



## Krulik and Rudnick's Perspective: Analysis of Reflective Thinking Ability of Students

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### ABSTRACT

*Analysis of students' reflective thinking abilities in inheritance lessons from Krulik and Rudnick's perspective is a study that aims to evaluate the extent to which students are able to carry out in-depth reflection on the understanding and application of the concept of Islamic inheritance law. This approach emphasizes the importance of critical and evaluative thinking skills in the learning process, as well as how students integrate the knowledge gained with relevant practical situations. This research aims to assess the effectiveness of an interactive and personalized learning approach in improving students' reflective thinking abilities at Islamic Elementary School Fattah Hasyim. The research subjects were class IX students studying rose science. The research results show that most students are able to apply reflective thinking according to Krulik and Rudnick's steps, although there are challenges in optimizing the use of this ability. These results provide important insights for teaching strategies that can improve students' understanding and motivation to learn.*

**Keywords:** *Reflective thinking; Mawaris Lesson; Krulik and Rudnick theory; Islamic Elementary School*

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### INTRODUCTION

Education plays a crucial role in determining the quality of individuals and society. According to the 2003 Constitution, education is a systematic and directed effort to develop the spiritual potential, personality, intelligence, morals, and skills of students. The learning process involves interactions between students, educators, and learning resources in a learning environment. The success of education depends on this interaction, where educators must understand learning theories to ensure an effective process (Pane, 2017). Mastery of learning theories by educators enables them to carry out the learning process well. One result is the ability of students to think reflectively, which means solving problems actively, persistently, and carefully considering the truth (Rahmawati, 2019). Reflective thinking consists of three important aspects: curiosity, experience-based ideas, and organization. Curiosity drives the search for factual explanations, experience-based ideas facilitate creative solutions, and organization helps to coherently organize ideas. Together, these aspects enable critical evaluation and appropriate solutions.

Reflective thinking is a meaningful thought process based on reason and purpose, involving problem-solving, drawing conclusions, and decision-making. This type of thinking develops higher-order thinking skills by connecting new knowledge with prior understanding, thinking both abstractly and concretely, applying strategies to new tasks, and understanding one's own thinking processes (Tri Wahyuni, 2018). Reflective thinking involves considering what to do, how, and why decisions are made. It helps individuals use thinking skills appropriate to the context and task. Reflective thinking develops advanced skills such as connecting new knowledge, abstract and concrete thinking, and applying strategies for new tasks. These abilities support deep learning and effective knowledge application and are often associated with problem-solving. Krulik and Rudnik describe a problem as a situation requiring a solution without clear methods or tools (Rahmawati, 2019). Reflective thinking helps individuals analyze situations, evaluate options, and develop effective strategies to overcome challenges. In education, especially in mathematics, reflective thinking enables students to select and use existing knowledge to tackle problems and achieve goals more efficiently (Fuady, 2017).

Krulik and Rudnik present problem-solving as a process in which a person uses their knowledge, skills, and understanding to find a solution to a problem they have not encountered before (Shodiqin et al., 2020). Problem-solving involves using information and skills to face challenges without clear solutions. This process requires creative and analytical thinking strategies, as well as adapting approaches to the situation. The steps include identifying the problem, evaluating alternatives, and applying appropriate strategies. Adaptability and critical thinking are crucial. Krulik and Rudnik explain that a problem is a situation that requires a solution without clear guidance on the right method. Therefore, critical and creative thinking is needed to find a solution. In this context, reflective thinking is essential as it helps individuals evaluate various possibilities and find solutions. The goal of learning is to develop students' reflective thinking abilities, but the level of this ability varies. Educators need to know the extent to which students can think reflectively so that all students can solve problems, including in the study of inheritance law.

The study of inheritance (*mawaris*) is a field that clearly provides knowledge about those who can inherit, those who cannot, the portions received by those who can inherit, and the manner of its return. Fiqh *mawaris* is a field of Islamic law that regulates the distribution of inheritance (Soleman et al., 2022). This field explains who is entitled to receive the inheritance and the share of each heir based on their relationship with the deceased and Islamic law. Fiqh *mawaris* also addresses issues of disputes or mistakes in distribution to ensure fair distribution according to Islamic principles. *Mawaris* is a discipline that deals with inheritance, how the transfer process occurs, who is entitled to receive the inheritance, and the shares of each (Mardianis, 2016). This field regulates how the inheritance is transferred from the decedent to the heirs. *Mawaris* explains who is entitled to inherit and determines how these rights are divided. Additionally, this field specifies the share of each heir according to their relationship with the deceased and the rules of Islamic law. The aim is to ensure a fair and rule-based distribution and to provide guidance for resolving any issues or disputes that may arise in the distribution process. Thus, *mawaris* play an important role in ensuring that the inheritance is managed and distributed according to Islamic legal principles and the interests of all parties involved. This study aims to understand the reflective thinking of ninth-grade students at Islamic Elementary School Fattah Hasyim in studying *mawaris* material based on the steps of Krulik and Rudnik.

## **METHOD**

This study is field research with a descriptive qualitative design, aiming to reveal the reflective thinking abilities of ninth-grade students in the inheritance law (*mawaris*) subject at Islamic Elementary School Fattah Hasyim Bahrul 'Ulum Tambakberas Jombang. As field research, this study was conducted by directly engaging with the research subjects, namely the students and their learning process, to collect in-depth data. This method allows researchers to gain a holistic insight through interaction and observation of daily activities. The research is qualitative, producing descriptive data from the words of the individuals observed, focusing on deep understanding and interpretation of the students' reflective thinking abilities in the study of *mawaris*.

In this study, the data is divided into two categories: primary data and secondary data. Primary data is obtained directly from sources, such as interviews with the Vice Principal of Curriculum, teachers, and students, to gather in-depth and relevant information. Meanwhile, secondary data is information previously collected by others, such as archival records or reports, which provide additional context to support the analysis of primary data.

The research data was collected through observation, interviews, and documentation. Observation allows the researcher to directly observe phenomena, providing details about behaviors, interactions, and related situations (Adrean et al., 2022). This helps capture nuances that may not be visible through other methods and provides a deep understanding of the context. In addition to observation, interviews and documentation were used to supplement the data and provide a more complete perspective. During observation, the researcher only observes without direct involvement. Interviews were used for preliminary studies to identify issues that need to be researched and to obtain in-depth information from a few respondents (Suanda & Nugroho, 2022). According to Sugiyono in "Metode Penelitian Pendidikan" (2016), documentation is a data collection method where the data source comes from personal documents in the form of writings, illustrations, or someone's monumental works (Fitriani & Sakban, 2018). Through this documentation process, the author can understand the reflective thinking of students in the *mawaris* subject at Islamic Elementary School Fattah Hasyim Pondok Pesantren Bahrul Ulum Tambakberas Jombang.

The approach used is source triangulation to ensure data accuracy. Source triangulation involves using different data collection techniques to obtain the same results, comparing data from observations with interviews in this research. Primary data was obtained from observations, while secondary data came from interviews (Hanafiah et al., 2023). Data analysis was conducted by reducing important information through recording, summarizing, and focusing on key points. This process helps to provide a clearer picture and facilitates understanding of the research problem. Data presentation in the form of narrative description is used to simplify understanding of what is happening in the field and to plan subsequent work (Fadli, 2021). All data collected in the field is analyzed to create a description of the students' reflective thinking in the *mawaris* subject at Islamic Elementary School Fattah Hasyim Bahrul Ulum Tambakberas Jombang, and conclusions are drawn to find patterns and relationships in the data. The conclusions provide answers to the research questions, specifically understanding the reflective thinking of students in the *mawaris* subject at Islamic Elementary School Fattah Hasyim Tambakberas Jombang..

## RESULT AND DISCUSSION

Based on the results of the study, researchers formulated that the reflective thinking of students at Islamic Elementary School Fattah Hasyim can be seen in Table 1.

Table 1. Reflective Thinking Results

a. Reading				
Number	Name	Not Thorough	Thorough Enough	Very Thorough
1	First student			√
2	Second student			√
3	Third student		√	
4	Fourth student	√		
5	Fifth student	√		
b. Understand				
Number	Name	Understand Enough	Cukup Memahami	understands very well
1	First student			√
2	Second student			√
3	Third student		√	
4	Fourth student	√		
5	Fifth student	√		
c. Strategize				
Number	Name	Can Not	Quite Able	Very Capable
1	First student			√
2	Second student			√
3	Third student			√
4	Fourth student		√	
5	Fifth student	√		
d. Answer the Question				
Number	Name	Not Suitable	Quite Suitable	Very suitable
1	First student			√
2	Second student			√
3	Third student			√
4	Fourth student		√	
5	Fifth student	√		

The research findings indicate that students who are able to read, understand, and plan well tend to be more successful in solving *mawaris* problems. They employ a systematic and structured approach, which helps them tackle challenges more effectively. Conversely, students who struggle with reading, understanding, or planning often face various challenges, feel anxious, and lack confidence, which can hinder their problem-solving process. Additional support is needed to help these students improve their comprehension, learning strategies, and confidence. With the right guidance, students who are struggling can enhance their skills in dealing with *mawaris* problems.

## **Result**

- Reflective Thinking Abilities of Ninth-Grade Students at Islamic Elementary School Fattah Hasyim in Learning Mawaris

The study conducted at Islamic Elementary School Fattah Hasyim Bahrul Ulum Tambakberas Jombang indicates that the educational process in an environment combining village schools and pesantren (Islamic boarding schools) requires educators to be critical, creative, and innovative. According to interviews with the *mawaris* (inheritance law) subject teachers, the teaching methods include reading, understanding, selecting strategies, problem-solving, and reviewing. The goal of these methods is to map students' thinking processes, facilitate teacher evaluation, and understand students' thought patterns in the learning process. An interview with the vice principal of curriculum confirmed the implementation of these methods, known as the Krulik and Rudnick steps, with similar objectives.

Interviews with students revealed various ways of reflective thinking. The first student thinks sequentially and uses rules from the Quran or classical Islamic scholars' texts. The second student follows the teacher's instructions and works with detail and caution. The third student breaks problems into smaller steps and looks for patterns to find the correct solution. The fourth and fifth students acknowledged difficulties in understanding and solving *mawaris* problems, citing a lack of interest and comprehension of Arabic vocabulary.

Supporting and inhibiting factors also varied. The pesantren environment encourages independence and motivation to learn, while the lack of like-minded friends and difficulties with calculations or Arabic vocabulary present obstacles. In an additional interview, the first student explained the steps of reflective thinking, from analyzing the problem to evaluating the results. The *mawaris* subject teacher estimated that about 10% of students apply reflective thinking, with inhibiting factors including students' interests, ineffective lesson times, and the combination of general and religious subjects. Observations in the field found that lessons scheduled at the end of the day and the perceived urgency of the *mawaris* subject further hinder concentration and student interest in learning.

Overall, this study shows that despite various challenges, the efforts made by educators and the teaching methods applied can help students develop reflective thinking, although the results vary depending on individual and environmental factors.

- The Reflective Thinking Process of Ninth-Grade Students at Islamic Elementary School Fattah Hasyim Based on Krulik and Rudnick's Theory

The research on the reflective thinking process of students in solving *mawaris* (inheritance law) problems, based on Krulik and Rudnick's steps, reveals various approaches and challenges faced by the students. The study indicates significant differences in how students read, understand, strategize, answer questions, and review their work.

First, in the reading stage, students exhibited different approaches. The first, second, and third students emphasized the importance of reading the problem carefully and thoroughly, understanding every detail and part of the question as a crucial step in correctly solving the problem. They demonstrated a systematic and meticulous approach. Conversely, the fourth and fifth students tended to read the problem quickly or superficially, often accompanied by fear and difficulty concentrating. This approach led to a less thorough understanding and challenges in problem-solving.

In the understanding stage, the first, second, and third students made efforts to grasp the question's intent and the given information deeply. They employed techniques such as re-reading and finding connections between pieces of information to clarify their understanding. Conversely, the fourth and fifth students experienced difficulties in understanding the problem after reading it. They often felt confused and struggled to process the information, indicating a need for additional support in comprehension.

During the strategy formulation stage, the first, second, and third students developed structured plans, such as outlining the relationships between heirs, identifying relevant formulas, and creating notes or diagrams to assist in problem-solving. On the other hand, the fourth and fifth students were more likely to rely on external help or luck, lacking clear plans or independent strategies, which indicated a lack of confidence and uncertainty.

In the problem-solving stage, the first, second, and third students recorded essential information, created tables when necessary, and systematically and carefully worked through the problem. They found the inheritance problems challenging and engaging. Conversely, the fourth and fifth students felt anxious and lacked confidence, relying more on assistance from others or books, and demonstrated a less structured approach to solving the problems.

Lastly, in the reviewing and correcting stage, the first and second students engaged in thorough reviews and reflections, viewing mistakes as opportunities to learn and improve their understanding. They expressed satisfaction when they found the correct solution and saw errors as chances for further learning. The attitudes of the other students towards reviewing their work were not as clearly defined in the available data. However, the existing patterns suggest a similar tendency among some students to view mistakes as part of the learning process.

## **Discussion**

- Reflective Thinking Abilities of Ninth-Grade Students at Islamic Elementary School Fattah Hasyim in Learning *Mawaris*

This study found that the majority of students at Islamic Elementary School Fattah Hasyim have applied reflective thinking in solving *mawaris* problems using systematic strategies. However, some students have not yet demonstrated the optimal application of this approach. These findings align with Ulfa's research, which indicates that students with high and medium mathematical abilities successfully use the reflective thinking process according to Krulik and Rudnick's theory. The learning process at Islamic Elementary School Fattah Hasyim includes effective methods for mapping students' thought processes, supporting in-depth analysis, and applying solutions consistent with reflective thinking theory.

The teaching methods at Islamic Elementary School Fattah Hasyim are in line with Dewey's theory of reflective thinking, which encompasses analysis, problem definition, linking theory to problems, evaluating hypotheses, and applying solutions. This approach not only facilitates teachers in understanding and evaluating students' problem-solving methods for *mawaris* but also enhances students' critical and reflective thinking skills overall. With this method, teachers can provide more constructive and specific feedback based on the mapping of students' thought processes, which, in turn, supports comprehensive improvement in learning.

The study also emphasizes the importance of teacher training in adopting and implementing teaching strategies that support reflective thinking. This ensures that all students, regardless of their initial ability levels, can effectively benefit from this approach. The implementation of reflective thinking theory, as found in this study, is not only relevant in the context of solving *mawaris* problems but also has the potential to be applied in various other fields of study. Thus, reflective thinking theory can enhance students' understanding and analytical skills more broadly, promoting better academic and cognitive development.

- The Reflective Thinking Process of Ninth-Grade Students at Islamic Elementary School Fattah Hasyim Based on Krulik and Rudnick's Theory

The reflective thinking process of students at Islamic Elementary School Fattah Hasyim follows the steps outlined by Krulik and Rudnick, which include reading, understanding, strategizing, answering, and revising. The first step, reading, is the initial stage where students identify the problem carefully, following the principle of "read and think." At this stage, students are expected to analyze and understand the problem thoroughly before moving on to the next step. Next, exploration and planning are part of "explore and plan," allowing students to gain a deeper understanding of the problem and develop appropriate strategies for its resolution.

After understanding the problem, students need to choose the appropriate strategy to address it, in line with the principle of "select a strategy." This process involves selecting methods or approaches to find a solution and applying various techniques, such as prediction, calculation, and the use of aids. In the answering phase, students apply the chosen strategy to achieve the desired results. This step is crucial in reflective thinking, ensuring that students can solve the problem in a structured and effective manner.

Although reflective thinking requires time and is influenced by mood, this approach provides significant benefits in understanding material and enhancing critical thinking skills. The advantages of reflective thinking include a deeper comprehension of the material and the development of critical thinking abilities. However, there are also drawbacks, such as the time required and challenges in objective assessment. Support from practical experience, a supportive learning environment, relevant methods, and social support can maximize the benefits of reflective thinking. Nevertheless, factors such as time constraints and lack of support can still be barriers in this process.

## CONCLUSIONS

This analysis concludes that Islamic Elementary School Fattah Hasyim has successfully encouraged students to apply reflective thinking in studying inheritance science. The majority of students are able to identify problems, understand questions, select strategies, find answers, and reflect on and develop solutions. This aligns with Dewey's theory of reflective thinking and Krulik and Rudnick's problem-solving theory. However, some students have not yet reached an optimal level of reflective thinking, consistent with other research findings indicating differences in problem-solving abilities based on mathematical proficiency. The school's learning approach helps teachers understand and evaluate students' problem-solving methods in inheritance science. In the context of Krulik and Rudnick's steps, students follow the stages of reflective thinking: reading carefully, exploring and planning, selecting strategies, finding answers, and reflecting on and developing solutions. Despite challenges such as the time required, difficulties in assessing students' actions, and the influence of mood, reflective thinking facilitates a deeper understanding of the material and the development of critical skills. To address these challenges, teachers can manage reflection time efficiently, develop appropriate assessment tools, provide support to students, and integrate reflective thinking systematically into instruction. Supporting factors such as practical experience, a supportive learning environment, relevant teaching methods, and social support are very helpful while hindering factors such as time constraints, lack of support, fear of failure, and insufficient experience need to be addressed to maximize the benefits of reflective thinking.

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