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The Role of Teachers in Enhancing Students' Critical and Cognitive Thinking Skills

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ABSTRAK

The increasing demands of 21st-century education highlight the importance of developing students' critical and cognitive thinking skills, which are essential for problem-solving, decision-making, and meaningful learning. This study aims to examine the role of teachers in enhancing these skills through a systematic analysis of existing literature. A qualitative approach was employed using a systematic literature review design. Data were collected from 25 scholarly articles published between 2015 and 2025, sourced from reputable academic databases. The selection process followed specific inclusion and exclusion criteria, and the data were analyzed using thematic analysis involving data reduction, categorization, and synthesis. The findings reveal that teachers play multifaceted roles as facilitators, designers, and motivators in fostering students' higher-order thinking skills. In promoting critical thinking, teachers utilize student-centered strategies such as problem-based learning, project-based learning, inquiry-based learning, and structured discussions. The integration of technology and social media enhances students' engagement and critical reflection when guided effectively. Additionally, teachers support the development of metacognitive skills through reflective activities and guided questioning. In terms of cognitive thinking, teachers design structured learning experiences, apply collaborative and analytical approaches, and use higher-order questioning to stimulate deeper understanding. Student engagement, motivation, and a supportive learning environment are key factors influencing cognitive development. In conclusion, the study emphasizes that effective teacher roles and pedagogical strategies are crucial in developing students' critical and cognitive thinking skills. These findings contribute to the theoretical understanding of student-centered learning and provide practical implications for improving instructional practices in the digital era.

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INTRODUCTION

The rapid advancement of digital technology and the demands of 21st-century education have significantly reshaped the goals of modern learning, placing greater emphasis on higher-order thinking skills, particularly critical and cognitive thinking. These skills are essential for enabling

students to analyze information, evaluate arguments, and make informed decisions in complex and dynamic environments. As a result, the role of teachers has become increasingly important in facilitating learning processes that promote not only knowledge acquisition but also the development of students' critical and cognitive capacities. Critical thinking is widely recognized as a key competency that must be fostered through innovative and student-centered learning approaches (Sari & Wardhani, 2020).

Teachers play a central role in shaping students' thinking skills through the design and implementation of effective instructional strategies. The use of teaching methods that encourage analysis, reflection, and problem-solving has been shown to significantly enhance students' critical thinking abilities (Galindo-Domínguez et al., 2024). In addition, teachers act as facilitators who create learning environments that actively engage students cognitively, enabling them to participate in meaningful learning experiences (Munawwaroh, 2024). This aligns with the notion that critical thinking develops through metacognitive processes involving analysis, evaluation, and decision-making (Galindo-Domínguez et al., 2024).

In the digital era, the integration of technology, including social media, has further expanded the opportunities for developing students' thinking skills. Social media can serve as a platform for discussion, evaluation, and problem-solving activities that foster critical thinking when used appropriately (Abd Halim et al., 2024). Moreover, interactive and technology-based learning environments have been found to enhance students' cognitive skills by promoting active engagement and collaboration (Juni et al., 2024). For instance, project-based learning supported by digital tools has proven effective in improving students' critical thinking skills (Rosiyanah et al., 2019). Similarly, problem-based learning strategies designed by teachers play a crucial role in facilitating higher-order thinking (Hariyanto & Maghfiroh, 2024).

Previous studies have also highlighted the importance of active student participation in developing critical thinking. Engagement in academic discussions, particularly through digital platforms, has been shown to contribute significantly to the improvement of students' critical thinking skills (Duterte, 2025). However, it is important to note that passive use of technology does not yield the same benefits, indicating that the effectiveness of digital tools depends largely on how they are integrated into the learning process (Duterte, 2025). Furthermore, student-centered learning strategies that emphasize interaction, collaboration, and reflection are essential for fostering higher-order thinking skills (Abbas et al., 2023; Reid & Mang, 2023).

Despite the growing body of research on critical thinking and technology integration, there are still gaps in the literature regarding the specific role of teachers in enhancing both critical and cognitive thinking skills in classroom contexts. Many studies have focused primarily on the use of technology or instructional models, while less attention has been given to how teachers strategically guide, facilitate, and scaffold students' thinking processes. Additionally, the interplay between teacher roles, instructional strategies, and students' cognitive engagement remains underexplored, particularly in secondary education settings.

Therefore, this study offers novelty by emphasizing the comprehensive role of teachers not only as instructors but also as facilitators, motivators, and designers of learning experiences that foster critical and cognitive thinking skills. This research integrates perspectives on teacher roles, student-centered learning, and technology-enhanced instruction to provide a more holistic understanding of how thinking skills can be effectively developed in the classroom.

Based on the above background, this study was guided by the following research questions: (1) How do teachers enhance students' critical thinking skills in the learning process as reflected in the existing literature? and (2) How do teachers contribute to the development of students' cognitive thinking skills based on previous scholarly studies? Accordingly, the objective of this study was to systematically analyze and synthesize relevant literature to explore the role of teachers in fostering students' critical and cognitive thinking skills.

The significance of this study lies in its contribution to theoretical and conceptual understanding. Theoretically, it enriches the existing body of knowledge by synthesizing previous research on teacher roles and higher-order thinking skills, highlighting patterns, trends, and key

findings across studies. Practically, this study provides a comprehensive reference for educators and researchers in identifying effective teaching strategies and approaches that can be applied to enhance students' critical and cognitive thinking skills in various educational contexts, particularly in the digital era.

METHODS

This study employed a qualitative research approach using a literature review design to examine the role of teachers in enhancing students' critical and cognitive thinking skills. A literature review was considered appropriate as it allows researchers to systematically analyze, synthesize, and interpret findings from previous studies to develop a comprehensive understanding of a particular topic. Literature-based research enables the identification of patterns, gaps, and emerging trends in the field of education (Snyder, 2019; Xiao & Watson, 2019).

1. Research Design

This study adopted a systematic literature review design. The purpose of this design was to collect, evaluate, and synthesize relevant scholarly articles related to teachers' roles in developing students' critical and cognitive thinking skills. A systematic review ensures transparency, rigor, and replicability in selecting and analyzing literature (Page et al., 2021). Additionally, this design helps minimize bias and provides a structured approach to reviewing existing knowledge (Paul & Criado, 2020).

2. Data Sources and Sample Selection

The data for this study consisted of scholarly articles published in reputable international and national journals within the last ten years (2015–2025). Articles were retrieved from academic databases such as Google Scholar, Scopus-indexed journals, and other peer-reviewed sources. The inclusion criteria were: (1) articles focusing on teachers' roles, (2) studies related to critical thinking and cognitive skills, and (3) empirical or review studies published in English.

The exclusion criteria included articles that were not peer-reviewed, not relevant to the topic, or published outside the specified time range. Purposeful sampling was used to select relevant literature that directly addressed the research objectives. Purposeful selection is widely used in literature reviews to ensure that only relevant and high-quality sources are included (Palinkas et al., 2015; Snyder, 2019). A total of 25 articles were selected and analyzed in this study.

3. Research Instruments

The primary instrument used in this study was a document analysis framework. This framework was designed to systematically extract and organize relevant information from selected articles, including research objectives, methods, findings, and conclusions. Document analysis is an effective method in qualitative research for interpreting textual data and identifying meaningful patterns (Bowen, 2009; Morgan, 2022).

The analysis framework included key indicators such as teacher roles, instructional strategies, student engagement, and outcomes related to critical and cognitive thinking skills. The use of structured coding ensured consistency and reliability in data extraction.

4. Data Collection Procedures

The data collection process was conducted in several stages. First, relevant keywords such as "teacher role," "critical thinking skills," "cognitive skills," and "technology in education" were used to search for articles in selected databases. Second, the titles and abstracts of the articles were screened to determine their relevance. Third, full-text articles that met the inclusion criteria were selected for further analysis.

Finally, the selected articles were organized and categorized based on themes related to the research questions. A systematic approach to data collection is essential to ensure the credibility and validity of literature review findings (Xiao & Watson, 2019; Page et al., 2021).

5. Data Analysis Techniques

The data were analyzed using thematic analysis. This technique involved identifying, coding, and categorizing key themes related to teachers' roles in enhancing students' critical and cognitive thinking skills. The analysis process included data reduction, data display, and conclusion drawing.

Thematic analysis is widely used in qualitative research to interpret patterns and generate meaningful insights from textual data (Braun & Clarke, 2021; Terry et al., 2017).

The findings from the selected articles were synthesized to identify common patterns, similarities, and differences across studies. This process allowed the researcher to develop a comprehensive understanding of how teachers contribute to the development of students' higher-order thinking skills.

6. Trustworthiness of the Study

To ensure the credibility and trustworthiness of the findings, this study applied several strategies, including source triangulation, transparency in the selection process, and systematic documentation of analysis procedures. Using multiple sources and clearly defined criteria enhances the reliability and validity of literature review studies (Nowell et al., 2017; Snyder, 2019).

RESULTS

1. Teachers' Role in Enhancing Students' Critical Thinking Skills

a. Teachers as Facilitators of Critical Thinking

The findings from the reviewed literature consistently indicate that teachers play a pivotal role as facilitators in fostering students' critical thinking skills. Rather than functioning as mere transmitters of knowledge, teachers are expected to create student-centered learning environments that actively engage learners in the construction of knowledge. Such environments encourage learners to take responsibility for their own learning and to participate in meaningful cognitive activities. Student-centered approaches have been shown to significantly enhance higher-order thinking skills by promoting autonomy, inquiry, and reflective learning processes (Reid & Mang, 2023; Abbas et al., 2023).

In this context, active participation and inquiry-based learning emerge as key mechanisms through which critical thinking is developed. Teachers facilitate this process by encouraging students to ask questions, explore problems, and seek evidence-based solutions. This aligns with the view that critical thinking is inherently linked to metacognitive processes involving analysis, evaluation, and reflection (Galindo-Domínguez et al., 2024). Furthermore, effective teachers guide students in interpreting information, evaluating arguments, and reflecting on their reasoning processes, thereby strengthening their ability to think critically in both academic and real-world contexts.

b. Instructional Strategies to Promote Critical Thinking

The literature highlights several instructional strategies that are particularly effective in promoting students' critical thinking skills. Among these, Problem-Based Learning (PBL) has been widely recognized as a powerful approach that engages students in solving complex, real-world problems. Through PBL, students are required to analyze situations, identify relevant information, and develop logical solutions, thereby enhancing their analytical abilities (Hariyanto & Maghfiroh, 2024).

Similarly, Project-Based Learning (PjBL) has been shown to foster independent and critical thinking by involving students in long-term projects that require planning, collaboration, and evaluation. Research indicates that PjBL supported by digital tools significantly improves students' critical thinking skills by encouraging active exploration and knowledge construction (Rosiyanah et al., 2019).

In addition, inquiry-based learning plays a crucial role in stimulating students' questioning and reasoning abilities. This approach encourages learners to investigate phenomena, formulate hypotheses, and draw conclusions based on evidence. The use of discussion and debate further strengthens critical thinking by enabling students to construct arguments, evaluate differing perspectives, and defend their viewpoints logically. Such interactive strategies promote deeper cognitive engagement and support the development of argumentation skills (Abbas et al., 2023).

c. Integration of Technology and Social Media

The integration of technology, particularly social media, has emerged as a significant factor in enhancing students' critical thinking skills. Digital platforms provide opportunities for discussion,

collaboration, and knowledge sharing beyond the traditional classroom setting. When used effectively, social media can serve as a medium for critical dialogue, allowing students to compare ideas, construct arguments, and engage in reflective thinking (Galindo-Domínguez et al., 2024).

However, the effectiveness of technology integration largely depends on the role of the teacher in guiding its use. Teachers are responsible for designing meaningful digital learning activities that encourage active engagement rather than passive consumption. Studies have shown that structured and interactive use of social media can significantly enhance critical thinking skills, particularly when students are involved in problem-solving and evaluative tasks (Abd Halim et al., 2024).

Conversely, passive use of technology, such as merely consuming content without critical engagement, has been found to have limited impact on the development of critical thinking skills. This highlights the importance of pedagogical guidance in ensuring that technology serves as a tool for learning rather than a source of distraction (Duterte, 2025).

d. Development of Metacognitive Skills

Another key finding from the literature is the importance of metacognitive skill development in enhancing critical thinking. Teachers play a crucial role in encouraging students to reflect on their own learning processes, evaluate their thinking, and make informed decisions. Metacognition enables students to become aware of their cognitive strategies and to regulate their learning effectively.

Teachers support this process by incorporating reflective activities, such as self-assessment, peer evaluation, and guided questioning. These strategies help students to critically examine their reasoning and identify areas for improvement. The development of metacognitive skills is closely linked to critical thinking, as it involves the ability to analyze, evaluate, and make decisions based on evidence (Galindo-Domínguez et al., 2024).

Furthermore, promoting decision-making and problem-solving abilities is essential for developing students' higher-order thinking skills. By engaging students in complex tasks that require thoughtful analysis and reasoning, teachers can enhance both critical and cognitive dimensions of learning (Munawwaroh, 2024).

e. Challenges in Enhancing Critical Thinking

Despite the recognized importance of critical thinking, the literature identifies several challenges in its implementation. One major challenge is the limited readiness of teachers to apply innovative and student-centered instructional strategies. Many teachers still rely on traditional teaching methods that emphasize memorization rather than critical analysis, which hinders the development of higher-order thinking skills (Sari & Wardhani, 2020).

Another challenge is students' dependence on rote learning, which limits their ability to engage in critical and reflective thinking. This issue is further compounded by the lack of structured learning designs that explicitly target critical thinking skills. Without clear instructional frameworks, it becomes difficult for teachers to systematically develop students' cognitive abilities.

Additionally, the use of technology presents both opportunities and challenges. While digital tools can enhance learning, uncontrolled use of technology may lead to distractions and reduced focus among students. Therefore, it is essential for teachers to implement structured and purposeful integration of technology to maximize its benefits and minimize its negative effects (Juni et al., 2024).

2. Teachers' Contribution to Students' Cognitive Thinking Skills

a. Teachers as Designers of Cognitive Learning Experiences

The literature consistently emphasizes that teachers play a fundamental role as designers of learning experiences that foster students' cognitive development. Effective teachers structure learning activities that align with higher-order cognitive processes, such as analysis, synthesis, and evaluation. By carefully designing instructional tasks, teachers create opportunities for students to engage in deep learning rather than surface-level memorization. This aligns with contemporary educational perspectives that highlight the importance of structured learning environments in promoting cognitive growth (Hattie, 2017; Munawwaroh, 2024).

In addition, teachers are responsible for aligning learning objectives with cognitive skill development. This involves designing curriculum content and activities that explicitly target students' thinking processes. Scaffolding strategies are also essential, as they provide temporary support that helps students gradually develop independent cognitive abilities. Research suggests that scaffolding enhances students' ability to understand complex concepts and apply knowledge in new contexts (van de Pol et al., 2019).

b. Instructional Approaches for Cognitive Skill Development

Various instructional approaches have been identified as effective in developing students' cognitive thinking skills. Interactive and collaborative learning methods, such as group discussions and cooperative learning, enable students to exchange ideas, negotiate meaning, and construct knowledge collectively. These approaches promote deeper cognitive engagement by encouraging learners to actively process information (Abbas et al., 2023).

Furthermore, reflective and analytical learning tasks play a crucial role in enhancing cognitive skills. Activities such as critical reading, problem-solving exercises, and case analysis require students to interpret information, identify relationships, and draw logical conclusions. Such tasks not only strengthen cognitive abilities but also foster independent learning and intellectual autonomy (Reid & Mang, 2023).

The integration of higher-order questioning techniques is another important strategy. By posing open-ended and thought-provoking questions, teachers stimulate students' reasoning and analytical thinking, thereby enhancing their cognitive development.

c. Role of Technology in Cognitive Development

The integration of technology into the learning process has significantly influenced the development of students' cognitive thinking skills. Digital tools and platforms provide access to diverse learning resources and enable interactive learning experiences that support cognitive engagement. Technology facilitates problem-solving, decision-making, and analytical thinking by allowing students to explore information in dynamic and meaningful ways (Juni et al., 2024).

Moreover, technology-enhanced learning environments promote active participation and collaboration, which are essential for cognitive development. For instance, online discussion forums and digital learning platforms enable students to engage in knowledge construction through interaction and reflection. When guided effectively by teachers, these tools can significantly enhance students' ability to think critically and cognitively (Abd Halim et al., 2024).

However, the literature also indicates that the effectiveness of technology depends on its pedagogical integration. Without proper guidance, technology may lead to superficial learning rather than meaningful cognitive development. Therefore, teachers must play an active role in designing technology-based learning activities that promote higher-order thinking.

d. Student Engagement and Cognitive Growth

Student engagement is a critical factor in the development of cognitive thinking skills. The literature reveals a strong relationship between active engagement and cognitive growth, indicating that students who are actively involved in learning activities tend to demonstrate higher levels of cognitive development. Engagement encompasses behavioral, emotional, and cognitive dimensions, all of which contribute to meaningful learning experiences (Fredricks et al., 2019).

Collaborative learning environments further enhance cognitive development by enabling students to interact, share ideas, and solve problems collectively. Such interactions promote deeper understanding and encourage students to think from multiple perspectives. Additionally, motivation plays a significant role in sustaining engagement and supporting cognitive processes. Motivated students are more likely to invest effort in learning tasks, leading to improved cognitive outcomes (Abbas et al., 2023).

e. Factors Influencing Cognitive Skill Development

The development of students' cognitive thinking skills is influenced by several interrelated factors. One of the most important factors is teacher competence, particularly in terms of pedagogical knowledge and the ability to implement effective instructional strategies. Teachers who

are well-equipped with pedagogical skills are better able to facilitate cognitive development and create meaningful learning experiences (Munawwaroh, 2024).

The learning environment also plays a crucial role. A supportive and interactive classroom environment encourages students to participate actively and engage in higher-order thinking. Conversely, traditional and teacher-centered environments may limit opportunities for cognitive development.

In addition, the availability of digital resources and learning support significantly affects students' cognitive growth. Access to diverse and high-quality learning materials enables students to explore concepts more deeply and develop their analytical skills. However, the literature emphasizes that these resources must be accompanied by proper guidance to ensure effective learning outcomes (Juni et al., 2024).

DISCUSSION

This study aimed to analyze and synthesize existing literature on the role of teachers in enhancing students' critical and cognitive thinking skills. The discussion interprets the findings in relation to the research questions, connects them with relevant theories and prior studies, and highlights their implications for educational practice and future research.

1. Analysis of Results

The findings clearly demonstrate that teachers play a multifaceted and central role in fostering students' critical and cognitive thinking skills. In relation to the first research question, the results indicate that teachers enhance critical thinking primarily by acting as facilitators who create student-centered learning environments. These environments promote active participation, inquiry, and reflective thinking, which are essential components of higher-order thinking. The emphasis on inquiry-based and interactive learning suggests that critical thinking is not developed through passive instruction but through active engagement in meaningful learning tasks.

Furthermore, the findings reveal that instructional strategies such as Problem-Based Learning (PBL), Project-Based Learning (PjBL), and inquiry-based learning significantly contribute to the development of critical thinking skills. These approaches encourage students to analyze problems, evaluate information, and construct knowledge independently. The integration of discussion and debate further strengthens students' ability to build arguments and think logically, indicating that social interaction plays a crucial role in cognitive development.

In terms of technology integration, the findings highlight that social media and digital platforms can enhance critical thinking when used in a structured and purposeful manner. However, the results also emphasize that the effectiveness of technology depends largely on teacher guidance. Passive consumption of digital content does not significantly contribute to critical thinking development, underscoring the importance of pedagogical intervention.

Regarding the second research question, the findings indicate that teachers contribute to cognitive thinking skills by designing structured learning experiences aligned with higher-order cognitive processes. Teachers facilitate cognitive development through scaffolding, reflective tasks, and interactive learning environments. Additionally, student engagement and motivation were identified as key factors influencing cognitive growth, suggesting that cognitive development is closely linked to students' active involvement in the learning process.

2. Comparison with Previous Studies

The findings of this study are consistent with previous research emphasizing the importance of teacher roles in developing higher-order thinking skills. For example, the role of teachers as facilitators aligns with constructivist learning theory, which posits that knowledge is actively constructed through interaction and experience. This is supported by studies indicating that student-centered learning environments enhance critical thinking and cognitive engagement (Reid & Mang, 2023; Abbas et al., 2023).

The effectiveness of PBL and PjBL identified in this study is also consistent with prior findings demonstrating that these approaches improve students' analytical and problem-solving abilities (Hariyanto & Maghfiroh, 2024; Rosiyanah et al., 2019). Similarly, the importance of

inquiry-based learning and discussion in promoting critical thinking aligns with research highlighting the role of interaction and reflection in cognitive development.

The findings related to technology integration are in line with studies showing that digital tools can enhance critical and cognitive skills when used interactively and purposefully (Abd Halim et al., 2024; Juni et al., 2024). However, this study also reinforces the argument made by Duterte (2025) that passive use of technology does not significantly contribute to critical thinking, highlighting a consistent concern in the literature.

Moreover, the emphasis on metacognitive skill development supports previous research indicating that critical thinking is closely linked to students' ability to reflect on their own thinking processes (Galindo-Domínguez et al., 2024). This study extends these findings by integrating metacognition into the broader role of teachers in facilitating both critical and cognitive development.

3. Implications of Findings

The findings of this study have significant theoretical and practical implications. From a theoretical perspective, this study reinforces the relevance of constructivist and student-centered learning theories in promoting higher-order thinking skills. It also highlights the importance of integrating metacognitive and cognitive frameworks to better understand how students develop critical thinking abilities.

From a practical perspective, the study provides important insights for educators. Teachers should adopt instructional strategies that promote active learning, such as PBL, PjBL, and inquiry-based approaches. Additionally, teachers need to design structured and purposeful technology integration to ensure that digital tools contribute to meaningful learning rather than distraction.

The findings also emphasize the need for professional development programs that enhance teachers' competencies in implementing innovative teaching strategies and integrating technology effectively. Schools and educational institutions should support teachers by providing resources, training, and a conducive learning environment that fosters critical and cognitive development.

4. Limitations of the Study

Despite its contributions, this study has several limitations. First, as a literature review, the study relied on previously published research, which may introduce selection bias and limit the scope of analysis. Second, the study focused on articles published within a specific time frame (2015–2025), which may exclude relevant earlier studies. Third, variations in research contexts, methodologies, and sample characteristics across the reviewed studies may affect the generalizability of the findings.

Additionally, this study did not include empirical data collection, which limits its ability to establish causal relationships between teacher roles and students' thinking skills. Future research could address these limitations by conducting empirical studies or mixed-method research to validate and extend the findings.

5. Partial Conclusions

Based on the analysis, it can be concluded that teachers play a crucial and multifaceted role in enhancing students' critical and cognitive thinking skills. Their roles as facilitators, designers, and guides are essential in creating learning environments that promote active engagement, reflection, and higher-order thinking. Instructional strategies and technology integration are effective when implemented in a structured and pedagogically sound manner.

However, the development of critical and cognitive thinking skills is influenced by various factors, including teacher competence, student engagement, and learning environment. Therefore, a holistic approach that integrates pedagogy, technology, and student-centered learning is necessary to achieve optimal learning outcomes. These findings provide a strong foundation for the final conclusions of this study and highlight the importance of teacher roles in shaping the future of education in the digital era.

CONCLUSION

This study concludes that teachers play a comprehensive and strategic role in enhancing students' critical and cognitive thinking skills, as reflected in the synthesized literature. The findings reveal that teachers are not merely knowledge transmitters but function as facilitators, designers, and motivators who actively shape students' higher-order thinking processes. In developing critical thinking skills, teachers promote inquiry, reflection, and problem-solving through student-centered approaches such as problem-based learning, project-based learning, discussion, and inquiry-based strategies. The integration of technology and social media further supports critical thinking when guided effectively, emphasizing that pedagogical design is more important than the mere use of digital tools. Additionally, the development of metacognitive skills emerges as a crucial component, enabling students to regulate their thinking and make informed decisions. In terms of cognitive thinking skills, teachers contribute significantly by designing structured and meaningful learning experiences aligned with higher-order cognitive processes. Instructional strategies such as collaborative learning, reflective tasks, and higher-order questioning enhance students' ability to analyze, synthesize, and evaluate information. Student engagement, motivation, and a supportive learning environment are also identified as key factors influencing cognitive development. However, challenges such as reliance on traditional teaching methods, limited teacher readiness, and unstructured use of technology remain barriers to optimizing students' thinking skills.

The implications of this study are both theoretical and practical. Theoretically, it reinforces constructivist and student-centered learning paradigms by highlighting the centrality of teacher roles in fostering higher-order thinking. Practically, it provides guidance for educators to adopt innovative, interactive, and technology-integrated teaching strategies that promote critical and cognitive engagement. Educational institutions are encouraged to support teacher professional development to enhance pedagogical competence in this area. For future research, it is recommended to investigate the empirical implementation of specific instructional strategies across different educational contexts and levels. Further studies may also explore the long-term impact of teacher interventions on students' thinking development, as well as examine the role of contextual factors such as curriculum design, institutional support, and cultural influences. In conclusion, this study underscores that the development of students' critical and cognitive thinking skills depends largely on the effectiveness of teachers' roles and instructional practices. Strengthening these roles is essential for preparing students to meet the complex demands of the 21st century, thereby contributing to the advancement of quality education and the cultivation of independent, reflective, and competent learners.

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