

TEACHERS' PEDAGOGICAL COMPETENCE AND STUDENTS' METACOGNITIVE SKILLS IN ISLAMIC RELIGIOUS EDUCATION

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Abstract

This study examined the relationship between teachers' pedagogical competence and students' metacognitive skills in Islamic Religious Education among eighth-grade students at an Indonesian junior high school. The study used a quantitative correlational design involving 73 students selected through saturated sampling. Data were collected using Likert-scale questionnaires and analysed using normality and linearity tests and simple linear regression in SPSS 22. The findings showed that teachers' pedagogical competence was categorised as very high (85%), while students' metacognitive skills were also categorised as very high (82%). Regression analysis demonstrated a significant positive relationship between teachers' pedagogical competence and students' metacognitive skills ($p < .05$). The coefficient of determination (R^2) that pedagogical competence explained 43.5% of the variance in students' metacognitive skills, with the remaining variance attributable to other factors. The findings indicate that stronger pedagogical competence is associated with higher levels of students' metacognitive skills and reflective learning processes in Islamic Religious Education.

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Introduction

Education holds a central role in developing students' intellectual, emotional, and reflective capacities. In the learning process, teachers are expected not only to transfer knowledge but also to facilitate students' cognitive development through effective instructional practices. One important factor influencing learning quality is teachers' pedagogical competence, which refers to teachers' ability to understand students' characteristics, design learning activities, implement instructional strategies, and evaluate learning outcomes effectively (Shulman, 1987). In current education, pedagogical competence is increasingly important because effective teaching practices contribute considerably to students' higher-order thinking and self-regulated learning skills (Karlen et al., 2020; Ansari & Saleh, 2021; Michalsky, 2024).

A central dimension of higher-order thinking is metacognitive skills. Metacognition refers to individuals' awareness and regulation of their own thinking processes, including planning, monitoring, and evaluating learning activities (Flavell, 1979). Students with strong metacognitive skills tend to demonstrate better problem-solving skills, greater learning independence, and higher academic achievement because they can effectively regulate and reflect on their mental processes (Stanton et al., 2021; Ambaryani & Putranta, 2022; Rivas et al., 2022; Li et al., 2023). In Islamic Religious Education, metacognitive skills are particularly important because students are encouraged not only to understand religious concepts cognitively but also to reflect critically and apply moral values in daily life.

Despite the importance of metacognition-related skills, many students still demonstrate relatively low metacognitive awareness during classroom learning. Previous studies reported that students often experience difficulties in planning learning strategies, monitoring understanding, and evaluating learning outcomes independently (Teng, 2020; Zheng et al., 2020; Hongsuchon et al., 2022). Low metacognitive skills are commonly reflected in students' dependence on teachers, limited critical thinking, inactive learning behaviour, and difficulties solving complex problems. These conditions indicate that instructional practices still need to provide stronger support for the development of reflective and self-regulated learning processes.

Teachers' pedagogical competence is considered a major factor influencing students' metacognitive skills. According to the constructivist learning theory proposed by Lev Vygotsky (2018), students construct knowledge actively through guided interaction and instructional support. Teachers with strong pedagogical competence are better able to design learning activities that trigger students' thinking, encourage reflection, and facilitate active engagement. From a cognitive learning perspective, pedagogical competence may support metacognitive development through fostering students' awareness of their educational processes. Teachers who provide structured questioning, reflective discussion, feedback, and guided learning activities may help students develop planning, monitoring, and evaluation strategies during learning (Pang, 2022; Golden, 2023; Mohamad & Tasir, 2023). Consequently, pedagogically effective classrooms may create learning environments that strengthen students' self-regulated and reflective thinking processes. Effective pedagogical

practices such as questioning strategies, collaborative learning, feedback provision, and reflective instruction support the development of students' metacognitive skills.

Several previous studies have demonstrated a positive relationship between pedagogical competence and students' cognitive development. Research conducted by König et al. (2021) found that teachers' pedagogical knowledge substantially contributed to students' learning achievement and metacognitive skills. Similarly, Colomer et al. (2020) reported that effective pedagogical competence improved students' reflective thinking and learning independence in secondary education contexts. In addition, research by Nurhayati and Suryani (2022) revealed that instructional strategies emphasising student-centred learning positively influenced students' metacognitive awareness and self-regulated learning behaviours.

Although previous studies have examined pedagogical competence and cognitive learning outcomes, several important gaps remain in the literature. First, many existing studies have focused primarily on academic achievement, motivation, or general instructional effectiveness rather than students' metacognitive skills as a specific higher-order cognitive construct. Second, empirical evidence studying the relationship between teachers' pedagogical competence and metacognitive development in Islamic Religious Education contexts remains relatively limited, particularly at the junior high school level in Indonesia. Third, previous studies have rarely explored how pedagogical competence may support reflective thinking and self-regulated learning processes within religious education settings that emphasise both cognitive understanding and moral internalisation.

Preliminary observations at a public junior high school in Siak Hulu, Indonesia, indicated that several students still demonstrated limited metacognitive skills during Islamic Religious Education activities. Some students experienced difficulties in organising learning strategies, monitoring comprehension, and evaluating their own understanding independently. In addition, classroom learning tended to remain teacher-centred, limiting opportunities for reflective and self-regulated learning. These findings stress the importance of strengthening teachers' pedagogical competence to better support students' metacognitive skills.

Therefore, this study intends to examine the relationship between teachers' pedagogical competence and students' metacognitive skills in Islamic Religious Education among eighth-grade students at an Indonesian junior high school. The findings are expected to contribute theoretically to the literature on pedagogical competence and metacognitive learning, and practically to improving instructional quality in Islamic Religious Education.

Research Method

This study applied a quantitative correlational design to examine the relationship between teachers' pedagogical competence and students' metacognitive skills in Islamic Religious Education. Quantitative correlational research is commonly used to analyse relationships and predictive relationships between variables through statistical analysis (Creswell & Creswell, 2018; Taherdoost, 2022). The study was

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conducted at a public junior high school in Siak Hulu District, Riau Province, Indonesia, from January to April 2026.

The population consisted of 73 eighth-grade students, all of whom were selected as research participants through saturated sampling because the population size was relatively small (Etikan & Bala, 2017; Ren et al., 2021). Data were collected using Likert-scale questionnaires and documentation techniques. The questionnaire instruments measured teachers' pedagogical competence and students' metacognitive skills using a five-point scale ranging from strongly disagree to strongly agree (Joshi et al., 2015).

Prior to data collection, permission to conduct the study was obtained from the school administration. Students participated voluntarily, and the confidentiality of participants' responses was maintained throughout the research process. The collected data were used exclusively for academic research. Instrument validity was tested using Pearson product-moment correlation analysis, while reliability testing employed Cronbach's alpha coefficient through SPSS. The results indicated that the instruments met the validity and reliability criteria for educational research (Taber, 2018). The questionnaire items represented multiple dimensions of pedagogical competence and metacognitive skills, and were adapted from established educational research instruments, therefore supporting the consistency and comprehensiveness of the measurement process. Data analysis included descriptive statistics, normality testing, linearity testing, and simple linear regression analysis using SPSS to examine the relationship between teachers' pedagogical competence and students' metacognitive skills.

Results and Discussion

A. *Descriptive Analysis*

Descriptive statistical analysis was conducted to examine the levels of teachers' pedagogical competence and students' metacognitive skills in Islamic Religious Education. Descriptive statistics are important in quantitative educational research because they provide an overview of the distribution, tendency, and characteristics of research variables before inferential analysis is performed (Hair et al., 2019). The analysis was based on questionnaire responses collected from 73 eighth-grade students.

The findings indicated that teachers' pedagogical competence was categorised as very high, with a percentage score of 85%. This result suggests that teachers demonstrated strong abilities in planning instruction, facilitating classroom learning, implementing appropriate teaching strategies, and evaluating learning outcomes effectively. Students generally perceived that teachers clearly explained the learning materials, facilitated classroom interaction, and promoted active participation during Islamic Religious Education activities. Effective pedagogical competence is considered important for creating meaningful and student-centred learning environments (Shulman, 1987; Sørensen et al., 2023; Bhardwaj et al., 2025).

The descriptive analysis also revealed that students' metacognitive skills were categorised as very high, with a percentage score of 82%. This finding indicates that

students demonstrated relatively strong abilities in planning learning activities, monitoring their understanding, evaluating learning outcomes, and thinking about their learning approaches. Metacognitive skills play a crucial role in supporting students' self-regulated learning and higher-level thinking, as students become more aware of their thinking processes during learning activities (Flavell, 1979). Table 1 presents the descriptive statistical results of the research variables.

Table 1. Descriptive statistics of research variables

Variable	Percentage (%)	Category
Teachers' Pedagogical Competence	85	Very High
Students' Metacognitive Skills	82	Very High

The high level of teachers' pedagogical competence found in this study indicates that effective instructional practices were implemented during Islamic Religious Education learning. Teachers with strong pedagogical competence are generally better able to understand students' learning characteristics, select appropriate instructional strategies, and create learning environments that cultivate critical and reflective thinking. According to constructivist learning theory proposed by Lev Vygotsky, learning occurs effectively when teachers provide guidance and social interaction that support students' cognitive development.

The findings regarding students' metacognitive skills are consistent with previous studies emphasising the importance of instructional quality in developing reflective thinking and self-regulated learning. Teng (2020) reported that effective instructional support positively contributes to students' metacognitive awareness and learning performance. Similarly, König et al. (2021) found that teachers' pedagogical knowledge considerably influences students' metacognitive skills and learning development.

Compared with previous findings, the present study demonstrated relatively high percentages for both pedagogical competence (85%) and metacognitive skills (82%), indicating that instructional practices in Islamic Religious Education can improve students' reflective learning abilities.

These results indicate that pedagogical competence is closely associated with the development of students' metacognitive skills. Teachers who effectively organise learning activities, provide feedback, encourage discussion, and facilitate reflection may help students become more aware of their learning strategies and thought processes. The findings suggest that pedagogically competent teachers create learning environments that prompt students to reflect more consciously on their learning strategies and thought processes. Through guided questioning, reflective instruction, classroom interaction, and constructive feedback, students may become more capable of monitoring their understanding, evaluating their learning progress, and adjusting their learning strategies independently. Consequently, pedagogical competence functions not only as instructional expertise but also as cognitive support that promotes metacognitive awareness and self-regulated learning. Therefore, strengthening pedagogical competence is important for promoting reflective,

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independent, and meaningful learning experiences in Islamic Religious Education contexts.

B. Inferential Statistical Analysis

Inferential statistical analysis was conducted to examine the relationship between teachers' pedagogical competence and students' metacognitive skills in Islamic Religious Education. Prior to hypothesis testing, the data were tested for normality and linearity to ensure that the assumptions for regression analysis were satisfied. The normality test using the One-Sample Kolmogorov-Smirnov method indicated that the data were normally distributed because the significance value exceeded .05. In addition, the linearity test demonstrated a linear relationship between teachers' pedagogical competence and students' metacognitive skills, indicating that regression analysis could be appropriately performed (Ghasemi & Zahediasl, 2012).

The regression results presented a significant positive relationship between the variables ($p < .05$). This finding indicates that teachers' pedagogical competence was significantly associated with students' metacognitive skills in Islamic Religious Education teaching contexts. Table 2 presents the results of the inferential statistical analysis.

Table 2. Results of simple linear regression analysis

Variable	R	R ²	Adjusted R ²	Regression Coefficient (β)	Sig.
Teachers' Pedagogical Competence → Students' Metacognitive Skills	0.659	0.435	0.427	0.614	< .05

Note: N=73, $p < .05$.

The coefficient of determination (R^2) indicated an R^2 value of .435, indicating that teachers' pedagogical competence explained 43.5% of the variance in students' metacognitive skills, while the remaining 56.5% was influenced by other factors outside the scope of the study. The correlation coefficient ($R = .659$) indicated a strong positive relationship between teachers' pedagogical competence and students' metacognitive skills. Furthermore, the regression coefficient ($\beta = .614$) indicates that increases in pedagogical competence were associated with increases in students' metacognitive skills during Islamic Religious Education learning activities.

The findings support the theoretical perspective that effective pedagogical practices play an important part in facilitating students' cognitive and reflective development. According to Lev Vygotsky, intellectual development occurs through guided learning interactions in which teachers facilitate students' thinking processes and reflective understanding. Teachers with strong pedagogical competence are generally better able to organise meaningful learning experiences, encourage reflection, and support students' self-regulated learning behaviours.

The present findings are consistent with previous studies studying the relationship between pedagogical competence and elevated thinking skills. König et al. (2021) found that teachers' pedagogical knowledge strongly influenced students' metacognitive skills and academic development. Similarly, Teng (2020) reported that

instructional support and reflective teaching practices positively contributed to students' metacognitive awareness and learning performance. In addition, [Colomer et al. \(2020\)](#) demonstrated that effective pedagogical competence improved students' reflective learning and independent learning abilities in secondary education contexts.

From a theoretical perspective, the findings uphold constructivist learning theory by demonstrating that instructional guidance and pedagogical interaction are strongly associated with students' reflective cognitive development. The study also suggests that metacognitive skills may develop more effectively when instructional environments encourage active reflection, learning awareness, and guided metacognitive skills rather than passive information reception alone. Compared with previous studies, the current research demonstrated a relatively strong explanatory contribution ($R^2 = .435$) within the context of Islamic Religious Education. The results indicate that pedagogical competence is not only associated with academic instruction but is also closely related to students' reflective thinking and self-awareness during learning activities. Therefore, strengthening teachers' pedagogical competence is necessary to promote students' metacognitive skills and create more meaningful learning experiences in Islamic Religious Education classrooms.

Limitations

This study has several limitations that should be considered when interpreting the findings. First, the study involved a relatively small sample drawn from a single junior high school, which may limit the generalizability of the results to wider educational contexts. Second, the study applied a correlational research design; therefore, causal conclusions regarding the relationship between pedagogical competence and students' metacognitive skills cannot be fully established. Third, the data were collected using self-report questionnaires, which may be influenced by students' subjective perceptions and social desirability bias. Future studies should involve larger, more diverse samples, employ mixed-methods or longitudinal approaches, and examine additional variables related to metacognitive development and instructional quality.

Conclusion

The findings of this study demonstrated that teachers' pedagogical competence and students' metacognitive skills in Islamic Religious Education were both categorised as very high. Students demonstrated relatively strong abilities in planning, monitoring, and evaluating learning activities, while teachers were perceived to employ effective instructional practices that supported classroom interaction and reflective learning processes. The inferential statistical analysis additionally showed a significant positive relationship between teachers' pedagogical competence and students' metacognitive skills, indicating that pedagogically effective instructional environments were associated with stronger reflective and self-regulated learning behaviours among students.

In practice, the data show that strengthening pedagogical competence may help teachers create more reflective, student-centred learning environments that support

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students' higher-order cognitive development. Instructional strategies involving guided reflection, questioning, feedback, and active classroom interaction may therefore become important components of Islamic Religious Education. The inferential statistical analysis additionally demonstrated that teachers' pedagogical competence was significantly associated with students' metacognitive skills. The coefficient of estimation indicated that pedagogical competence accounted for 43.5% of the variance in students' metacognitive skills, showing a strong relationship between the variables. These results indicate that teachers with strong pedagogical competence are better able to foster reflective thinking, learning awareness, and independent learning behaviours among students. Therefore, strengthening teachers' pedagogical competence is necessary to enhance the quality of Islamic Religious Education instruction and promote students' higher-order cognitive development.

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