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Students Mathematical Reflective Thinking Ability in Solving Higher Order Thinking Skills (HOTS) Type Problems as Seen From Cognitive Style

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Abstract

One of the high-level thinking skills that plays an important role in problem solving is reflective thinking. Reflective thinking helps students think about what they do and why they do it. In fact, this ability is still in the low category. Each student has different characteristics. This is related to the way a person absorbs and processes the information they receive, resulting in different ways of thinking in solving problems. The purpose of this study was to describe the mathematical reflective thinking skills of students with dependent cognitive styles and independent cognitive styles when solving HOTS-type problems. This study involved teachers and students at SMK Muhammadiyah 1 Surakarta. The data collection method in this study was the test and interview method and will be analyzed using descriptive analysis. The results showed that students with independent cognitive styles were able to meet all indicators of reflective thinking, such as reaction, evaluation, and reflection. Students with dependent cognitive styles were unable to meet the three indicators of reflective thinking. Students with domain dependent cognitive styles were only able to meet the reaction indicator, but the evaluation and reflection indicators had not been met. It can be said that students with domain independent cognitive styles solve problems more thoroughly than students with domain dependent cognitive styles.

INTRODUCTION

Education is a process that is essential for human beings to develop skills and knowledge in order to produce high-quality human resources (Kusnadi & Azzahra, 2024; Masnah et al., 2024;

Nahdiyah et al., 2024). Mathematics is a science that is the basis of other sciences. Mathematics contains symbolic language as well as a universal language in describing quantitative and spatial relationships that function to facilitate human thinking. Mathematics contains the science of understanding, strategy, and concentration that helps humans develop the ability to think systematically and structured (Obeidat et al., 2021). With mathematics, someone is trained on how to think and reason in drawing conclusions, for example, in investigation activities, exploration, experiments, showing similarities, differences, and consistency. This is what makes mathematics important to learn from elementary school to college.

Mathematics learning plays an important role in developing students' thinking skills, especially Higher Order Thinking Skills (HOTS) (E. D. Putra & Amalia, 2019). HOTS is a high-level thinking skill consisting of the ability to analyze, evaluate, and create. HOTS-type questions are able to stimulate thinking skills that are not just remembering, restating, or referring without processing but also being able to think logically and creatively (Arum et al., 2023). So high-level thinking skills do not only test the ability to memorize a subject matter but rather the application which includes reflective, critical, creative, logical, and analytical thinking skills. The success of mathematics learning can be measured by the extent to which students are able to master these abilities to solve complex problems that require in-depth analysis (Hamzah & Muhlisrarini, 2016).

One of the important skills in HOTS is reflective thinking. John Dewey stated that reflective thinking is a deep thinking process, involving understanding problems, searching for information, and solving problems effectively. In mathematics learning, this ability is very important because it allows students to not only solve problems, but also understand the process of solving them by considering various related aspects (Aldiansyah, 2022). Reflective thinking helps students evaluate themselves on what they have learned and how that knowledge can be applied (Kartikasari & Kurniasari, 2021).

In addition to reflective thinking, cognitive style affects students' ability to solve mathematical problems. Cognitive style reflects the characteristics and ways in which students process information. Students with a field dependent style are more dependent on the environmental context in understanding information, while students with a field independent style are more independent in analyzing problems. Cognitive style affects mathematical literacy skills because students interpret mathematics according to their experiences and environment (Getteng, 2016). Based on the results of interviews with mathematics teachers at school, many students have not recognized their own cognitive style. In mathematics learning, students are not used to being given HOTS-type questions. This affects their ability to solve HOTS problems, especially quadratic equation problems. Many students have difficulty solving these problems due to environmental influences, lack of self-confidence, and minimal attention to teacher instructions.

Based on the background explained above, the researcher has investigated students' mathematical reflective thinking when solving HOTS type quadratic equation problems from the perspective of cognitive style, namely field-dependent and field-independent cognitive styles. The researcher plans to explain this in a study entitled "Students' mathematical reflective thinking ability in solving (HOTS) type problems viewed from cognitive style."

LITERATURE REVIEW

Reflective Thinking

Thinking is an effort that has the goal of achieving various competencies in solving problems. By thinking, humans can develop their insights and can improve their quality so that they are able to be reflective and critical in solving a problem. Reflective thinking ability is the

ability of students to think to link understanding of previous knowledge in analyzing and evaluating problems with careful consideration to make conclusions (Suhaji et al., 2020).

John Dewey as quoted by defines reflective thinking as active, persistent, and continuous thinking about a belief or assumption derived from knowledge, with clear reasons to support further conclusions (Hadimu et al., 2020; A. P. O. Putra & Hakim, 2023). Reflective thinking is meaningful thinking based on reasons and goals. This is a type of thinking that involves solving problems, drawing conclusions, considering related issues, and making decisions, using effective skills for the context and problems at hand (Nafiah & Suyanto, 2014; Napfiah, 2018).

That people who have the ability to think reflectively by identifying problems, choosing alternative solutions or solutions, developing problem interpretations, and analyzing and evaluating problems to produce solutions. Through reflective thinking, students can evaluate and reconsider what they have done at any time. On the other hand, the evaluation process aims to find and decide on solutions that will be taken to solve problems in order to obtain optimal solutions (D. Widyastuti & Nuriadin, 2021).

Students' reflective thinking in solving mathematical problems consists of three stages, namely reacting, elaborating, and contemplating (Surbeck, Han, & Moyer, 1991). At the reacting stage, students react using the knowledge and experience gained to the problems received. At the elaborating stage, students compare the knowledge they have and other experiences they have had with the problems received. Furthermore, at the contemplating stage, students prioritize personal knowledge and are constructive towards the problems or difficulties faced (Pambudi et al., 2021; Sholihah et al., 2021).

Based on the understanding of reflective thinking, it can be concluded that reflective thinking is thinking with great effort to identify and solve a problem by applying existing knowledge, as well as modifying understanding based on new information and experiences in making conclusions.

Higher Order Thinking Skills(HOTS)

Students' high-level thinking skills can be measured by the levels of thinking contained in Bloom's Taxonomy. Bloom's Taxonomy in the cognitive domain is divided into 2 categories, namely low-level thinking or commonly called Lower Order Thinking Skills (LOTS) and high-level thinking or Higher Order Thinking Skills (HOTS). Bloom's Taxonomy has six levels, namely knowledge (C1), understanding (C2), application (C3), analysis (C4), evaluation (C5), and creation (C6). Categories C1, C2, and C3 are included in LOTS, while C4, C5, and C6 are included in the HOTS category (Fanani, 2018; Latifah & Helmawati, 2019).

Higher Order Thinking Skillor HOTS is a process that not only memorizes and conveys what is known, but also the ability to connect information that has been obtained in an effort to determine decisions and solve problems in new situations (Musrikah, 2018). HOTS is also defined as the ability of students to reason and argue to find solutions to solving a problem (Wibowo, et al.; 2016: 75). Having HOTS skills requires students to be able to understand, analyze, manipulate, categorize, create, and apply them when solving new problems (E. D. Putra & Amalia, 2019).

The importance of students being trained in HOTS in learning, namely to understand information, quality thinking processes and quality end results. Understanding information means that students not only know and understand information but also involve the ability to analyze information, find the main ideas contained in the information, make hypotheses, draw conclusions and produce quality solutions. A quality thinking process means that HOTS is needed so that students are able to follow a quality thinking process in a holistic educational process where the process has the same important position as the results. Quality end results show that HOTS plays a role in directing students to produce new high-quality products. Based on the explanation above,

it can be concluded that high-level thinking skills are thinking skills that are not just about remembering, restating, processing new information by referring to concepts that have been learned to produce the right solution.

Cognitive Style

Each individual has different abilities to understand and absorb information in learning. Many factors underlie these differences, one of which is cognitive style. Cognitive style reflects the characteristics of students in using cognitive functions that are consistent and long-lasting. Cognitive style refers to how an individual receives, processes, stores or uses information in solving a problem (Hasan, 2020).

According to Vendiagrys et al. (2015), cognitive style is a person's way of thinking to learn and receive various different stimuli. Defines cognitive style as an individual's thinking style, including the ability to receive, store, process, and present information consistently so that it has a direct or indirect impact on behavior and activities (Yulianti, 2019). According to Haloho & Hotnida (2016), cognitive style is a unique way that individuals use mental activities in the cognitive field, namely thinking, remembering, solving problems, making decisions, organizing and processing information that is consistent. Based on the explanation above, it can be concluded that cognitive style is a characteristic of a person's thinking in using cognitive abilities, namely, feeling, remembering, processing information and drawing conclusions in consistent problem solving.

METHODS

This type of research is a qualitative research with a descriptive approach. The purpose of this method is to describe information and explain what happened according to the facts and findings in the field (Gunawan, 2017; Miles et al., 2014).This research was conducted at SMK Muhammadiyah 1 Surakarta. The subjects used in this study were 4 students of class XI D. The purposive sampling technique was used in selecting subjects, namely based on the recommendations of subject teachers and student willingness. The object of study was the ability to think reflectively in students with field dependent and field independent cognitive styles in solving HOTS problems.

This study used the GEFT test instrument, HOTS type questions, and interview guidelines that have been validated by lecturers and mathematics teachers. Group Embedded Figures Test (GEFT) is the ability to examine research subjects by identifying simple shapes in complex patterns, the results of this test determine whether students have a field dependent or field independent cognitive style. The test consists of complex images divided into three parts to be worked on in 15 minutes. The overall score is determined using the assessment guidelines, a total score between 9 and 18 is classified as field independent and a score below 9 is classified as field dependent.

After identifying cognitive styles, students are then given a test to determine their mathematical reflective thinking skills. The instrument for the students' mathematical reflective thinking test is in the form of HOTS test questions and interview guidelines. The HOTS questions given contain 2 questions with quadratic equation material with context number 1a meeting the C4 analyzing and C5 evaluating levels. While context number 1b meets the C6 creating cognitive level. If students have finished working on the HOTS test questions, the next step is to select subjects with each of the 2 students' cognitive styles and interview them. Interviews are used to support and complement students' mathematical reflective thinking skills in solving HOTS questions. The next step is to draw conclusions regarding students' mathematical reflective thinking skills according to the indicators set from the results of examining the HOTS test

questions and interview guidelines. Indicators of mathematical reflective thinking skills are presented in Table 1 below.

Table 1. Indicators of Mathematical Reflective Thinking Ability

No	Phase	Indicator
1.	*Reacting* (think for action)	● Students are able to mention everything they know ● Students are able to mention anything that is asked ● Students are able to state the relationship between what is known and what is asked. ● Students are able to mention methods that are considered effective in solving problems.
2.	*Comparing* (thinking about evaluation)	● Students are able to explain the answers to problems they have encountered. ● Students are able to relate the problems asked to problems they have faced.
3.	*Contemplating* (thinking for critical inquiry)	● Students are able to correct errors in each answer ● Students are able to correct and explain if there is an error in the answer. ● Students are able to make conclusions correctly and precisely

The data analysis technique in this study uses a descriptive approach which only collects, writes, and concludes responses from sources obtained by the author by providing questionnaires, tests and interviews related to this study.

The presentation of data is done in the form of brief descriptions, charts, relationships between categories, stating that the most frequently used to present data, in qualitative research is with narrative text. This study uses triangulation techniques to compare test result data with interview result data, while in triangulation techniques from interview results, researchers match the data presented with what researchers see through observation and what is obtained in the form of documentation.

RESULTS AND DISCUSSION

GEFT Test Results

The results of the cognitive style test scores of 19 students in class XI D are shown in Table 2 below.

Table 2. GEFT Test Results

Cognitive Style	Frequency	Percentage (%)
Field Dependent	6	31.58
Field Independent	13	68.42
Total	19	100

Results of Students' Reflective Thinking Skills

Reflective thinking ability is the ability to identify what is already known, apply existing knowledge to other situations, and revise understanding based on new information and experiences. The researcher took 2 students as subjects for each cognitive style. Furthermore, a mathematical reflective thinking test was conducted using the HOTS test research instrument and interview guidelines. The research subject code is in the following table 3.

Table 3. Research subject codes

No	Cognitive Style	Code
1.	Field Independent Subject 1	SFI 1
2.	Independent Field Subject 2	SFI 2
3.	Field Dependent Subject 1	SFD 1

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4.	Field Dependent Subject 2	SFD 2

Reflective Thinking Skills of Field Independent Students

The answers to the SFI 1 written test on HOTS questions are shown in Figure 1 below:

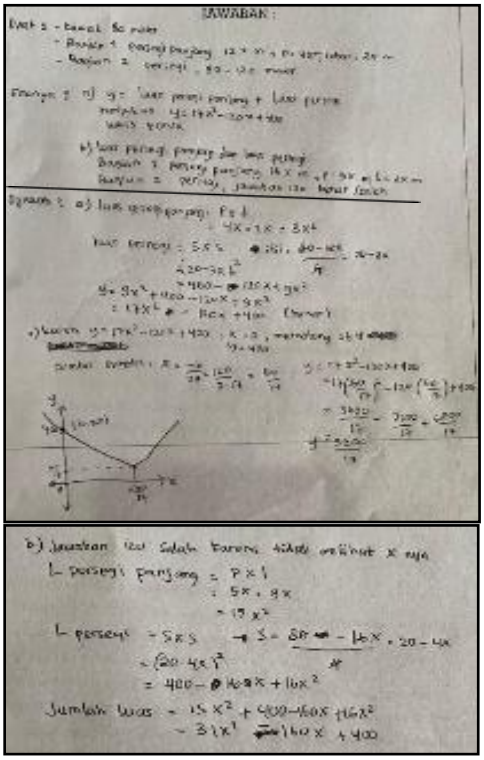


Figure 1. SFI 1's answer to the HOTS question

The results of the interview by the researcher were given the code "P" with the following SFI 1 subjects:

P : *Can you mention what is known in the question?*
SFI 1 : *In the question, it is known that the total length of the wire is 80 meters divided by two. The first part of the wire is made into a rectangle with a length of 12 x for details, the length is 4 x m and the width is 2 x m. The second part of the wire will be made into a square.*
P : *Can you mention what is asked in the question?*
SFI 1 : *Question A proves that y is the sum of the areas of a square and a rectangle and then draws a curve. Question B examines Iza's answer.*
P : *What method do you use to solve problems?*
SFI 1 : *Find the area of a square and the area of a rectangle, then draw a curve.*
P : *Try to explain the answer to number 1a that you wrote on the answer sheet!*
SFI 1 : *After y = 17x2 – 120x + 400 is proven, to draw the y curve by looking for the intersection points on each axis, discriminant, and axis of symmetry, and the peak.*
P : *After checking Iza's answer, is there a mistake or not? Try to explain the reason?*
SFI 1 : *Iza's answer is wrong, ma'am, because when looking for the side of the square, Iza didn't notice that there was an "x".*
P : *What is the conclusion of question number 1 b?*
SFI 1 : *After I corrected it according to the method in number 1a, the area of the square was 16x2 – 160x + 400, so the total area was 31x2 – 160x + 400.*

The answers to the SFI 2 written test on HOTS questions are shown in Figure 2 below:

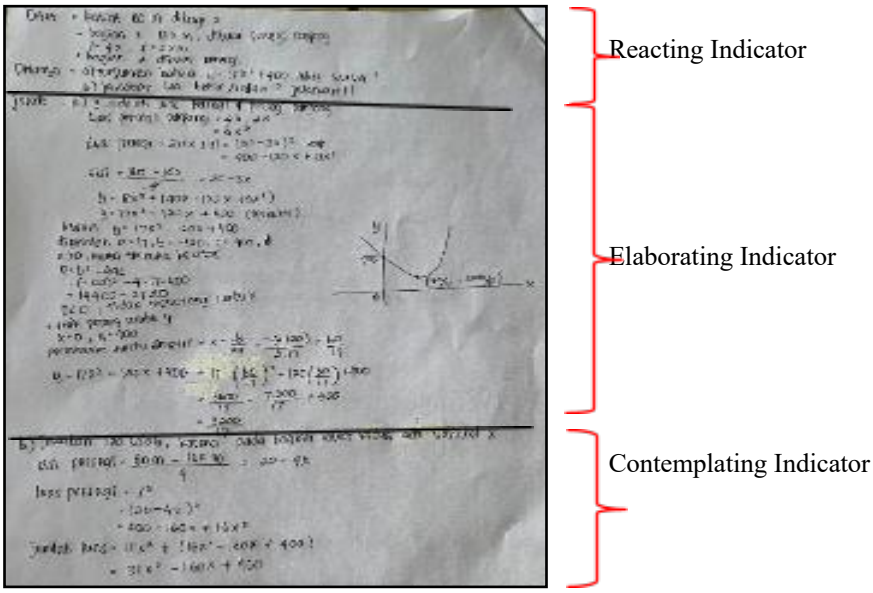


Figure 2. SFI 2's answer to the HOTS question

The results of the interview by the researcher were given the code "P" with the following SFI 2 subjects:

P	:	*Can you mention what information is known and asked in the question?*
SFI 2	:	*The wire with a length of 80 m is divided into two parts. The length of the first part is 12x m made into a rectangle with p = 4x m and l = 2x m. The second part is made into a square. Asked to prove "y" which is the sum of the areas of the square and rectangle and draw its curve. The b corrects the existing iza answer.*
P	:	*What method do you use to solve problems?*
SFI 2	:	*Prove "y" and draw a curve.*
P	:	*Try to explain the answer to number 1a that you wrote on the answer sheet!*
SFI 2	:	*Find the area of a rectangle, find the area of a square, after it is proven correct then draw a curve. When drawing a curve, see the method in the book that was taught before.*
P	:	*After checking Iza's answer, is there a mistake or not?*
SFI 2	:	*Iza's answer is wrong, ma'am.*
P	:	*Is there any connection between the problems in numbers 1a and 1b?*
SFI 2	:	*Yes, both are looking for the area of a square and a rectangle.*
P	:	*What is the conclusion of question number 1 b?*
SFI 2	:	*According to the solution number 1a, when finding the area of the square Iza did not pay attention to the variable "x". So the answer is wrong and I have corrected it.*

Based on Figures 1, 2 and the results of interviews with SFI 1 and SFI 2, it was found that:

1. Reacting Indicator (thinking for reaction): SFI 1 and SFI 2 are able to demonstrate the ability to respond to questions well. Both subjects are able to mention all the information that is known and asked, such as the total length of the wire, the division of the wire into two parts, namely a rectangle and a square. This ability reflects a good understanding of the context of the question and is able to construct a mathematical model with their own language style, which shows that the student has the skills to describe problems verbally. SFI 1 and SFI 2 are able to mention methods that are considered effective in solving problems.
2. Elaborating Indicator (thinking for evaluation): in explaining the method used, SFI 1 and SFI 2 are able to describe the steps taken to solve the problem. Both mention step 1 of finding the area of a square and a rectangle and drawing a curve by finding the intersection point, axis of symmetry, vertex and discriminant. This shows that SFI 1 and SFI 2 not only follow the procedure, but are also able to explain the relationship between facts and data sufficiency

with information and problems that have been faced before, which strengthens the argument that the subject has a deep understanding of the solution method used.

3. Contemplating Indicator (thinking for critical inquiry): the subject demonstrates his/her ability to evaluate and revise the answer. SFI 1 clearly identifies the error in Iza's answer and provides a logical explanation for why the answer is wrong. By stating that Iza did not notice the variable 'x', the subject demonstrates a good understanding of the importance of paying attention to each element in solving the problem. The conclusion drawn is also consistent with the analysis conducted, where the subject successfully calculated the correct area. Similarly, SFI 2 was able to identify errors and was willing to correct the answer correctly.

Reflective Thinking Skills of Field Dependent Students

The answers to the SFD 1 written test for HOTS questions are shown in Figure 3 below:

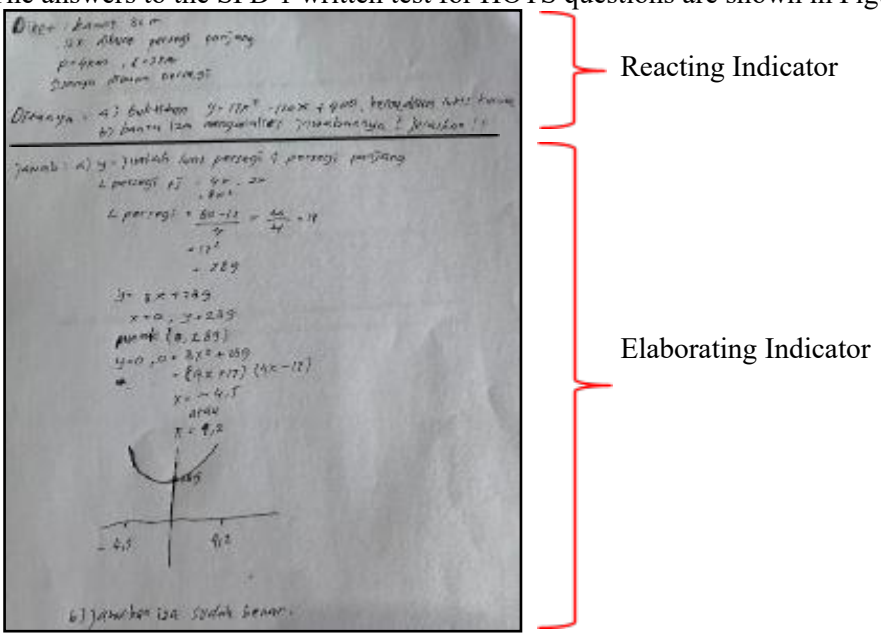
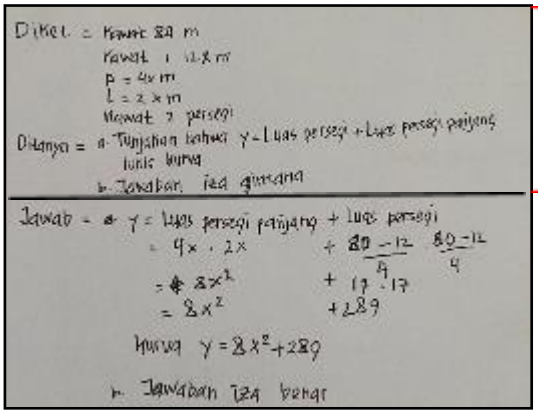


Figure 3. SFD 1's answer to the HOTS question

The results of the interview by the researcher were given the code "P" with the following subject SFD 1:

P : *Can you mention what is known in the question?*
SFD 1 : *It is known that there is a wire length of 80 meters. A wire with a length of 12x m is made into a rectangle, p = 4x m, l = 2x m. The rest is made square.*
P : *Can you mention what is asked in the question?*
SFD 1 : *Prove "y" and draw a curve.*
P : *What method do you use to solve problems?*
SFD 1 : *The areas of the square and rectangle are added.*
P : *Try to explain the answer to number 1a that you wrote on the answer sheet!*
SFD 1 : *After finding y = 8x2 – 289, then create a curve by finding the peak and intersection points on the x-axis and y-axis.*
P : *Is the answer to number 1a correct and has it been corrected?*
SFD 1 : *That's all ma'am*
P : *What is the conclusion for question b?*
SFD 1 : *Iza's answer is correct, ma'am. I copied the method Iza used when doing number 1a.*

The answers to the SFD 2 written test on HOTS questions number are shown in Figure 4 below:



Reacting Indicator

Figure 4. SFD 2's answer to the HOTS question

The results of the interview by the researcher were given the code "P" with the following SFD 2 subjects:

P	:	*Can you mention what information is known and asked in the question?*
SFD 2	:	*There is a wire with a length of 80 meters divided into two. The length of the first wire is 12x m, p = 4x m, l = 2x m. The second wire is formed into a square. Show y = area of square + area of rectangle and draw the curve.*
P	:	*What method do you use to solve problems?*
SFD 2	:	*Find the area of squares and rectangles and then draw curves.*
P	:	*Try to explain the answer to number 1a that you wrote on the answer sheet!*
SFD 2	:	*Find the area of a rectangle, find the area of a square like Iza's method, after finding y, draw the curve.*
P	:	*After checking Iza's answer, is there a mistake or not?*
SFD 2	:	*Iza's answer is correct.*
P	:	*Is there any connection between the problems in numbers 1a and 1b?*
SFD 2	:	*Yes, both are looking for the area of a square and a rectangle.*
P	:	*What is the conclusion of question number 1 b?*
SFD 2	:	*That's all true, ma'am.*

Based on Figures 3, 4 and the results of interviews with SFD 1 and SFD 2, it was found that:

1. Reacting Indicator (thinking for reaction): SFD 1 and SFD 2 subjects can identify the information in the problem. Both subjects are able to write what is known and asked such as, the length of the wire is 80 m, details of the length and width to form a rectangle. SFI 1 and SFI 2 are able to write mathematical models with their own language style, this shows that the subjects have a good initial understanding before choosing a solution method.
2. Elaborating Indicator (thinking for evaluation): in explaining the solution method, SFD 1 can connect theory and practice by stating adding the area of a square and a rectangle to find the value of “y”. This shows that SFD 1 not only carries out the solution steps, but also understands the relationship between the components in the problem. While SFD 2 has not been able to explain the solution method, the subject writes the answer by imitating the solution in the problem. This shows that SFD 2 still needs to develop analytical skills and the ability to link problems with learning knowledge.
3. Contemplating Indicator (thinking for critical inquiry): it can be concluded that both subjects do not meet this indicator. SFD 1 and SFD 2 cannot make conclusions correctly. Both have not been able to correct and explain if there is an error in the answer, and do not realize that there is an error in the completion of the iza. This indicates that although the subjects have a good understanding, both still need more practice in correcting and evaluating answers correctly.

DISCUSSION

This study explains that students who have a field independent cognitive style can have a more detailed level of mathematical understanding, where they can re-explain all forms of information obtained. The determination of reflective thinking is adjusted to the type of High Order Thinking Skill (HOTS) questions which have three levels, namely high, low, and medium. High-level thinking skills are obtained from a student's habit of being able to build their own knowledge from the learning process (Arum et al., 2023; Fanani, 2018). Questions with the High Order Thinking Skill (HOTS) type are effective questions to provide student responses to high-level thinking and reflective thinking (E. Widyastuti & Jusra, 2022).

It was noted in the interview results that students tended to have difficulty in choosing a solution method when solving HOTS questions. Essay questions themselves are questions that are designed to require students to strategize to solve problems in the questions according to their own answers (Saraswati & Agustika, 2020). Reflective thinking is very necessary in daily activities because it is related to problem solving. The ability to think reflectively can be interpreted as the ability to explain something that is already known, apply the knowledge possessed in other situations, and revise part of the understanding based on information and experience (Upu et al., 2021).

This is in line with Hasan's opinion (2020), which explains that students who have a field independent cognitive style have more detailed characteristics in providing explanations and are able to structure the information obtained and are able to separate themselves from the influence of the surrounding environment (Hasan, 2020). In addition, other studies also explain that students who have a field independent cognitive style will go through all phases of reflective thinking, namely reacting, elaborating, and contemplating. However, for students who have a field dependent cognitive style, not all of them go through the phase of reflective thinking (Noviyanti et al., 2021).

This study explains that students who have a field independent cognitive style are able to pass the reacting indicator which contains being able to mention what must be known in the question, and knowing what must be asked in the question, the relationship between what is asked and what is known, and students are able to explain what is known is sufficient to answer what is asked. In accordance with research (Suhaji et al., 2020), "students are able to understand the questions given, can provide explanatory information and connect the information given to be used to solve problems".

Furthermore, in the elaborating phase, students are able to provide explanations about the strategies or methods used in solving HOTS-type questions that are considered effective. Students with a field independent cognitive style in reflective thinking are able to carry out the components of reflective thinking, namely elaborating and are able to go through the stages of making plans (Noviyanti et al., 2021). The reflective thinking process does not always depend on students, but can also be a process of utilizing existing insights to solve the problems faced. The importance of this reflective thinking has the aim of being a means of encouraging thinking during situations in problem solving, because it provides an opportunity to learn and think about the best strategies to achieve learning goals (Wahyuni et al., 2018).

The Contemplating phase is a phase where students are able to explain the problems in the questions, then correct and explain the errors that occur (Hadimu et al., 2020). This study found that students who have a field independent cognitive style are able to pass the contemplating indicator, so it is concluded that students have passed the 3 indicators of the reflective thinking phase. This is also in accordance with the opinion that students with a field independent cognitive style in reflective thinking are able to carry out the components of reflective thinking, namely contemplating and are able to draw conclusions from the HOTS questions that have been made

(Hadimu et al., 2020). Students who have a field independent cognitive style are more analytical, internally motivated and have their own goals, objectives, strategies, and reinforcement. All learning styles will be able to develop students' High Order Thinking Skills if given a maximum learning process.

Different from students with a field dependent cognitive style, because students who have this cognitive style have characteristics that are easily influenced by various thoughts that are comprehensive so that they tend to view patterns as a whole, without separating the parts (Ngilawajan, 2013; Noviyanti et al., 2021). This study found that students tend to have difficulty or difficulty in separating information received such as in solving a HOTS type problem. Students who have a Field Dependent cognitive style tend to be able to explain only the reacting part, but find it difficult to explain in the elaborating and contemplating indicators. This is also in line with the study entitled "High School Students' Thinking Process in Solving Mathematical Problems of Derivative Material Reviewed from Field Independent and Field Dependent Cognitive Styles" which explains that in solving derived material problems, Field Independent Subjects understand the problem better when compared to Subjects with Field Dependent Cognitive Style (Ngilawajan, 2013).

Each student's thinking ability is different. High-level thinking ability can be interpreted as a person's ability to carry out mental and intellectual activities regularly and systematically that involve awareness in conceptualizing, applying, analyzing, and evaluating information (Mutia Windya et al., 2022). Students look for the main points of the given problem and try to work on and solve it using the right mathematical concepts so that students can choose the right strategy. Reflective thinking is very important for students, because there is a directed activity process where individuals are required to analyze, evaluate, motivate, get deep meaning, and be used in the right learning process (Nabilah et al., 2023).

This is also in accordance with the study entitled "Analysis of Students' Mathematical Reflective Thinking Ability in Solving Mathematical Problems on Triangle Material" which explains that reflective thinking is important for children in solving mathematical problems. This does not depend solely on students' knowledge, but also the process of understanding the information obtained so that students can solve the problems faced (Duwila et al., 2022). The process of reflective thinking is not only a sequence of ideas, but also steps in such a way that each idea refers to previous opinions to move on to the next process.

CONCLUSION

The conclusion of this study is that students with Field Independent cognitive style are able to fulfill all indicators of reflective thinking, namely Reacting, Elaborating, and Contemplating. Students with a field independent (FI) cognitive style tend to be more able to think critically and independently. They have the ability to separate information from its context and are easier to construct logical arguments. FI students are usually more confident in exploring various possible solutions and are less influenced by the views of others. In reflective thinking, they can better analyze errors in the problem-solving process and learn from previous experiences to improve their results in the future. This allows them to produce more original and innovative thinking

Students with Field Dependent cognitive style are only able to fulfill the reacting indicator, while the elaborating and contemplating indicators have not been fulfilled. Reflective thinking in students with a field dependent (FD) cognitive style tends to involve processes that are more influenced by social and environmental contexts. Students with this style usually pay attention to the information provided as a whole and are more easily influenced by the opinions of others. They may have difficulty in organizing structured thoughts and often need external help to

understand problems in depth. When they are faced with challenges, they may rely more on their experience with familiar contexts rather than trying to develop creative and independent solutions.

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