competence also includes the ability to recognise students' learning difficulties, provide appropriate support, and adapt lessons to students' individual needs.

Overall, pedagogic competence is the competence and knowledge that teachers need to plan, implement and assess the learning process. Teachers with good teaching skills are able to plan effective lessons, facilitate student understanding and development, and create a positive and inclusive learning environment.

Professional Competence

According to Mustafoeva, 2020, professional competence is a combination of knowledge, skills, and attitudes required to perform specific tasks in a job or area of expertise. Occupational competence includes mastering relevant material, understanding principles and practices relevant to one's work, and being able to apply that knowledge and principles to a variety of work situations.

Overall, professional competence refers to the combination of knowledge, skills and attitudes that are relevant and necessary for the performance of job duties and responsibilities. Professional competence includes mastery of subject matter, understanding of work principles and practices, and the ability to apply this knowledge and skills to a variety of work situations. Professional competence also includes a deep understanding of the ethics, norms and standards relevant to the profession.

Social Competence

According to experts, the definition of social competence for the 2019-2021 period describes a person's ability to interact effectively with others in various social situations. According to Garner & Mahatmya (2015) social competence is the ability to understand, manage and use social knowledge and interpersonal skills in social relationships. This includes the ability to recognise and understand the emotions of others, communicate effectively, show empathy, and resolve conflicts constructively.

Student Achievement

According to the Programme for International Assessment (PISA), an international assessment programme run by the Organisation for Economic Cooperation and

Development (OECD), student achievement is measured by their ability to solve problems and apply their knowledge and skills in social contexts. Daily life and critical and creative thinking (OECD, 2018).

METHOD
Research Design
This research design uses a quantitative approach (Froehlich et al., 2020). Quantitative research is research that works with numbers, whose data are in the form of numbers (scores or values, frequency ratings) which are analyzed using statistics to answer research questions or hypotheses or to make predictions about personality competency, pedagogical competence, professional competence, and social competence to student achievement to determine the dependent / independent variables X1, X2, X3 and Y which are interrelated in figure 1 .
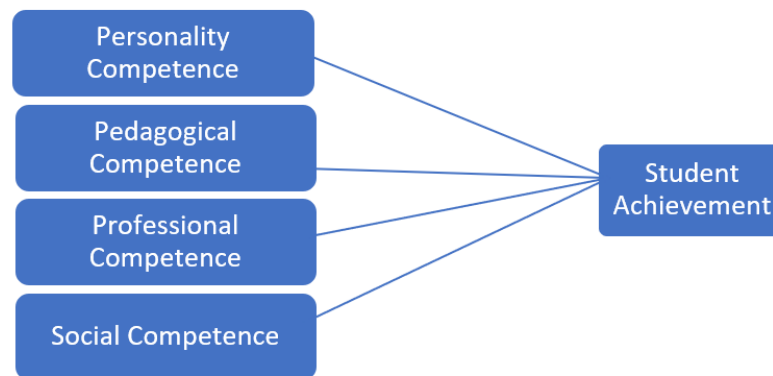
Figure 1. Research Model

The research model proposed in this study is a research model on personality competency, pedagogical competence, professional competence, and social competence to student achivement.

Sampling Method
In this study, the distribution of questionnaires was facilitated through Google Doc to gather data from respondents located in various places (a wider range). The questionnaire distribution process was conducted using the chat features on the WhatsApp social network, reaching out to suitable and willing respondents. Subsequently, respondents were required to answer the researcher's questions through an online questionnaire (Google Doc), which encompassed research on personality competency, pedagogical competence, professional competence, and social competence concerning student achievement.

The sampling technique employed in this research is a saturated sample. In this case, a saturated sample was chosen as the population consists of only 80 teachers who were willing to participate as respondents in the study.

Unit of Analysis

MSI and SPSS

The study employed the Method of Successive Interval (MSI) in conjunction with Statistical Product and Service Solutions (SPSS) as the chosen statistical method. The MSI involved utilizing various statistical analyses, including tests for differences, correlation, regression, and others, to conduct a comprehensive examination. By harnessing the capabilities of SPSS, the analysis yielded descriptive statistical information such as averages, medians, and modes. Additionally, SPSS facilitated the visualization of data through graphical representations and enabled hypothesis testing. This combination of the MSI technique and SPSS not only allowed for a meticulous examination of the data but also provided a robust platform for generating valuable insights into the studied phenomena.

RESULTS

Hypothesis
1. There is a significant influence between teachers' personality competence and student learning achievement.
2. There is a significant influence between teachers' social competence and student learning achievement.
3. There is a significant influence between teachers' pedagogical competence and student learning achievement.
4. There is a significant influence between teachers' professional competence and student learning achievement.
5. There is a significant influence between teachers' personality competence, social competence, pedagogical competence, and professional competence on student learning achievement.
6. There is an effort to enhance student learning through the improvement of teacher competencies.

- **Description of the Variable of Teacher Personality Competence on Student Learning Achievement**

  The depiction of teacher personality competence across various essential aspects in the educational realm is noteworthy. On average, all facets of teacher personality competence reach an impressive 92%, indicating an overall excellent level of competence. These findings strongly suggest that teacher personality competence has a significant positive impact on student learning achievement. Teachers with high integrity, empathy towards students, effective communication skills, and a willingness to collaborate in teams tend to foster a more effective learning environment, ultimately enhancing student learning outcomes. Therefore, the enhancement of teacher personality competence should be a focal point in endeavors to improve educational quality.

- **Description of the Variable of Teacher Pedagogical Competence on Student Learning Achievement**

  In conclusion, the pedagogical competence of teachers appears to exert a positive influence on student learning achievement. First, the findings indicate that teachers are proficient in planning lessons according to students' needs, with an impressive 87.0% reaching the "Good" criteria. This suggests that a majority of teachers possess the ability to plan lessons tailored to students' needs, positively impacting understanding and

academic performance. Second, teachers demonstrate skill in selecting and implementing effective teaching strategies, as evidenced by 86.8% meeting the "Good" criteria.

This underscores their capability to choose methods that facilitate student comprehension. Third, teachers effectively convey lesson content in a clear and engaging manner, with a slightly higher percentage at 89.5%, indicating a majority excel in communication skills. Fourth, teachers adeptly manage classrooms, creating a conducive learning environment, achieving 87.8%. Lastly, teachers master objective evaluation methods, measuring student progress fairly and objectively, reaching 86.5%. Overall, the average pedagogical competence reaches 88%, emphasizing its pivotal role in enhancing student learning achievement. Teachers proficient in planning, using effective strategies, clear communication, classroom management, and objective evaluation tend to create more meaningful learning experiences, ultimately improving student academic performance. Therefore, the development of teachers' pedagogical competence should be a key focus in endeavors to enhance educational quality.

- **Description of the Variable of Teacher Professional Competence on Student Learning Achievement**

In conclusion, teacher professional competence appears to have a positive impact on student learning achievement. Firstly, teachers demonstrate a deep and up-to-date mastery of subject matter, with an impressive 87.0%, meeting the "Good" criteria. This indicates a strong understanding of the taught material, supporting student comprehension and ultimately improving learning achievement. Secondly, teachers exhibit a good understanding of curriculum and learning standards, scoring 85.0%, meeting the "Fairly Good" criteria, suggesting a need for further improvement.

This understanding is crucial for aligning teaching with standards and learning objectives. Thirdly, teachers incorporate technology in teaching and learning, scoring 84.8%, indicating openness to technological integration, enriching student learning experiences. Fourthly, teachers can apply knowledge and skills in a learning context, achieving 87.5%, connecting theory with practice for more relevant and comprehensible lessons. Fifthly, teachers are committed to professional development through training and learning, with a score of 87.5%, indicating a willingness to continually learn and enhance their skills as educators.

Lastly, teachers exhibit excellent understanding of literacy (85.5%) and numeracy (84.3%), fundamental skills crucial in the learning process. Overall, the average professional competence of teachers reaches 85.9%, emphasizing its pivotal role in enhancing student learning achievement. Teachers proficient in subject matter, curriculum understanding, technology integration, practical application of knowledge, commitment to professional development, and strong literacy and numeracy comprehension tend to create a more enriching learning experience for students. Therefore, the development of teacher professional competence stands as a crucial factor in elevating educational quality.

- **Description of the Variable of Teacher Social Competence on Student Learning Achievement**

In conclusion, the findings on teacher social competence indicate that a majority of the questions achieved commendable scores, with an average percentage reaching 87.1%. These results signify that most teachers have demonstrated good social competence in instructional activities. Despite variations in achievement for each question, the overall level of teacher social competence in this survey can be assessed as satisfactory.

Furthermore, the findings suggest that teacher social competence has a positive impact on student learning achievement, with an average percentage reaching 87.1%, falling within the "Fairly Good" criteria.

Teachers who excel in effective interaction, engage in social activities within the school, empower students, and address conflicts tend to create a learning environment supportive of student academic achievement.

- **Description of the Variable of Student Learning Achievement**

From the questionnaire, it can be inferred that the majority of students demonstrate fairly good academic performance across various aspects, including understanding of the material, communication skills, learning motivation, class attendance, participation in academic activities, and collaboration within groups. This indicates the presence of a positive learning environment that supports students' academic development. However, there are some students who may require additional attention in terms of discipline and involvement in social activities.

Data Analysis

Validity and Reliability Testing

The decision-making process for item validity involves initial processing using the Method of Successive Interval (MSI), where ordinal data is transformed into interval data. Subsequently, data processing is conducted using SPSS. The SPSS output yields values for Corrected Item-Total Correlation and Alpha coefficients. An item is considered valid if the Corrected Item-Total Correlation value is greater than or equal to 0.30. Furthermore, it is deemed reliable if the reliability coefficient is greater than or equal to 0.700 (Yaya, 2015).

Tabel 1. Case Processing Summary

		N	%
Cases	Valid	80	100.0
	Excluded[a]	0	.0
	Total	80	100.0

Listwise deletion based on all variables in the procedure.

Table 1 provides information about the sample size used in the validity and reliability tests. A total of 80 respondents were included, and the questionnaire consisted of 39 questions.

Tabel 2 Reliability Statistics

Cronbach's Alpha	N of Items
.973	39

Table 2 displays the Cronbach's alpha reliability coefficient. The reliability value of

0.9730, exceeding the threshold of 0.700, indicates that the instrument is reliable.

The hypothesis testing for H1, H2, H3, and H4 using the t-test.

Referring to Figure 2 the significance test yields a p-value of 0.206, surpassing the chosen significance level of 0.05. Additionally, the computed t-value of -1.227 falls below the critical t-value of 1.99210. Consequently, the rejection of only H1 implies insufficient evidence to assert a significant influence of Personality Competence on Students' Learning Achievement. These findings suggest that the available data do not substantiate a robust correlation between personality competence and academic performance.

Moreover, it is crucial to acknowledge the intricate interplay of factors that contribute to learning outcomes. While this study focused on personality competence, the broader context of academic success involves a multitude of variables. Consideration of additional factors such as teaching methods, study habits, and external influences may provide a more comprehensive understanding of the dynamics affecting student success. Future research endeavors should explore these variables to refine our understanding of the multifaceted nature of academic performance.

In summary, the statistical analysis indicates the non-significance of the influence of personality competence on students' learning achievement, evident through the non-rejection of H0 and the rejection of only H1. However, recognizing the intricate interplay of various factors in the educational context is essential for a holistic understanding. This study sets the stage for future investigations to delve deeper into the nuanced aspects influencing academic performance.
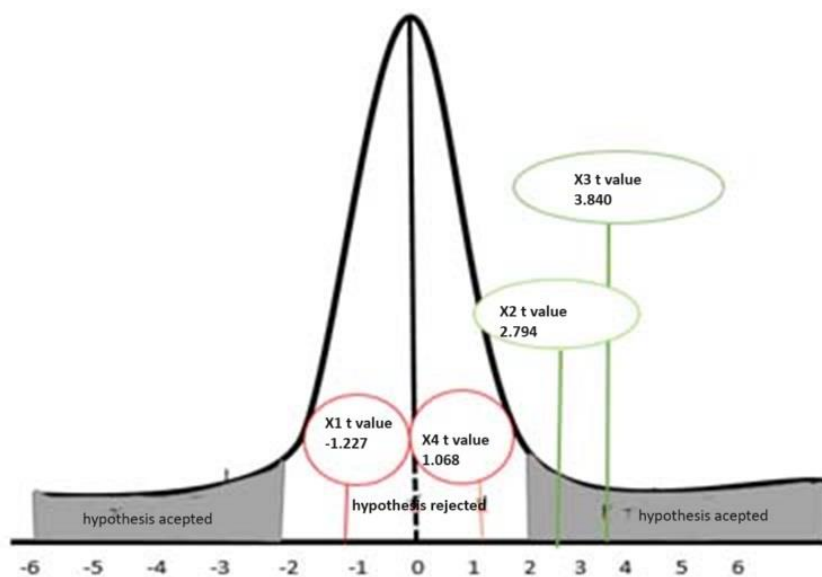

Figure 2. Curve 4.5 T-Test

It is crucial to assess the extent of contribution from each independent variable to the dependent variable and identify the dominant influence of the dependent variable on the independent variable. The impact of independent variables is often measured through predictor contributions, which delineate the magnitude of the contributions of each dependent variable to the independent variable. There are two categories of predictor

contributions: Effective Contribution (EC) and Relative Contribution (RC). Effective Contribution serves as a measure of a predictor variable's contribution to the dependent variable in regression analysis, while Relative Contribution indicates the significance of a predictor variable to the square of the total regression. Understanding both categories of predictor contributions provides deeper insights into the dynamics of the relationships among variables in the context of regression analysis.

CONCLUSION

In conclusion, the study yields several key insights with implications for educational policies and practices. Firstly, recognizing and understanding the diversity among teachers, including gender differences, interests, and educational backgrounds, is crucial for designing more inclusive and student-centric learning approaches. Secondly, aligning professional development programs with the distinct interests and tendencies of male and female teachers can enhance the relevance and impact of skill-building initiatives. The research underscores the need for curriculum refinement and instructional method development to accommodate variations in teaching approaches and teacher interests, contributing to overall improvements in the quality of education.

Additionally, the findings emphasize the importance of enhancing pedagogical, professional, and social competencies among teachers. Improved training and coaching programs in these aspects are vital for supporting advancements in student learning achievement. Furthermore, reinforcing the use of technology and incorporating innovative teaching methods can create more engaging and relevant learning experiences.

Collaborative programs among teachers, schools, and parents are recommended to capitalize on the positive impact of teacher competencies on student achievement. Specialized support programs, such as tutoring or mentoring, could benefit students facing learning difficulties. Further research is proposed to analyze the concrete impact of teacher competency differences on student learning, including specific interventions to enhance educational quality. Stakeholders in education, including policymakers and parents, are encouraged to raise awareness of the pivotal role teacher competencies play in shaping student learning outcomes, supported by education and outreach efforts. Finally, continuous monitoring and evaluation of managerial actions are crucial for assessing their impact on student development, necessitating periodic updates and adjustments.

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