MATHEMATICAL CRITICAL THINKING ABILITY JUNIOR HIGH SCHOOL STUDENTS REVIEWED FROM COGNITIVE STYLE

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ABSTRACT

This research aims to determine the mathematical critical thinking abilitiezuhrtQs of class VIII students at SMP Negeri 4 Kendari in terms of cognitive style. The subjects of this research were class VIII 4 students consisting of 1 student with a weak field dependent cognitive style, 1 student with a strong field dependent cognitive style, 1 student with a weak field independent cognitive style, and 1 student with a strong field independent cognitive style. Data collection techniques used the Group Embedded Figures Test (GEFT), Mathematical Critical Thinking Ability Test, and Interviews. Checking the validity of the data uses triangulation techniques. Based on the four critical thinking indicators investigated, namely: interpretation, analysis, evaluation, and inference, the results of the research show that: (1) Students whose Field Independent cognitive style is weak are able to master the indicators of interpretation, analysis, evaluation, but are unable to master the indicators of inference . Students with a strong Field Independent cognitive style are able to master the indicators of interpretation, analysis, evaluation and inference; (2) Students whose Field Dependent cognitive style are weak are able to master interpretation indicators, are less able to master analysis and evaluation indicators, and are unable to master inference indicators. Students who have a strong Field Dependent cognitive style are able to master interpretation and analysis indicators, less able to master evaluation and inference indicators. Students with a Field Independent cognitive style have better mathematical critical thinking skills than students with a Field Dependent cognitive style.

Keywords: mathematical critical thinking, cognitive style, field dependent

INTRODUCTION

Education is a process that humans carry out to develop themselves as best as possible. Education is also a means of developing abilities and character and making humans intelligent. The objectives of education in Law no. 20 of 2003 concerning the National Education System, it is stated that national education aims to develop abilities and shape the character and civilization of a dignified nation in order to make the nation's life more intelligent. To achieve these educational goals, the government created a learning curriculum, one of which is the mathematics learning curriculum (Depdiknas, 2003)

Learning mathematics is very important learning, because in everyday life we cannot be separated from the use of mathematics, ranging from simple problems to more complex problems. Mathematics subjects need to be taught to all students starting from elementary school to equip

students in logical, analytical, systematic, critical and creative thinking as well as the ability to collaborate (Ministry of National Education, 2006). Students' mathematical knowledge is better if students are able to construct the knowledge they have previously with the new knowledge they get. Therefore, active student involvement greatly influences the success of their mathematics learning. In learning mathematics, teachers must be able to develop several aspects of students' abilities, whether in the form of cognitive, affective or student creativity.

Content Standards and Graduate Competency Standards in the curriculum state that providing mathematics subjects aims to ensure that students have the ability to: (1) Understand mathematical concepts, explain the relationship between concepts and apply concepts or logarithms in a flexible, accurate, efficient and precise manner in solving problems, (2) Using reasoning on patterns and properties, carrying out mathematical manipulations in making generalizations, compiling evidence or explaining mathematical ideas and statements, (3) Solving problems which includes the ability to understand problems, design mathematical models, complete models, and interpret the solutions obtained, (4) Communicate ideas using symbols, tables, diagrams or other media to explain situations/problems, (5) Have the nature of appreciating the usefulness of mathematics in life, namely having curiosity, attention and interest in mathematics lessons as well as a tenacious and confident attitude in solution to problem. The main aim of learning mathematics at the primary and secondary education levels is to emphasize skills in applying mathematics, both in everyday life and in helping to learn other sciences. (Depdiknas, 2013).

Mathematics learning for students is the formation of a mindset in understanding an understanding and in reasoning about the relationship between those understandings. In learning mathematics, students are accustomed to gaining an understanding through experience about the properties that a group of objects have and do not have. Students are given experience using mathematics as a tool to understand or convey information, for example through equations or tables in mathematical models which are simplifications of story problems or other mathematical description questions. Learning mathematics will be meaningful if students can connect mathematical ideas, make connections between mathematical topics, connect mathematics with other scientific disciplines and connect mathematics with everyday life (Sugiarti, 2014).

Students who study mathematics have the ability to think critically, logically, systematically and creatively and are able to face various life challenges independently with full confidence. Obtaining this ability to think can be done through studying mathematics which substantially includes the development of thinking based on the rules of logical, critical, systematic and accurate reasoning. This thinking ability is generally known as mathematical thinking ability (Pramesti, 2014).

Thinking is one of the mental activities that cannot be separated from human life. Thinking occurs in every human mental activity that functions to formulate or solve problems, make decisions and find reasons. This is in line with Ruggeiro's opinion, which defines thinking as a mental activity to help formulate or solve problems, make decisions, or fulfill curiosity (Badawi, 2015).

Thinking activities are carried out by someone when formulating a problem, solving a problem, drawing a conclusion or making a decision, and wanting to understand something. This is the case with Peter Reason's opinion which states that thinking is a person's mental process that is more than just remembering and understanding. According to him, remembering and understanding are more passive than thinking activities. Thinking causes a person to move beyond the information he hears. For example, a person's ability to think to find a new solution to a problem faced (Firdaus, 2010).

One of the abilities that students at primary and secondary education levels must have based on mathematics learning objectives is critical thinking. Critical thinking is very important for students to have, because having critical thinking skills can help students think rationally in overcoming the problems they are facing and finding alternative solutions to these problems (Karim, 2015).

Zamroni and Mahfudz (20Z09) stated the reasons why it is important to train critical thinking skills in students, namely: 1) the rapid development of science and technology will cause the information received by students to become increasingly diverse. Therefore, students are required to have the ability to select and sort good and correct information so that they can enrich their insight, 2) students are one of the forces with high pressure, therefore this strength can be directed in the proper direction (in addition to high commitment to moral), then they need to be equipped with adequate thinking skills (deductive, inductive, reflective, critical and creative) so that in the future they will be able to take part in developing the field of science they are studying, 3) students are citizens of society who now and in the future will live increasingly complex. This requires them to have critical thinking skills and the ability to solve problems faced critically, 4) critical thinking is the key to the development of creativity, where creativity emerges when observing phenomena or problems which will then require us to think creatively, 5) many There are many job opportunities, both direct and indirect, that require critical thinking skills, 6) every time humans are always faced with making decisions, with skills in critical thinking humans can make the right decisions.

Mathematical material and critical thinking skills are two things that cannot be separated, because mathematical material is understood through critical thinking, and critical thinking is trained through studying mathematics (Lambertus in Badawi, 2015). According to Wijaya (2010), critical thinking is the activity of analyzing ideas or thoughts in a more specific direction, distinguishing them sharply, selecting, identifying, studying and developing them in a more perfect direction.

Learning to think critically means using mental processes, such as noticing, categorizing, selecting, and assessing/deciding. Critical thinking also allows students to find the truth amidst the many events and information that surround them every day. This means that by thinking critically, students can distinguish between information they need and not so that they are able to find the truth. Egok (2016) explains that critical thinking is an organized process that allows students to evaluate the evidence, assumptions, logic, and language underlying other people's statements or their own opinions.

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Critical thinking is a process of using thinking skills effectively to help someone make something, evaluate, and apply decisions according to what they believe or do. Some thinking skills related to critical thinking are comparing, contrasting, estimating, drawing conclusions, influencing, generalizing, specializing, classifying, grouping, sorting, predicting, validating, proving, connecting, analyzing, evaluating and creating patterns (Siswono, 2016) .

Critical thinking is a cognitive activity related to the use of reason. Facione states that critical thinking is thinking that has a goal, namely proving something, interpreting what something means, solving problems, but the core of critical thinking is part of cognitive skills which include

interpretation, analysis, evaluation, inference, explanation, and self-regulation (Anggiasari et al., 2018)

Mathematical critical thinking skills are defined as a series of non-procedural thinking skills, namely the ability to determine analogies, analyze, evaluate, solve non-routine problems and prove. Critical thinking in mathematics will make students able to organize and combine mathematical thinking through communication, communicate their mathematical thinking coherently and clearly to other students, teachers and other people, analyze and evaluate mathematical thinking and strategies, use mathematical language to express mathematical ideas correctly (Kuniarsih, 2012).

Bayer explains that there are 6 characteristics of critical thinking skills, namely: (1) Character, someone who has critical thinking skills has a skeptical attitude, is very open, appreciates honesty, respects various data and opinions, respects clarity and thoroughness, seeks views. others who are different, and will change their attitude when there is an opinion that they consider good. (2) Criteria, in critical thinking you must have a criterion or benchmark. To get there you have to find something to decide or believe in. Even though an argument can be prepared from several learning sources, it will have different criteria. If we are going to implement standardization, it must be based on relevance, accuracy of facts, based on credible sources, thorough, unbiased, free from erroneous logic, consistent logic, and careful consideration. (3) Argument, namely a statement or proposition based on data. Critical thinking skills will include activities of recognition, assessment, and constructing arguments. (4) Consideration or thinking, namely the ability to summarize conclusions from one or several premises. The process will include activities to test the relationship between several statements or data. (5) Point of view, namely the way of viewing or interpreting the world, which will determine the construction of meaning. Someone who thinks critically will look at a phenomenon and various different points of view. (6) Procedures for applying criteria, procedures for applying critical thinking are very complex and procedural. This procedure will include formulating the problem, determining the decisions to be taken and identifying estimates (Prameswari, et al. 2018).

Indicators of critical thinking abilities according to Facione include interpretation, analysis, evaluation, inference. Interpretation is the ability to understand and express the meaning/significance of a problem. Analysis is the ability to identify and conclude relationships between statements, questions, concepts, descriptions, or other forms. Evaluation is the ability to access the credibility of statements/representations as well as being able to logically access the relationships between statements, descriptions, questions and concepts. Inference is the ability to identify and obtain the elements needed to draw conclusions (Anggiasari, et al. 2018).

This research uses four indicators of critical thinking skills developed by Karim (2015: 95) with reference to Facione as an indicator of critical thinking skills, namely: 1) Interpretation, namely understanding the problem indicated by writing what is known or what is asked in the question correctly; 2) Analysis, namely identifying relationships between statements, questions and concepts given in the problem which is demonstrated by creating appropriate mathematical models and providing appropriate explanations; 3) Evaluation, namely using the right strategy in solving problems, complete and correct in carrying out calculations; and 4) Inference, namely making appropriate conclusions.

SMP Negeri 4 Kendari is one of the schools located in Kendari city. Based on information from the class VIII mathematics teacher at SMP Negeri 4 Kendari, that student involvement in learning was not optimal, students did not dare to ask questions when given the opportunity by the teacher. In fact, one of the abilities seen in students who have critical thinking skills is students who can ask questions and are active in learning. Students' ability to think critically is also seen in terms

of the results of filling in their worksheets. Students who are less able to think critically, the results of their work show that there are several indicators that are considered not fulfilled, such as not understanding the problem in the problem, not being precise in making mathematical models, making errors in calculations, and not concluding on solving the problem. Seeing the problems that arise, especially related to critical mathematical thinking skills, it is necessary to analyze students' critical mathematical thinking skills first so that the solutions provided are appropriate, effective and efficient.

Developing critical mathematical thinking skills, each teacher is faced with students who have characteristics that vary from one individual to another. One dimension of student characteristics that specifically needs to be considered is cognitive style. Cognitive style is one of the learning condition variables that teachers need to consider in designing learning, especially in choosing learning strategies that suit students' cognitive styles. Cognitive style is a form of cognitive activity. Cognitive styles differentiate individuals in interpreting, thinking, solving problems, learning, ability to realize, make decisions, and so on (Wulan & Rusmala, 2019).

Students' critical thinking abilities are closely related to cognitive aspects, namely how to complete a task, explain existing information in solving problems, design procedures, and be able to provide appropriate solutions in solving problems (Desmita, 2012: 135). Thus, cognitive style will influence the level of students' critical thinking abilities because each student has a different way of thinking, compiling and processing information. Wolfolk stated that in cognitive styles there are different ways of seeing, recognizing, and organizing information. Each individual will choose their preferred way of processing and organizing information in response to environmental stimuli. There are individuals who respond quickly and there are also those who respond slowly (Bowo, 2017).

This way of responding is also related to attitudes and personal qualities. A person's cognitive style can pay attention to individual variations in terms of attention, receiving information, remembering and thinking that arise or differ between personality cognitions. Cognitive style is referred to as a style, not an ability because it refers to the way a person processes information and solves problems, not referring to the best solution process.

Cognitive style indicates variation between individuals in their approach to a task, but this variation cannot indicate a particular level of intelligence or ability. As behavioral characteristics, the characteristics of individuals who have the same cognitive style do not necessarily have the same abilities. Each cognitive style has adaptive value in special circumstances. It cannot be said that someone who has a higher score on cognitive style is better in every situation than someone who has a lower score on a cognitive style questionnaire.

Research conducted by Khairat (2019) shows that there is a significant relationship between cognitive style and students' mathematical critical thinking, so that cognitive style has a big influence on the development of students' critical thinking abilities. This research focuses on cognitive styles which are differentiated based on psychological differences, namely field dependent cognitive style and field independent cognitive style. Witkin's research (Wulan, 2019) shows that the cognitive style approach of field independent and field dependent dimensions is useful when applied to problems related to education. Field independent and field dependent dimensions have an impact on the world of education regarding how students learn, how teachers teach, how students and teachers interact, and how students make decisions.

Field dependent and field independent cognitive styles are types of cognitive styles that reflect a person's analytical way of interacting with their environment. Crowl et al define field independent cognitive style as the cognitive style of a person with a high level of independence in observing a stimulus without dependence on external factors and is less able to cooperate. If individuals who have this cognitive style are faced with complex and analytical tasks, they tend to

do it well, and if successful, their enthusiasm for carrying out more difficult tasks is even better and they prefer to work independently. Field dependent cognitive style is a person's cognitive style that tends and relies heavily on external sources of information and collaborates better with other people. This cognitive style has the characteristic of being better at recalling social information such as conversations and the overall picture of the given context. The basic characteristics of these two cognitive styles are very suitable for application in research involving critical thinking processes in mathematical problems (Rifqiana, 2015).

Field dependent and field independent individual characters have their own characteristics. The characteristics of individuals with field dependent and field independent cognitive styles have advantages and disadvantages according to their field. These two cognitive styles are very important in the learning process. Identifying students' cognitive styles will help teachers to make decisions about learning approaches.

The differences between the two cognitive styles will produce different critical thinking abilities, especially in mathematics learning. Agoestanto (Khairat, 2019) states that the relationship between cognitive style and mathematical critical thinking skills also shows that students with a field independent cognitive style are better than students with a field dependent cognitive style in drawing conclusions, guessing, making deductions, and evaluating arguments. Rifqiana's research (2015: 206) also shows that the critical thinking abilities of subjects from the strong group are better than subjects from the weak group for each field dependent and field independent cognitive style.

METHOD

This research is descriptive research with a qualitative approach. To obtain an in-depth description of data regarding students' mathematical critical thinking abilities in terms of cognitive style, students were given instruments in the form of a cognitive style test, and a mathematical critical thinking ability test followed by in-depth interviews. Test result data and interview data are combined then presented, analyzed, verified and concluded.

The subjects of this research were four students in class VIII4 of SMP Negeri 4 Kendari. The selection of research subjects was determined based on the cognitive style test (GEFT Test = Group Embedded Figures Test) which was developed by Witkin in 1971. The criteria for determining cognitive style are that if the GEFT score is in the range 0-11 then the student has a field dependent cognitive style. Meanwhile, if the GEFT score is in the range 12-18 then the student has a field independent cognitive style. This is in accordance with Witkin's research that subjects who were able to place 12 or more simple pictures were described as field independent cognitive style. Subjects who were unable to place more than 11 pictures were described as having a field dependent cognitive style. Individual scores above the national average GEFT score of 11.4 are classified as field independent cognitive style (Rifqiana, 2015).

The auxiliary instruments in this research consisted of the GEFT test, mathematical critical thinking ability test and interviews. The GEFT test (Group Embedded Figures Test) is a form of test used to determine students' cognitive styles which was developed by Witkin in 1971. The GEFT is the standard test in America so changes to the GEFT are not made as far as possible. The GEFT test consists of three parts, part I consists of 7 questions, part II and part III each consist of 9 questions. Part I has a processing time of 3 minutes, while part II and Part III each have a processing time of 6 minutes (Moertiningsih et al, 2012). Part I is an introduction or practice to become familiar with the test, while the scores are calculated from part II and part III. The way to complete the test is by finding simple shapes that are hidden in a more complex drawing pattern that is given and then bolding it using a pencil. Students who complete a section in less time are not permitted to proceed to the next section as all students start working simultaneously on each

section. Scores on tests for parts II and III, for each correct answer, 1 is given and for wrong answers 0. Then the scores for parts II and III are added up. If the final score is in the range 0-11 then the student has a field-dependent cognitive style. Meanwhile, if the final score is in the range 12-18 then the student has a field-independent cognitive style.

The mathematical critical thinking ability test in the form of a description test aims to determine the extent of students' mathematical critical thinking abilities. In this research, the material used to test mathematical critical thinking skills is flat-sided spatial shapes, namely prisms. The number of questions is 2 items with a time allocation of 40 minutes.

Interviews are used to dig up as much information as possible about the what, why, and how related to a given problem. This interview contains questions that aim to find out more about students' mathematical critical thinking abilities. The interview method used is an unstructured interview with the following provisions: (a) the interview questions asked are adapted to the conditions of problem solving carried out by students (writing and explanation), (b) the questions asked do not have to be the same as those written in the interview guide, but contain the core of the problem is the same, (c) interviews can be conducted in more depth depending on the situation and condition of the respondent. This means that if students experience difficulties with certain questions, they will be encouraged to reflect or given simpler questions without eliminating the essence of the problem (Adibah, 2015).

Data collection techniques in this research were carried out by giving tests and interviews. There are two types of tests, namely the Group Embedded Figures Test (GEFT) and the mathematical critical thinking ability test. The GEFT test is used to determine students' cognitive styles based on psychological differences, namely field dependent cognitive styles and field independent cognitive styles. The timing for the GEFT test follows the directions of the class VIII mathematics teacher at SMP Negeri 4 Kendari, namely after finishing class hours at school. The GEFT test results were then analyzed so that 4 research subjects were selected to be given a mathematical critical thinking ability test. Furthermore, giving a critical mathematical thinking ability test is used to measure students' critical mathematical thinking ability in solving problems on prism material. The timing of the mathematical critical thinking ability test was chosen in accordance with the agreement between the researchers and the research subjects with the aim of not disrupting study hours at school.

The technique for checking the validity of this research data was carried out using triangulation. Triangulation is a technique for checking the validity of data that uses something other than the data for checking purposes or as a comparison of data. In this research, researchers used triangulation techniques. Technical triangulation is triangulation by comparing data collected using different techniques, namely test techniques in the form of critical mathematical thinking ability tests and non-test techniques in the form of interviews on the same subject, namely research subjects that have been determined by the researcher. The results of the mathematical critical thinking ability test and the interview data were then analyzed. The data analysis technique is to use qualitative data analysis techniques, namely data reduction, data presentation, and drawing conclusions.

RESULTS AND DISCUSSION

Determining the cognitive style of class VIII4 students at SMP Negeri 3 Raha based on the results of the analysis of filling out the GEFT instrument obtained data from 24 students including 15 and 9 field dependent and field independent students respectively. From the GEFT results, field dependent cognitive style students were divided into two groups, namely the weak group of 8 students and the strong group of 7 students. Then from the weak group, the middle value

of the group is selected as the Weak Field Dependent (FDL). Meanwhile, from the strong group, the middle value of the group was chosen as Strong Field Dependent (FDK). Field independent cognitive style students were also divided into two groups, namely a weak group of 5 respondents and a strong group of 4 respondents. Then from the weak group, the middle value of the group is selected as Field Independent Weak (FIL). Meanwhile, from the strong group, the middle value of the group was chosen as Field Independent Strong (FIK). So 4 students were selected, namely FDL, FDK, FIL, and FIK subjects as research subjects.

After getting the selected subjects, the four subjects were then given a mathematical critical thinking ability test and interviews were conducted. Then, critical thinking ability data analysis, interview data and data triangulation results for each subject were analyzed.

Mathematical Critical Thinking Ability The subject of Weak Field Independent and Strong Field Independent Cognitive Style can be described as follows.

FI is weak
Indicator
Interpretation: Able to formulate problems and facts
Analysis: Able to determine mathematical models
Evacuation: Able to determine the right strategy
Inference: Unable to determine an appropriate conclusion
FI Strong
Indicator
Interpretation: Able to formulate problems and facts
Analysis: Able to determine mathematical models
Evacuation: Able to determine the right strategy
Inference: Able to determine appropriate conclusions

Mathematical Critical Thinking Ability Subject Cognitive Style Weak Field Dependent and Strong Field Dependent can be described as follows.

FD is weak
Indicator
Interpretation: Able to formulate problems and facts
Analysis: Able to determine mathematical models
Evacuation: Able to determine the right strategy
Inference: Unable to determine an appropriate conclusion
FD Strong
Indicator
Interpretation: Able to formulate problems and facts
Analysis: Able to determine mathematical models
Evacuation: Lack of ability to determine the right strategy
Inference: Unable to determine an appropriate conclusion

From the results of the mathematical critical thinking ability test and subject interviews, indicators of the mathematical critical thinking ability achieved by the subject were then determined. The following is an analysis of mathematical critical thinking skills in Weak Field Independent (FIL) subjects and Strong Field Independent (FIK) subjects.

The results of this research indicate that the mathematical critical thinking abilities of FDL and FDK subjects have several similarities and differences. The similarity lies in the interpretive indicators. In this indicator, FDL subjects and FDK subjects were able to interpret the questions. FDL and FDK subjects write down all known information and write down the problem that must be solved appropriately. In terms of analysis indicators, FDL subjects and FDK subjects have

differences. The FDL subject wrote the mathematical model of the problem but it was wrong and incomplete. Meanwhile, FDK subjects are able to connect the known information with the strategy that will be used to solve the problem by determining the mathematical model correctly and completely from all the questions given. This is in accordance with research by Khoiriyah et al. (2013: 243) which shows that categories of subjects with the same cognitive style do not always have the same level of thinking.

In terms of evaluation indicators, based on the results of tests and interviews, the two FD subjects were less able to carry out evaluations. FDL and FDK subjects were less able to determine the right strategy to solve the questions. Even though the subject knows the formula, the subject is less able to apply how to use it. Both subjects did not understand the concept, the subjects also did not understand the steps that had to be taken to solve the problem. This is in accordance with one of the characteristics of field dependent individuals, namely when proving something they tend to use less reasoning skills. In the inference indicator, the subject cannot conclude the problem because this indicator is influenced by the previous indicator, namely the evaluation indicator. If one of the indicators is not met, then it is certain that the subject will not be able to solve the problem appropriately and correctly so that the two FD subjects will not be able to determine the right conclusion.

Field Independent subjects have similarities and differences. In the interpretation indicator, FIL and FIK subjects were able to interpret the questions. Both FI subjects wrote down all the information they knew and were able to describe the problem conditions correctly and write down the problems that had to be solved correctly. This is in line with previous studies conducted by Ngilawajan (2013: 77) which explains that field independent and field dependent subjects receive information by reading the questions carefully and thoroughly, then the subject processes the information shown from the subject's answers, namely stating what is known and what is asked from the question. In the subject analysis indicator, FIL is able to link known information with the strategy that will be used to solve the problem by writing the mathematical model of the problem correctly and completely. Likewise, FIK subjects are able to determine mathematical models correctly and completely. Based on the method proposed by the FI subject in making a resolution plan, by making the information contained in the problem into an image and the subject's accuracy in determining the formula that will be used to solve the problem shows that the FI subject is able to fulfill the analysis indicators. This is in accordance with one of the characteristics of field independent individuals, namely being able to reorganize a context of initial/previous knowledge

On the second evaluation indicator, FI subjects were able to carry out evaluations. FIL and FIK subjects are able to determine strategies and can apply the knowledge and concepts they have to solve problems appropriately. FI subjects can understand the steps that must be taken to solve problems and complete and correctly carry out calculations. This is in line with the opinion of Ngilawajan (2013: 80) which states that FI subjects are able to process information which is demonstrated by linking the information received from the questions with the knowledge they have. Agung and Risky (2014: 210) also explain that FI students are able to use all their abilities in solving a problem when given freedom. The difference between FIL and FIK lies in the inference indicators. FIL subjects do not determine conclusions even though they are able to complete interpretation, analysis and evaluation. On the other hand, FIK subjects are able to determine conclusions correctly.

Regarding students' mathematical critical thinking abilities, the description above shows that Field Independent subjects have better performance compared to Field Dependent subjects. Mathematical critical thinking abilities between FDL subjects and FDK subjects are not the same, nor are mathematical critical thinking abilities between FIL subjects and FIK subjects different. The

mathematical critical thinking ability of subjects from the strong group is better than that of subjects from the weak group. This is in line with research by Rifqiana (2015: 206) showing that the critical thinking ability of subjects from the strong group is better than subjects from the weak group for each cognitive style field. dependent and field independent.

CONCLUSION

Students with a Weak Field Independent cognitive style are able to fulfill the interpretation indicators, are able to fulfill the analysis indicators, are able to fulfill the evaluation indicators, and are unable to fulfill the inference indicators.

Students with a Strong Field Independent cognitive style are able to fulfill interpretation indicators, are able to fulfill analysis indicators, are able to fulfill evaluation indicators, and are able to fulfill inference indicators.

Field Dependent cognitive style students are weakly able to fulfill interpretation indicators, less able to fulfill analysis indicators, less able to fulfill evaluation indicators, unable to fulfill inference indicators.

Students with a Strong Field Dependent cognitive style are able to fulfill interpretation indicators, are able to fulfill analysis indicators, are less able to fulfill evaluation indicators, and are unable to fulfill inference indicators. Students with a Field Independent cognitive style have better mathematical critical thinking skills than students with a Field Dependent cognitive style.

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