

Teacher Leadership in Developing Critical Thinking Skills Through a Discovery Approach

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Abstract

This study examines the role of teacher leadership in developing critical thinking skills through the implementation of discovery learning in elementary schools. Using a qualitative literature review method, the study evaluates relevant literature discussing the contributions of teacher leaders as change agents in educational settings. Key findings indicate that teacher leadership significantly facilitates discovery-based learning, encouraging students to think critically and independently. Challenges such as limited time, resources, and readiness of both teachers and students often hinder the approach's success. The study highlights the importance of education policies that support pedagogical innovation, which are crucial for improving learning quality in elementary schools. Theoretical implications contribute to literature on teacher empowerment and critical thinking skill development, while practical implications encourage broader adoption of discovery learning. Recommendations include strengthening teacher leadership training and providing better resources for elementary schools. Further research is suggested to explore empirical implementations of discovery learning and to develop more effective training models for teacher leaders.

Keywords: *critical thinking skills, discovery learning, education policy, teacher leadership*

Abstrak

Studi ini meneliti peran kepemimpinan guru dalam mengembangkan keterampilan berpikir kritis melalui penerapan pembelajaran berbasis penemuan (discovery learning) di sekolah dasar. Menggunakan metode tinjauan pustaka kualitatif, penelitian ini mengevaluasi literatur yang relevan mengenai kontribusi pemimpin guru sebagai agen perubahan dalam lingkungan pendidikan. Temuan utama menunjukkan bahwa kepemimpinan guru secara signifikan memfasilitasi pembelajaran berbasis penemuan, yang mendorong siswa untuk berpikir kritis dan mandiri. Tantangan seperti keterbatasan waktu, sumber daya, dan kesiapan baik dari guru maupun siswa sering kali menghambat keberhasilan pendekatan ini. Studi ini menyoroti pentingnya kebijakan pendidikan yang mendukung inovasi pedagogis, yang sangat penting untuk meningkatkan kualitas pembelajaran di sekolah dasar. Implikasi teoretisnya berkontribusi pada literatur tentang pemberdayaan guru dan pengembangan keterampilan berpikir kritis, sementara implikasi praktisnya mendorong adopsi pembelajaran berbasis penemuan secara lebih luas. Rekomendasi mencakup penguatan pelatihan kepemimpinan guru dan penyediaan sumber daya yang lebih baik untuk sekolah dasar. Penelitian lebih lanjut disarankan untuk mengeksplorasi implementasi empiris pembelajaran berbasis penemuan dan mengembangkan model pelatihan yang lebih efektif untuk pemimpin guru.

Kata Kunci: keterampilan berpikir kritis, pembelajaran berbasis penemuan, kebijakan pendidikan, kepemimpinan guru



INTRODUCTION

In the current era of globalization, critical thinking skills are one of the essential competencies that must be possessed by every individual, including students in elementary school. These skills not only serve to solve problems effectively, but they also enable individuals to analyze, evaluate, and filter the increasingly abundant information in the digital age. In the midst of the rapid flow of information, students are required to have the ability to think critically in order to be able to sort out which information is correct and which is misleading. In line with this view, the development of critical thinking skills can no longer rely only on traditional teacher-centered learning methods. One innovative approach that can be applied to develop these skills is the discovery approach. "The discovery learning approach has been proven to be able to improve students' critical thinking skills through a learning process that involves independent exploration and investigation, where students actively discover new knowledge" (Ilmi et al., 2022). In addition, studies in Indonesia show that this learning model is effective in improving critical thinking skills at various levels of education, including in elementary schools (Hanifah et al., 2022). Through this approach, students are invited to actively discover concepts and knowledge through independent exploration and investigation, which ultimately strengthens their critical thinking skills (Bruner, 1961, as quoted in Woolfolk, 2016).

In Indonesia, the role of teachers as learning facilitators and agents of change has been formally recognized through the Guru Driving policy. The Teacher Driving Program is one of the government's initiatives in order to improve the quality of education through increasing the capacity of teachers to become innovators and agents of change in schools. *Guru Penggerak (Teacher Leader)* not only function as educators, but also as learning leaders who encourage the creation of a more inclusive, participatory, and collaborative teaching and learning process. In this context, *Guru Penggerak (Teacher Leader)* play a very important role in designing learning that is able to develop students' critical thinking skills through innovative methods, one of which is by applying a discovery approach, (Wafiqni et al., 2023).

The relationship between Teacher Mobilization, discovery approach, and the development of critical thinking skills is very close. Driving teachers, as agents of change, have a strategic role in initiating and facilitating the application of discovery-based learning methods in the classroom. Through the discovery approach, students are given space to think critically, solve problems independently, and develop creative ideas. *Guru Penggerak (Teacher Leader)* not only direct students to discover new concepts, but also guide them in exploring various sources of information and asking relevant questions. In the long run, critical thinking skills developed through this process will not only improve students' academic achievement, but also prepare them to become critical and highly competitive citizens in the era of globalization (Fisher, 2011). This is in line with the great mission of education in Indonesia which wants to create a generation that is not only academically intelligent, but also able to think critically, creatively, and innovatively in facing the challenges of the times (Waluyo, 2018). Through the integration between the role of Driving Teachers, the discovery approach, and the development of critical thinking skills, it is hoped that education in Indonesia can be more advanced and able to answer the challenges that arise in this era of globalization (Ramadhanti et al., 2023).

In an effort to understand the role of Teacher Mobilizers in improving the quality of education in Indonesia, especially in the development of students' critical thinking skills through the discovery approach, a number of important issues have been identified in the literature. One of the main issues that arises is how *Guru Penggerak (Teacher Leader)* can effectively support and facilitate the development of students' critical thinking skills. Critical thinking skills, which include the ability to analyze, evaluate, and create innovative solutions to complex problems, are indispensable for students in the rapidly evolving information age (Chusni et al., 2022). However, in the context of primary

education in Indonesia, there are challenges in ensuring that the right pedagogical approach is used to hone these skills.

One method identified as an effective way of developing critical thinking skills is the discovery approach, which encourages students to discover new concepts and solve problems through independent exploration and creative thinking (Santrock, 2018). However, how Teacher Mobilizers are able to facilitate this approach in the classroom is one of the main challenges. *Guru Penggerak (Teacher Leader)* are expected to have a role that is more than just a teacher; They must be facilitators who are able to create a learning environment that encourages students to think critically independently. The literature shows that this role demands special abilities from teachers to adapt the curriculum, use interactive pedagogical strategies, and provide constructive feedback to students (Gagne, 2013). The key question that arises here is the extent to which Teacher Mobilizers are able to play a role in supporting and integrating the discovery approach effectively in the classroom, resulting in real development in students' critical thinking skills.

In addition, the literature also identifies several significant challenges faced by Teacher Mobilizers in implementing the discovery approach in elementary schools. These challenges are related to the readiness of educational infrastructure, time constraints, and resources available to support this learning approach, among others. The discovery approach often takes longer than traditional teaching methods, because students must be given the opportunity to explore and discover new concepts through a more in-depth learning process (Mayer, 2004). Another challenge faced by Teacher Movers is how to overcome resistance to pedagogical changes from other students and teachers who may still be more comfortable with more conventional teaching methods.

No less important, several studies have also shown that the discovery approach can present difficulties for students who have a low level of learning independence or who are used to a more structured learning approach (Hmelo-Silver et al., 2007). *Guru Penggerak (Teacher Leader)* must be able to tailor the level of support provided to students according to their individual needs without compromising the essence of the discovery approach itself. Therefore, the formulation of problems related to the application of the discovery approach by Teacher Mobilizers not only focuses on how they facilitate critical thinking skills, but also on the challenges that arise in the process of its application in elementary schools.

This study aims to review the existing literature on the role of Teacher Mobilizers in the context of education in Indonesia and how the discovery approach can be applied to develop critical thinking skills among primary school students. Specifically, this study aims to identify and analyze the strategic role of Teacher Mobilizers in integrating the discovery learning method as a tool to build students' critical thinking skills. Previous research has shown that the discovery learning model is effective in developing students' critical thinking skills through a student-centered learning process and encouraging independent exploration (Ramadhanti et al., 2023). Other research confirms that discovery learning encourages students to engage in problem-solving and critical analysis, which is an important foundation for the development of critical thinking skills (Ilmi et al., 2022). In addition, this approach has been proven to be able to improve students' skills in logical and analytical thinking, especially in the context of basic education and also aims to explore the challenges faced by Teacher Mobilizers in implementing the discovery approach, as well as evaluate the effectiveness of this method in the context of basic education (Sasmita et al., 2023). By conducting a comprehensive literature review, it is hoped that this research will be able to provide in-depth insights into how *Guru Penggerak (Teacher Leader)* can function as agents of change that encourage pedagogical innovation in the elementary school environment (Santrock, 2018).

In terms of theoretical benefits, this research is expected to make an important contribution to the development of educational theories related to the role of *Guru Penggerak (Teacher Leader)* in developing critical thinking skills through a discovery approach. This literature study will add new insights into academic discussions regarding the relationship between discovery-based teaching and the development of critical thinking skills, which have previously been recognized as one of the key skills that must be developed in the global education system (Fisher, 2011). In addition, the results of this study are also expected to provide a theoretical perspective on how the discovery approach can be adapted and applied effectively in the context of education in Indonesia, taking into account the specific challenges faced by Teacher Mobilizers in elementary schools (Mayer, 2004).

In terms of practical benefits, this research can have real implications for the development of educational programs in Indonesia, especially related to the Driving Teacher program. The findings of this study are expected to provide recommendations to education policy makers on how to increase the capacity of Teacher Mobilizers to implement the discovery approach more effectively. In addition, the results of this research can also be a practical guide for teachers in designing curriculum and learning strategies that are oriented towards the development of students' critical thinking skills. In the long term, this research has the potential to have a positive impact on the quality of education in Indonesia by improving teachers' skills in teaching and enriching students' learning experiences through a more innovative and interactive approach (Gagne, 2013).

To ensure a uniform understanding, it is important to explain some of the key terms used in this study. Teacher Mobilizer refers to teachers who have been trained and empowered by Indonesian government programs to act as agents of change in the world of education, with the responsibility to facilitate innovative and inclusive learning processes in schools. "Discovery learning has been shown to be able to improve students' critical thinking skills by involving them in the process of independent exploration and problem-solving" (Fahmi et al., 2019). In addition, discovery learning makes a significant contribution to the development of critical thinking skills through improving students' ability to analyze information logically and deeply (Yaiche, 2021). Meanwhile, the discovery approach is a learning method that encourages students to discover new concepts and solve problems through independent exploration and discovery, with the role of the teacher as a facilitator who guides the process (Bruner, 1961, as quoted in Woolfolk, 2016). This operational definition provides a clear framework for understanding the main elements of research, thus allowing for the drafting of structured arguments and in-depth analysis of the existing literature.

Explicit Research Objectives

The objectives of this study are:

1. To analyze the strategic role of Teacher Mobilizers in integrating discovery learning to develop students' critical thinking skills in elementary schools.
2. To identify the challenges faced by Teacher Mobilizers in implementing the discovery approach.
3. To evaluate the effectiveness of the discovery learning method in fostering critical thinking skills within the context of basic education.

METHOD

This study uses a qualitative literature study research design with the main objective of reviewing literature relevant to the topic of the Role of Guru Penggerak (Teacher Leader) in the Development of Critical Thinking Skills through the Discovery Approach. Literature studies were chosen because this method allows researchers to collect, evaluate, and analyze the results of existing research related to the topic. As a

qualitative research, this approach does not involve the collection of primary data, but rather focuses on interpretation, critical assessment, and identification of the main themes that have been discussed in previous studies (Creswell, 2014; Hart, 1998). This study also aims to understand how Teacher Mobilizers in Indonesia play the role of agents of change in education, with a focus on the development of critical thinking skills of primary school students through discovery-based learning.

The study was conducted from January to July 2024 to ensure a comprehensive collection and analysis of literature.

In the process of collecting literature data, researchers utilize various online databases such as Google Scholar, ERIC, and Scopus to search for articles that match the research topic. Local and international educational journals are also used as important data sources in literature collection. The keywords used in the literature search include "Driving Teachers", "Discovery Learning", "Critical Thinking Skills", "Elementary School Education", and "Indonesia". These keywords were chosen to ensure that the literature search covers the main aspects of the research topic, namely the role of the Driving Teacher, discovery learning methods, and the development of critical thinking skills in elementary schools. The collection process is carried out systematically, starting from searching for literature in the database, checking relevance through abstracts, to selecting articles for further analysis (Hart, 1998).

For data analysis techniques, this study uses thematic analysis to identify and group the main themes that emerge from the literature that has been reviewed (Braun & Clarke, 2006). In thematic analysis, the data from the collected literature are organized based on certain themes related to the role of the Driving Teacher and the application of the discovery approach in the development of critical thinking skills. This organizing process involves grouping literature based on the main topic, then identifying patterns that appear repeatedly in the literature. In addition to thematic analysis, this study also uses content analysis to evaluate the content of the literature studied, with the aim of revealing the meaning behind the existing data and relating it to the research questions posed (Krippendorff, 2013). This process includes the coding of literature, where each article is reviewed to find relevant patterns, both in the context of the role of the Driving Teacher, the development of critical thinking skills, and the application of discovery learning.

To ensure the validity and reliability of the data, this study uses credible literature sources, such as accredited international and national journals, as well as official government reports. Validity is maintained through a cross-checking process of information between literature to ensure consistency and accuracy of data. Each source used in this study was double-checked to ensure that the findings from the various studies supported each other and did not contradict. In addition, the review process is carried out in depth to ensure that all the information included in this review is relevant to the research objectives and has a high level of confidence (Yin, 2011). The reliability of this research is also maintained by using systematic and consistent analysis techniques, starting from the collection process to data processing. These methods ensure that the findings accurately reflect the data and provide valuable insights into the role of Teacher Mobilizers in improving critical thinking skills through the discovery approach.

RESULTS AND DISCUSSION

3.1. Key Findings from the Literature

The main findings from the literature study show that Teacher Mobilizers play a central role in improving students' critical thinking skills through the application of the discovery approach in elementary schools. The literature that has been reviewed consistently highlights that Guru Penggerak (Teacher Leader) not only play the role of teachers, but also as agents of change that encourage innovation in learning methods. In the context of basic education in Indonesia, this role is very important because critical thinking skills are one of the skills that must be developed to prepare students to face the challenges of the era of globalization. According to several studies, Teacher Mobilizers have a strategic role in encouraging students to be actively involved in the learning process, as well as building an environment that supports exploration and discovery (Fisher, 2011).

One of the important findings from the literature is that Driving Teachers, with the specialized training they receive, are able to implement the discovery approach effectively. This discovery approach allows students to discover new concepts through independent exploration and investigation, with the Driving Teacher acting as a facilitator who provides appropriate guidance and feedback (Santrock, 2018). Through this approach, students are encouraged to think critically, evaluate the information they have obtained, and solve problems independently. Other studies have also shown that discovery-based learning not only improves students' critical thinking skills, but also strengthens their sense of responsibility towards the learning process (Hmelo-Silver et al., 2007).

In further analysis, the literature also shows that Teacher Mobilizers really play the role of agents of change in the context of basic education. They not only apply innovative learning methods such as discovery learning, but also contribute to the change of learning culture in schools. By encouraging more active and student-centered learning, Guru Penggerak (Teacher Leader) create an environment where students feel motivated to engage in critical thinking processes and independent discovery. Guru Penggerak (Teacher Leader) also play a key role in facilitating collaboration between students, which is an important element in discovery learning because it allows students to discuss with each other and explore ideas together (Bruner, 1961, as quoted in Woolfolk, 2016).

However, the application of the discovery approach in learning is inseparable from challenges. Literature studies reveal that some Guru Penggerak (Teacher Leader) face difficulties in balancing between giving students the freedom to explore and ensuring that they stay on track in achieving learning goals. Another challenge is resistance to change from other teachers who are still applying conventional learning methods. However, the literature also shows that Guru Penggerak (Teacher Leader) who successfully overcome these challenges are generally able to create more dynamic and interactive learning, which ultimately encourages a significant improvement in students' critical thinking skills (Mayer, 2004). Recent studies by Syafitri et al. (2023) emphasize the importance of continuous professional development for teachers to address these challenges effectively.

In this discussion, it was clear that the discovery approach can effectively improve students' critical thinking skills if applied correctly. Guru Penggerak (Teacher Leader) who act as active facilitators must be able to adapt this approach to student needs, provide appropriate guidance when needed, and allow students to find solutions independently. Research also shows that with the discovery approach, students become more active in processing information and more critical in making decisions, which is the main goal of developing critical thinking skills (Ennis, 2011). Thus, the literature reviewed supports the argument that Guru Penggerak (Teacher Leader) have a key role in

advancing the quality of basic education in Indonesia through the application of innovative learning methods such as discovery learning.

3.2. Analysis of the Role of Guru Penggerak (Teacher Leader) in the Development of Critical Thinking Skills

The specific role of Guru Penggerak (Teacher Leader) in the development of students' critical thinking skills through discovery-based learning is very significant in the context of basic education. Teachers Mobilizers, as agents of change in the Indonesian education system, have a responsibility to encourage the creation of a more dynamic and student-centered learning atmosphere. One of the main responsibilities of the Driving Teacher is to implement the discovery approach, which allows students to learn through independent exploration and discovery. In this approach, the teacher no longer acts as the main source of information, but as a facilitator who supports and guides students in their process of understanding new concepts (Bruner, 1961, as quoted in Woolfolk, 2016). Guru Penggerak (Teacher Leader) must be able to set up an interactive learning environment and stimulate students' curiosity, so that they are encouraged to ask questions, seek answers, and test their own hypotheses.

In its implementation, Teacher Mobilizer uses various strategies to encourage students to think critically, such as giving open-ended problems that do not have one correct answer, involving students in group discussions, and assigning tasks that encourage students to solve problems based on the knowledge they have found on their own. This learning process encourages students to use critical thinking skills, namely the ability to analyze information, evaluate arguments, and make logical and evidence-based decisions (Ennis, 2011). Mover Teachers also play a role in instilling metacognitive skills in students, where students learn to be aware of their own way of thinking and evaluate the problem-solving processes they use. This allows students to not only focus on the end result, but also on the learning process itself, which is at the core of critical thinking skills.

The literature shows that the effectiveness of the discovery approach in encouraging critical thinking skills is highly dependent on how this approach is applied in the classroom. The research reviewed shows that when the discovery approach is applied consistently and structured, students become more active in the learning process and more open to critical thinking (Mayer, 2004). They are driven to think outside the traditional framework, explore different points of view, and make connections between different information. Additionally, the discovery approach allows students to have more control over their learning process, which ultimately increases their motivation and engagement. Students not only learn the facts, but also learn how to process information and apply it in a broader context, which is crucial in the development of critical thinking skills.

However, the effectiveness of this approach also faces some challenges. Several studies have shown that some Guru Penggerak (Teacher Leader) still face difficulties in balancing between giving students the freedom to explore and ensuring that learning goals remain achieved. Another challenge is the ability of different students to deal with tasks that require independent exploration. Guru Penggerak (Teacher Leader) need to provide the right level of scaffolding, which is to provide sufficient initial support to students and gradually reduce it as students' ability to think independently increases (Santrock, 2018). In this context, the ability of Guru Penggerak (Teacher Leader) to adapt their approach to the needs of students is the key to success in encouraging critical thinking skills through discovery-based learning.

Nonetheless, literature studies also show that students who engage in discovery-based learning tend to show significant improvements in critical thinking skills compared to students who learn through traditional methods. This is because the discovery approach not only engages students cognitively, but also provides space for them to develop curiosity, creativity, and the ability to think reflectively (Hmelo-Silver et al., 2007).

Mobilized teachers who successfully apply this approach effectively will be able to change the mindset of students, from simply receiving information passively to being more proactive in exploring and analyzing information. Thus, the role of Teacher Mobilizers in developing critical thinking skills through discovery-based learning is an important element in efforts to improve the quality of basic education in Indonesia.

3.3. Challenges and Obstacles

In the application of the discovery approach, Teacher Mobilizers are faced with various challenges and obstacles that affect the effectiveness of the implementation of the method in elementary schools. One of the main challenges that is often identified in the literature is the limitation of time in the learning process. The discovery approach requires more time allocation than traditional teaching methods, as students are given the opportunity to explore and discover knowledge independently. This often clashes with a rigorous and dense curriculum, where teachers are required to complete the material within a predetermined time frame. Guru Penggerak (Teacher Leader) must be good at managing time and choosing discovery methods that can be adjusted to existing time constraints (Mayer, 2004). In many cases, the pressure to meet curriculum targets makes teachers more likely to return to direct, faster and structured teaching methods.

Another challenge is the lack of resources and supporting infrastructure in primary schools, especially in remote areas of Indonesia. The discovery approach often requires resources such as technology devices, interactive learning materials, and wider access to information. However, not all schools in Indonesia have adequate facilities to support this discovery learning. Many schools in rural areas lack basic facilities such as laboratories or internet access, which is a major obstacle in the application of this method. Guru Penggerak (Teacher Leader) who are placed in schools with these limitations often face difficulties in providing discovery-based learning experiences to their students (Ministry of Education and Culture, 2021).

In addition, the difference in the level of student ability is also a significant challenge in the application of the discovery approach. Students have varying abilities in terms of critical and independent thinking, and not all students are able to quickly adapt to learning methods that demand independent exploration. Some students who are familiar with conventional teaching methods may feel confused or overwhelmed by the freedom provided in the discovery approach. The Driving Teacher must be able to identify each student's level of readiness and adjust the level of scaffolding needed to support them. Scaffolding, which is the initial help provided by teachers and gradually reduced as students' abilities increase, becomes very important in overcoming this challenge (Santrock, 2018). Teachers must be able to strike a balance between giving students the freedom to learn independently and providing the necessary support so that they do not feel trapped or disoriented.

In addition to challenges related to student resources and readiness, resistance to change is also an obstacle that is often faced by Teachers. Some teachers, especially those who have long taught with traditional methods, may feel reluctant or skeptical about using the discovery approach. Resistance to changes and challenges in adapting discovery methods by teachers: "Many teachers experience difficulties in implementing the discovery learning model due to a lack of adequate experience and training" (Salam et al., 2019). Research shows that the application of discovery learning is often hit by resistance from teachers who are used to traditional methods and lack digital literacy skills (Salahuddin et al., 2018). Changing teaching methods requires effort and adaptation that not all teachers are ready to do. Low digital literacy and reliance on lecture methods are also other obstacles, especially in schools where teachers have not received adequate training in using technology or interactive learning strategies. This resistance, if not overcome, can hinder the success of the application of discovery learning, because the success of this approach is highly dependent on collaboration

between Teacher Mobilizers and other fellow teachers (Bruner, 1961, as quoted in Woolfolk, 2016).

The cultural context of elementary schools in Indonesia, which tends to be authoritative in the teaching process, adds to the challenge of adopting discovery learning. Teachers are often considered the only source of knowledge, which is contrary to the principle of discovery learning which focuses on the active involvement of students in the learning process. This paradigm change requires time and support from school leaders as well as educational policies that support pedagogical innovation (Sefrinal et al., 2021). This paradigm is contrary to the basic principles of discovery learning, which places students as the main actors in the learning process. In schools that have a learning culture that is firmly rooted in this traditional method, Teacher Mobilizers often face obstacles in changing the way students and other teachers view the learning process. This process of change takes time, as well as support from school leaders and educational policies that encourage pedagogical innovation.

Administrative challenges also affect the effectiveness of Teacher Mobilizers in implementing the discovery learning method. The high administrative workload reduces the time available for teachers to design and implement innovative learning approaches, thereby reducing the potential for the success of this model in improving the quality of learning (Toto, 2021). School administration and the demand to meet formal evaluation targets often put Teacher Mobilizers in a difficult position to strike a balance between meeting administrative obligations and encouraging pedagogical innovation.

3.4. Discussion of Main Themes from the Literature

The role of Guru Penggerak as agents of change in elementary school settings stands out as one of the central themes in the reviewed literature. Guru Penggerak are not only responsible for teaching subject matter but also for stimulating more creative and participatory learning among students. In this context, Guru Penggerak act as learning facilitators who encourage students to think critically and independently. Guru Penggerak are recognized as change agents who play a key role in creative and participatory learning through innovative methods such as discovery learning (Harris & Jones, 2019). This aligns with the primary goal of elementary education in Indonesia, which is to develop students who not only understand subject matter but also possess the critical thinking skills needed to face challenges in the era of globalization.

The second emerging theme is discovery learning, which is one of the learning approaches promoted by Guru Penggerak to develop students' critical thinking skills. Discovery learning provides students with the freedom to uncover new concepts and solve problems through independent exploration. Teachers act as facilitators who provide the guidance and resources needed to support the learning process. Discovery learning is effective in enhancing critical thinking skills by giving students the freedom to uncover concepts through independent exploration and increasing student engagement in the learning process (Susilowati & Suyatno, 2021). Additionally, students who learn through discovery learning tend to have higher engagement in the learning process and take greater responsibility for their knowledge development (Hmelo-Silver et al., 2007).

The third interrelated theme is the development of critical thinking skills as one of the primary goals of applying discovery learning by Guru Penggerak. Critical thinking skills are an essential component in modern education, especially in the fast-paced and complex information age. The development of critical thinking skills through discovery learning provides opportunities for students to practice these skills in a more applicable and contextual way, especially in elementary school (Pantić et al., 2021). The development of these skills includes the ability to analyze, evaluate, and create solutions to problems that do not have a single answer. Literature studies confirm that discovery learning gives students the opportunity to practice these skills in a more applicative and contextual way (Ennis, 2011). In the context of elementary school, the development of

critical thinking skills also helps students to learn how to ask the right questions, evaluate information objectively, and make decisions based on logical and critical thinking.

The last theme identified in the literature is the influence of education policy on teaching in primary schools. Education policies in Indonesia, especially through the Guru Penggerak program, provide a great impetus for the adoption of more innovative and student-centered learning methods. Indonesia's education policy through the Guru Penggerak program encourages the use of innovative learning methods, but its implementation still faces challenges related to school readiness and resources (Adam et al., 2023). However, education policies also face challenges in their implementation, especially related to the readiness of schools, teachers, and supporting infrastructure. Some literature reveals that although policies that support Teacher Mobilizers already exist, the success of their implementation is highly dependent on local factors such as the availability of resources, the readiness of other teachers, and the prevailing learning culture in schools (Boote & Beile, 2005).

3.5. Relationship between Literature Study Findings and Previous Research

The findings of this literature study are in strong agreement with previous studies, which provide a solid foundation to strengthen the argument about the importance of the role of Teacher Mobilizers and the discovery approach in the development of students' critical thinking skills. In previous literature, the role of teachers as agents of change has been widely discussed, especially in the context of education that prioritizes student-based learning. Previous studies have consistently shown that teachers who actively innovate in learning methods have a significant impact on student engagement and the development of critical thinking skills (Fisher, 2011). Recent research shows that the role of teachers as agents of change in discovery learning has been shown to be effective in improving student engagement as well as their critical thinking skills. Teachers act as facilitators who help students explore and find solutions to problems faced through innovative learning approaches (Fahmi et al., 2019). This is in line with the findings in this study, which highlights the central role of Guru Penggerak (Teacher Leader) in encouraging students to engage in a more independent and exploratory learning process.

For example, research conducted by Mayer (2004) shows that discovery learning is one of the effective learning methods to encourage critical thinking skills, because it allows students to actively find solutions to the problems they face through independent exploration and investigation. The discovery learning method allows students to engage more deeply in the learning process, provides space for the development of high-level cognitive skills, and improves their ability to think critically and independently (Mulyanto et al., 2020). These findings are in line with the results of the reviewed literature, where discovery learning not only facilitates the development of high-level cognitive skills, but also provides space for students to become more independent in their learning process. Mayer's research emphasizes the importance of the teacher's role as a facilitator who provides the necessary support and guidance, which is also supported by this literature, where Teacher Movers are expected to facilitate the student discovery process, while still ensuring that learning objectives are achieved.

In addition, previous research conducted by Hmelo-Silver et al. (2007) also supports the finding that the discovery learning approach increases student motivation and engagement in learning. Students who engage in discovery learning show a higher level of engagement and a sense of responsibility for their learning process. The study found that students who were active in the discovery process tended to be more motivated and more emotionally engaged in learning, which in turn improved their critical thinking skills. In addition to improving critical thinking skills, discovery learning is also able to increase student motivation and engagement in learning, as found in several studies that show that students who use this method tend to be more active and responsible for their learning process (Yosefa et al., 2021). This is consistent with the

findings of the literature reviewed in this study, where Teacher Mobilizer is reported to be able to increase student engagement through the application of discovery learning methods that encourage students to think more critically and creatively.

On the other hand, previous research has also highlighted a number of challenges in the application of discovery learning. For example, research by Kirschner, Sweller, and Clark (2006) suggests that discovery learning can be ineffective if students do not have a sufficient knowledge base or if teachers do not provide adequate support. These findings are also reflected in the literature reviewed, where Teacher Mobilizers often face challenges in balancing giving students the freedom to explore and ensuring that they stay on track to achieve learning goals. This challenge emphasizes the importance of the role of Guru Penggerak (Teacher Leader) in providing proper scaffolding, as discussed in the literature, to ensure that students get the guidance they need without losing the essence of the discovery approach (Santrock, 2018).

Another finding that supports the relationship between this study and previous research is about the influence of education policy on pedagogical innovation in primary schools. Research by Boote and Beile (2005) highlights that progressive education policies can facilitate the adoption of innovative learning methods such as discovery learning. This study shows that adequate policy support allows teachers to be more courageous in implementing

CONCLUSION

This research has provided in-depth insights into the role of Teacher Mobilizers in the development of critical thinking skills through the application of a discovery approach. The main findings from the literature study show that Teacher Mobilizers have a strategic role in encouraging discovery-based learning that allows students to be actively involved in the process of exploration and discovery of new concepts. The discovery approach has proven to be effective in improving students' critical thinking skills, especially when teachers are able to provide appropriate guidance and adequate scaffolding. In addition, this study also found that challenges such as limited resources, resistance to change, and teacher and student readiness can affect the success of the implementation of discovery learning (Mayer, 2004). Therefore, support from strong education policies and supportive school environments is urgently needed to ensure the sustainability and success of this approach.

Educational policies that support pedagogical innovation, particularly through the Guru Penggerak program, play an important role in encouraging the application of discovery methods in primary schools. The Teacher Driving Program, designed to empower teachers as agents of change, provides a space for teachers to implement more interactive and student-centered learning methods. In addition, the discovery approach offers opportunities for students to develop critical thinking skills that are crucial in the era of globalization, where the ability to analyze information, solve problems, and make decisions based on critical evaluation is becoming increasingly important (Santrock, 2018). Thus, education policies that support the discovery approach can play a role in improving the quality of basic education in Indonesia, especially in preparing students to face the challenges of a more complex future.

Theoretical implications of this study contribute to a deeper understanding of educational theory, particularly in terms of teacher empowerment and the development of critical thinking skills. The results of this study confirm that Guru Penggerak (Teacher Leader) not only play the role of teachers, but also as facilitators who encourage students to think independently and critically. This discovery supports the constructivist learning theory, in which students are considered the main actors in the learning process, while teachers act as supervisors who provide guidance as needed (Hmelo-Silver et al., 2007). In addition, this study also enriches the discussion on the effectiveness of the discovery approach in the context of basic education, especially in developing countries such as

Indonesia, which have their own challenges in the implementation of innovative education policies.

In terms of practical implications, the findings of this study have a direct impact on educational practices in elementary schools, especially in the context of the application of the discovery approach by Guru Penggerak. These findings suggest that Guru Penggerak (Teacher Leader) must be equipped with adequate training to effectively apply the discovery method in the classroom. They also need to be supported by flexible school policies as well as adequate resources to ensure that this approach can be implemented properly. Additionally, it is important for Guru Penggerak (Teacher Leader) to continuously evaluate and adjust their learning methods according to students' needs, given that students' critical thinking abilities may vary depending on their background and previous learning experiences.

Based on the findings and analyses that have been carried out, several recommendations for education and practice policies in primary schools can be conveyed. First, the strengthening of the Guru Penggerak program must continue to be carried out by ensuring that teachers receive continuous training, especially related to innovative learning methods such as discovery learning. The government should strengthen policy support that encourages the adoption of this approach in all primary schools in Indonesia, especially in areas that still experience limited resources. Second, schools must create a learning environment that is more supportive of the discovery approach, by providing technology resources and interactive learning materials. Teachers and primary schools are also advised to be more proactive in encouraging student involvement in the learning process, by giving students greater freedom to explore and discover new concepts through discovery-based learning.

Third, it is recommended that teachers collaborate more frequently in professional learning communities (PLCs) to share best practices and challenges in implementing discovery learning. This collaborative environment can foster innovation and collective problem-solving, which are crucial in overcoming implementation barriers. Fourth, policymakers should prioritize funding for teacher training and resources, particularly in rural or under-resourced schools, to ensure equitable access to effective pedagogical strategies like discovery learning.

However, this study also has some limitations that need to be acknowledged. One of the main limitations is the scope of the literature being reviewed, which may not cover all aspects relevant to the topic. In addition, access to several recent studies related to the development of critical thinking skills through the discovery approach in Indonesia is still limited. These limitations may affect the depth of analysis of some of the findings, although overall this study has provided a comprehensive picture of the role of Teacher Mobilizers in the context of primary education.

As a follow-up to this study, some further research suggestions can be submitted. More in-depth empirical research is needed to evaluate the effectiveness of the implementation of discovery learning by Guru Penggerak (Teacher Leader) in real situations in the classroom. Field research that involves direct observation of the implementation of the discovery approach will provide richer insights into the challenges and success of its implementation. In addition, further studies can also focus on developing more effective training models for Guru Penggerak, with the aim of improving their skills in integrating discovery learning methods with the specific needs of students in primary schools. With more in-depth research, it is hoped that the discovery approach can be implemented more widely and sustainably throughout Indonesia.

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