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Research Article

Level Analysis and Supporting Factors of Thinking Ability Analytical in Solving Problem Based Problems Reviewed from the Learning Styles of Students

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ABSTRACT

The analytical ability is one of the important abilities that must be mastered by students, being able to help students to analyze a problem logically, especially in looking for the relationship of concepts and situations that will be faced more easily, it so important to form patterns of logical structure in knowledge. This study investigated to determine the level of analytical thinking skills of students in solving problem-based problems in terms of learning styles and supporting factors in improving analytical thinking skills. The research method used is a mix-method that is a combination of methods (qualitative and quantitative) with a naturalistic design. This research was conducted at Ponorogo 1 Public Middle School with a sampling technique through purposive sampling. Data were collected through semi-structured interviews, observations and documentation which were then analyzed using quantitative descriptive and qualitative descriptive. The results showed that: 1) The level of analytical thinking ability in terms of the learning styles of students, namely (a) visual style students are at the level of ability to conclude the main ideas that are more dominant, (b) on audiovisual students that are at the ability to identify and knowing various errors, (c) in kinesthetic learning style students are at the level of ability to identify a problem and at this stage a good understanding is needed. (2) Factors supporting students' analytical thinking skills and learning styles, Through these results it is expected to provide theoretical and practical insights for educators in determining the approaches and strategies for achieving analytical science competencies according to the learning styles of students in schools.

INTRODUCTION

The analytical ability is one of the important abilities that must be mastered by students, being able to help students to analyze a problem logically, especially in looking for the relationship of concepts and situations that will be faced more easily, it so important to form patterns of logical structure in knowledge. Concepts and ideas in natural science that cover the environment are obtained from a series of individual experiences carried out by

constructing phenomena in them (Siswono, Wartono, & Supriyono, 2017), which in their learning are often faced with a problem that requires good analytical skills. The ability to think analytically is one of the important abilities that must be mastered by students, being able to help students to analyze a problem logically, especially in looking for the relationship of concepts and situations that will be faced more easily (Rosidatul Ilma, 2017). Besides the ability of analytical and logical thinking plays an important role to form patterns of logical structures in knowledge (Usodo, 2011).

The ability of analytical thinking can also train students to process meaningful learning, not only understanding relevant knowledge but can apply what has been learned to solve the problems they face. (Rodliyah, 2015). The Problem Based Learning (PBL) model is a student-centered learning model that uses authentic problems as a foundation for inquiry in enhancing its own knowledge, developing higher skills and increasing self-confidence (Al-Fikry, Yusrizal, & Syukri, 2018). The success to achieve the learning objectives of science is influenced by the level or level of achievement of students' level of thinking. Based on the results of preliminary studies of students' analytical thinking skills, the average value of 5.30 falls into the low category. The score is obtained from the average results of analytical thinking ability indicators that include 6 indicators, namely: Ability to understand the concept (3.80), ability to identify (3.50), ability to distinguish (5.6), ability to organize (4, 6), ability to connect (5,25) and applicative ability (3,75). Of the 27 students of grade IX in Ponorogo, there were only 3 students in the category of high analytical thinking ability with a score of 80 and 75. From all of these data it showed that the average analytical thinking ability of students was still low. But there are some students who get very good results.

Supported by the results of interviews conducted by one of the teachers of natural science subjects, he stated that students' analytical thinking skills are generally influenced by the enthusiasm of students in learning, family encouragement factors and learning provided by educators in addition to that learning styles also affect how students solve problem-based problems given, for an educator a solution to improve analytical thinking skills can be done using good methods, interesting learning models with the use of media that also varies. In addition to the TGT and NHT methods there are still many other learning models that can be used to hone students' analytical thinking skills, such as the PBL (Problem basic learning) model. This model trains students to solve problems with the knowledge they have (Handayani, Agoestanto, & Masrukan, 2013). The process will make the construction of new knowledge that is more meaningful for students because students are able to use or apply material that has been learned in daily life (Gunantara, Suarjana, & Riastini, 2014). Problem Based Learning (PBL) models make students active in the learning process because at the beginning of learning students will be confronted with real world problems and solve problems through scientific work (Yoesoef, 2015).

Each student has different analytical skills from each other, it depends on how the readiness of students in receiving subject matter, processing and absorbing subject matter. learner habits in receiving, absorbing and managing information received or often referred to as learning styles. Learning styles include a combination of cognitive, affective and physiological characteristics that serve as relatively stable indicators of how students interact with, and respond to the learning environment (Ahmad & Nuryatin, 2019). According to (Irham & Wiyani, 2013) differences in learning styles in students is something that is able to describe the differences of students in the process of receiving lessons even in the same room and the same teacher. Teachers who know the differences, difficulties and obstacles that students face will be able to choose and adjust the right learning, certainly accompanied by adjusting the teacher's teaching style with the learning style of his students as well. Characteristics and types of learning styles are students visual learning through what is seen, auditory students learn through what is heard, and kinesthetic students learn through

movement and touch. Although every student has a learning style (V-A-K), most students tend to have one of the learning styles (V-A-K). This study Investigated to determine the level of analytical thinking skills of students in solving problem-based problems in terms of learning styles and supporting factors in improving analytical thinking skills.

METHODS

This research is a mixed method research that is combination of data collection (qualitative and quantitative) with naturalistic design. The study was conducted at Middle School 1 Ponorogo, with a total of 15 samples first and then 9 samples were taken. The study population was grade eight students taken through purposive sampling techniques. The sample selection uses the calculation of questionnaire results with consideration of the grouping of questionnaire results based on the learning styles of each student namely 3 visual subjects, 3 audivisual subjects and 3 kinesthetic subjects.

Data collected through interview tests, observations and documentation, in conducting interviews researchers used interviews "in depth interviews" or in-depth interviews with the subject (students) conducted directly. Then conduct free interviews as supporting data (Middle) conducted with trusted respondents, namely teachers who teach natural science subjects at school. The data obtained were then analyzed using quantitative descriptive and qualitative descriptive.

Interview tests use a description test and a pictorial test on the material of class VIII pressure in making questions adjusted to the indicators contained in analytical thinking skills. Analytical thinking indicators used as a reference are indicators of analytical thinking according to (Cabanilla, 2006). The indicators of analytical thinking are, (1) identifying a problem, (2) finding and knowing patterns of relationships carefully, (3) identifying and evaluating various errors, (4) summarizing the main idea, which in each indicator also contains the ability of the science process .

Table 1. The Indicators of Analytical Thinking

No	Indicator	Information
1	Identify a problem	- Observing the formulation of the problem and find out the keywords of the problem formulation in order to know the focus of the question request
		- Arrange data sequentially and clearly through tables, graphs, or other forms.
		- Finding out data or information that is valid and invalid
2	Finding and Knowing Relationship patterns carefully	- Determine the pattern of each concept / section.
		- Making relationships that are still a concept
		- Include in one general concept and expose the concept to the problem.
3	Identify and evaluate various errors	- Find out consciously the mistakes made during the procedure
		- Make corrections for these mistakes with a capable solution.
4	Summing up the main idea	- Expressing the concept similarities from the problem at hand
		- After knowing the equation of the problem / problem at hand it was formed into a general concept
		- And the final result is to draw the main concepts / ideas of the problems.

RESULTS AND DISCUSSION

The results of the research data regarding the analytical thinking ability of VAK learning styles of students (Visual, Audiovisual and Kinesthetic) in solving the problem-based problems of pressure material in class VIII at Middle School 1 Ponorogo, as follows:

1. **Level of Analytical Thinking Ability of Students Visual Learning Styles**

   The results of the subject's analytical thinking process in solving problems in the form of Bible questions based on the steps of analytical thinking can be seen in Table 2. Table 1 SA2 Visual Students Analytical Thinking Process Score

Table 2. SA2 Visual Students Analytical Thinking Process Score

Subject Name	Stages of Analytical Thinking in Solving Problem Based Problems				Average
	M1	M2	M3	M4	
SV1	✓ 80	✓ 80.75	✓ 81.75	✓ 82.66	81
SV2	✓ 80.5	✓ 80.5	✓ 81.5	✓ 81	80.87
SV3	✓ 80.75	✓ 81.66	✓ 81	✓ 81	81
Average	80.41	80.5	80.25	81.5	80.75

Description: M1 = Identifying, M2 = Finding patterns, M3 = Finding solutions to problems, M4 = Summing Up

Based on a scoring table of 1.4 it is known that the average problem-solving ability of problem-based problems of all visual subjects is 80.75 or classified as medium level analytical abilities. Following is an explanation of the level of problem solving based on visual learners on each indicator of analytical thinking ability.

a. Identify a problem

In the indicator of identifying a problem the visual subject has an average of 80.41 can be categorized into the level of completion of the second (intermediate). For identifying indicators, it is known that SA3 subjects have better identification skills than SV1 and SV2 subjects, SA3 subjects are slightly better at explaining the relationship between problems and other related concepts, only the explanations given by the subject have not yet raised the reasons for the problem, and also SA3 subjects have not been able to describe their linkages in detail. For subjects SV1 and SV2 have scores that are not much different, subjects SV1 and SV2 have good identification skills, in addition to having the ability to mention and write what is known and asked using the subject's own language, both subjects also have a good ability to choose the general concepts (Law, theory) the right pressure, and are able to find the relationship of the concepts that the subject chooses with the problem. Sarkim (1998) the nature of natural science education can be categorized into 3 dimensions, namely the dimensions of attitude, process and product, which in the product dimension includes concepts. Laws, and theories which are the result of human inventions to understand phenomena and find out their linkages.

b. Finding and Knowing Relationship Patterns

The indicator found that the The indicator found that the relationship pattern of visual subjects had an average value of 80.5 and was classified as intermediate level. It is known that in making the relationship pattern of the problems received by the three visual subjects using the concept of pressure in general or concepts that are commonly used in the material pressure. Subject SV1 provides answers using a general concept (ρ = ρair.h.g) that is associated with the problem, and discovers the concept's relationship through the correct answer and in accordance with the picture. Subject SV1 has correctly verified the problem that the subject found in a mathematical form or model,

as well as subject SV2 and SV3 use the general concept of pressure and provide answers that have often arisen and are known by many people. In the curriculum (1994) it is explained that Science (Science) as a result of human activities in the form of ideas, knowledge, and concepts that are organized with natural phenomena around, so it is necessary to continue to be investigated.

c. Identifying and Evaluating Errors

In the indicator of identifying and evaluating various errors, the overall visual subject has an average value of 80.25 and belongs to the middle level category. Subject SV1 is classified into a high level, because it has the ability to identify and evaluate very well, subject SV1 restates the problem briefly, but is easy to understand, makes good planning in solving problems and does not face difficulties in solving all the problems given. According to Wheeler in Cholidia (2001: 78) One strategy to solve problems is to use a reasoning. This shows that students can use inductive reasoning to solve problems.

For subjects SV2 and SV3 classified into the middle category, both subjects have made good planning in solving the problems given, but have not explained the strategies and solutions of the problems faced in detail and clearly. Sadiq (2004) states that a question (problem) will become a problem only if the question shows a challenge that ultimately is not able to be solved by using routine procedures that are normally done by students.

d. Summing Up the Main Idea

In the indicators concluded the main idea is known that the average overall score of visual subjects is 81.5 and belongs to the middle level category. It is known that subject SV1 has the ability to deduce better main ideas, subject SV1 believes the answer is correct and can prove the results of the solution in full, correctly state the conclusions from the results of the settlement, and use the concept of pressure correctly when making conclusions from a problem. For subjects SV2 and SV3 also have the ability to conclude the main idea with an intermediate level, in providing proof of the results of the problem solving is good, but has not explained the concept that the subject chose in detail. In constructing knowledge, it will certainly vary from the process to the conclusions obtained, this is inseparable from the importance of their learning styles and thinking styles in the learning process (Watsan & Thomson, 2001; Pintrich, 2002).

2. **Level of Analytical Thinking Ability of Students Audiovisual Learning Styles**

The results of the subject's critical thinking process in solving problems in the form of Bible questions based on the steps of analytical thinking can be seen in Table 3 as follow.

Table 3. Results of Audiovisual Students' Analytical Thinking Process Scores

Subject Name	Stages of Analytical Thinking in Solving Problem Based Problems				Score-flat
	M1	**M2**	**M3**	**M4**	
SA1	✓	✓	✓	✓	81
	80.75	81.25	81.5	80.5	
SA2	✓	✓	✓	✓	80.75
	80	80.5	81	81.5	
SA3	✓	✓	✓	✓	81
	80	80.5	82	81.5	
Average	80.25	80.75	81.5	81.16	81

Description: M1 = Identifying, M2 = Finding patterns, M3 = Finding solutions to problems, M4 = Summing Up.

Based on the scoring table 2 it can be seen that the average problem-solving ability of problem-based problems of all audiovisual subjects is 81 or classified as intermediate level analytical abilities. Following is an explanation of the level of problem solving based on audiovisual learners on each indicator of analytical thinking ability,

a. Identify a problem

The indicators identifying an audiovisual subject matter have an average of 80.75, so that they can be categorized into the level of completion of the second (intermediate) behavior. For identifying indicators, it is known that SA1 subjects have better identification skills than SA2 and SA3 subjects, SA1 subjects are better at explaining the relationship between problems with other related concepts, as well as the explanations given are clear and easy to understand, but the subject does not provide a linkage to the concept with the concept of pressure. For SA2 and SA3 subjects, scoring was not much different, SV1 and SA2 subjects had good identification skills, besides having the ability to mention and write what was known and asked using the subject's own language, both subjects also have a good ability to choose the general concepts (Law, theory) the right pressure, and are able to find the relationship of the concepts that the subject chooses with the problem. Carin & Sund (1989: 4) in Halim proposed three criteria in true Science research, namely (1) being able to explain observed phenomena. (2) able to predict the solution of the observed phenomenon (Halim Simatumpang, 2010).

b. Finding and Knowing Relationship Patterns

In the indicators found the relationship pattern of audiovisual subjects has an average value of 80.75 and classified at the middle level. It is known that in making relationship patterns of problems and information received by the three visual subjects using the concept of pressure in general or concepts that are commonly used in the material pressure. Subject SA1 provides answers using the general concept of hydrostatic pressure namely, $(\rho = \rho air.h.g)$ which is associated with the problem, and discovers the conceptual relationship through the correct answer and in accordance with the picture. The SA1 subject correctly verifies the problem that the subject finds in mathematical form or model, as well as the SA2 and SA3 subjects have applied the general concept of pressure to a problem. CanSA3as, et al (2009) Identify problem solving steps that are understanding the problem, managing data, and guessing or finding patterns of interrelation, guessing formulas, guessing validation and generalization.

c. Identifying and Evaluating Errors

On the indicator of identifying and evaluating various errors, overall audiovisual subjects have an average value of 81.5 and fall into the middle level category. It is known that SA3 subjects have better ability to identify and evaluate than SA1 and SA2 subjects, SA3 subjects have a good ability to restate the problem briefly, but are easy to understand, make good planning in solving problems and do not face difficulties in solving all problems which are given. According Suharnan (2005: 151), the problem is a gap between the present situation with the situation that will come or the desired goal. For the subjects SA1 and SA2 are good at making plans to solve the problems given, however, it has not yet explained the strategies and solutions of the problems faced in detail and clearly. (Widearti, 2018) in Helena, stated the importance of understanding learning styles which will include the ability to identify, evaluate and solve solutions to problems faced by students (Helene & Irmanda, 2019).

d. Summing Up the Main Idea

In the indicators concluded the main idea is known that the overall overall score of audiovisual subjects is 81.16 and classified into the middle level category. It is

known that SA2 and SA3 subjects have the ability to deduce better main ideas, GNP subjects, SA2 and SA3 subjects have the ability to deduce ideas that are almost the same in believing that the answers given are correct, able to prove the results of their completion quite completely, mentioning conclusions from the results solving it correctly, and choosing the concept of pressure correctly when drawing conclusions from an issue. For subjects SA1 soles have the ability to conclude the main ideas that are classified as good at the middle level, the subject provides proof of the results of the settlement well, choose the concept of pressure appropriately, but not yet explain the concept that the subject chose in more detail. To conclude means that someone has been able to express ideas or ideas, opinions, desires, in conveying information about another event in a concise manner with his own sentence or language without deviating from the idea (Masitah, 2012).

3. **Analytical Thinking Ability of Students Kinesthetic Learning Styles**

The results of the subject's critical thinking process in solving problems in the form of Bible questions based on the steps of analytical thinking can be seen in Table 3.

Table 4. Results of Analytical Thinking Processes for Kinstetic Students

Subject Name	Stages of Analytical Thinking in Solving Problem Based Problems				Average
	M1	M2	M3	M4	
SK1	✓ 83	✓ 83	✓ 82.5	✓ 82	82.6
SK2	✓ 82	✓ 81.5	✓ 81	✓ 81.5	81,375
SK3	✓ 82	✓ 82	✓ 82	✓ 82	82
Average	82.5	82	81.83	81.85	82

Description: M1 = Identifying, M2 = Finding patterns, M3 = Finding solutions to problems, M4 = Summing Up.

Based on the scoring table 3 it can be seen that the average problem-solving ability of problem-based problems of all kinesthetic subjects is 82 or classified as intermediate level analytical abilities. Following is an explanation of the level of problem solving based on kinesthetic students in each indicator of analytical thinking ability.

a. Identify a problem

On the indicator of identifying a problem the visual subject has an average of 82.5 can be categorized into the level of completion of the second (intermediate). For identifying indicators it is known that SK1 subjects have excellent identification skills and are classified as level 3 (High) identification, SK1 subjects have excellent abilities in writing and mentioning what is known what is asked correctly, using different concepts (but still related to), and able to explain in detail the relationship of concepts stated by the subject to the problem. Based on the results of the study the ability to identify problems is enhanced by learning situations where educators provide opportunities through direct activities such as discussions and direct practice, and will increasingly increase if educators provide good learning materials and models.

For SK2 and SK3 subjects also have a good ability to identify, both subjects are able to write down and mention what is known what is asked correctly, using different concepts (but still related to), it's just not explaining the relevance of the concept chosen more detail.Wulandari, et al (2014) which explains that in a learning process, a person's ability to understand and absorb different levels of learning, some are fast and some are slow. This is due to differences in the way students receive and understand the information provided. So it can be seen at the stage of identifying kinesthetic subjects slipped into level 2 (intermediate,) but kinesthetic subjects have good abilities in (1)

writing what is known and asked correctly, (2) choosing a different concept (outside the concept of pressure), (3) making a link between the concept and the given problem.

b. Finding and Knowing Relationship Patterns

The indicator found that the kinesthetic subject pattern has an average value of 82 and belongs to the middle level. It is known that in making the relationship pattern of the subject matter SK1 has the ability at level 3, the subject SK1 knows the focus of the problem given to the problem correctly, uses the correct equation and matches the problem, explains the concept relationship through detailed answers based on the analysis of the subject's image do, operate the problem into a mathematical form or model, separate the parts into concepts that are still related, and make patterns related to other concepts that are one unit. Relating Learning is learning in real life experience or prior knowledge. Experience is a learning strategy by learning through exploration, discovery and creation. Such experience in class can include manipulative use, problem solving and laboratory activities. Application is learning by putting concepts in use, by providing realistic and relevant exercises. Working together means learning in the context of sharing, responding and communicating with other learners.

For SK2 and SK3 subjects also have good identification skills, both subjects provide answers using general concepts ($\rho = \rho air.hg$) that are associated with the problem, and find the relationship of concepts through correct answers and in accordance with the picture, and do the correct proof of the focus of the problem is the subject found in mathematical form, it's just that the subject SK2 and SK3 have not brought up a different concept. Jatnika, et al (2006) Logical and coherent thinking abilities and reasoning concepts more broadly are closely related to analytical abilities.

c. Identifying and Evaluating Errors

On the indicator of identifying and evaluating various errors, the average overall kinesthetic subject was 81.83 and included in the middle level category. SK1 and SK2 subjects have almost the same ability to restate the problem briefly and easily to understand, make good planning in solving problems and do not face difficulties in solving all the problems given. In the learning process it is known that in addition to students entering information from the five senses, there is also a tendency for students to create and give meaning to information. "In general there are three trends, namely visuao, audiotori, and kinetsteik" Unimed FIP Lecturer Team (2011: 38).

SK3 subjects also have the ability to identify and evaluate well in making plans to solve the given problem, but have not explained the strategies and solutions of the problems faced in detail and clearly. Healy, Hoyles and Lampert in CaSA3as and Encarnacion (2006) stated that "Some studies show that primary and Middle students are able to formulate conjectures, examine and justify them if they start working from particular cases". This means that some of the results of the study state that students at the Middle School level can compile allegations and examine them if they begin the process of identifying the data provided, based on the experience of the students.

d. Summing Up the Main Idea

The indicators concluded the main idea is known that the overall score of kinesthetic subjects was 81.85 and classified into the middle level category. It is known that SK1 and SK3 subjects have the ability to deduce main ideas better than SK2 subjects. Subjects SV1 and SK3 are able to believe that the answers written are correct, able to prove the results of the settlement in full, be able to mention the conclusions from the results of the settlement correctly, and use the appropriate method of drawing conclusions. Suriasumantri, JS (1999: 42) states that reasoning is a process of thinking in drawing conclusions in the form of knowledge and has certain characteristics in finding truth.

For SK2 subjects also have the ability to conclude the main ideas that are good in providing evidence of the results of the settlement, and are able to choose the concept of pressure correctly when making conclusions from a problem, it's just not yet explain the concepts that the subjects choose in detail.

4. **Supporting factors**

Supporting factors are the factors that support students in honing analytical thinking skills in solving problem-based problems, here are the factors supporting students' analytical thinking abilities:

a. Media and Learning Models in the Teaching Process

Learning media has a very large role towards the learning goals that are alleviated by educators, by using appropriate learning media it will help educators in delivering learning material. According to Abu Bakar Muh SV1, the use of learning tools / media includes, (1) being able to overcome difficulties and being able to clarify material that is difficult to convey, (2) being able to facilitate students' understanding and learning to be more interesting, (3) stimulating children to continue to be very warm in learning, (4) helps the formation of students' character, trains to broaden their feelings, and speed in learning.

Learning model is a learning technique that is used by educators in teaching a certain subject (material) and in the selection of a learning model to achieve the desired learning goals, in this case teachers at Middle School 1 Ponorogo often use PBL (Problem based learing) models in learning by inviting students to get accustomed to solving problems that are often encountered in daily life to be solved and concerning the concept of the material being studied.

The following is an excerpt from a teacher interview at Middle School 1 Ponorogo:

"... We have applied PBL (Problem based learning) model a long time ago, besides PBL we have also implemented (Project based learning) which requires students to make a product, and we both models are very directed and support learning 21st century, so that until now the problem-based and projet model has become a model that is commonly used in every subject, but sometimes mixed with other models to make it more varied and interesting, it depends on the creativity of each teacher. " (Supporting Data Transcript).

In addition to using PBL (Problem based learing) models in science learning teachers also often use PBL (Projet based learing) models that make students accustomed to solving problems at a high level. Uode is recommended for educators to make use of media, methods and models that are appropriate and appropriate to support the material being taught. Science lessons require the ability to analyze, it is because in science lessons there are many types of questions that require analytical thinking. that students' thinking ability is still relatively low, to improve their thinking ability, students must be accustomed to solving problems that are analytical.

b. Independence of Students

Independence of students is an effort to regulate and direct themselves, motivate them to continue to learn and understand the subject matter, in another sense, independence is self-awareness to do positive things independently and not depend on others. This is according to the opinion of Mujiman quoted by Aini and Taman (2012: 51) "Learning independence can be interpreted as the nature and ability of students to carry out active learning activities, which are driven by the motive to master a competency that is owned". This is because with the independence of learning, a person can control his own actions, free to regulate independence and competence and skills that will be achieved.

In independence in this learning process students are required to have a high initiative in finding or finding information not only from teachers at school, but by searching from other sources, such as magazines, internet sources, and other sources. Learning independence is a learning activity carried out by students without relying on others both friends and teachers in achieving learning goals, namely mastering the material or knowledge well with students' own awareness and can apply their knowledge in solving problems in daily life.

c. Family environment

The family is the first and foremost educational institution for students. The family is among the most influential factors that encourage the formation of analytical abilities. From this family environment the child first receives education and teaching, especially from his father and mother. If the family often provides independent lessons to children, then the child will get used to meeting the same problems during the lesson.

The family has an effect on student achievement, but here the family only encourages students, training students' independence. Independence does not mean without the support of others, but independence is an attempt to carry out or carry out all the work by relying on one's own abilities with support and encouragement from others. And of course the support of his parents.

CONCLUSION

Based on the results of the analysis of research data, it can be concluded that, the level of analytical thinking ability in terms of the learning styles of students, namely (a) visual style students are at the level of ability to infer the main ideas that are more dominant, (b) on audiovisual students that are on the ability to identify and know various errors, (c) the kinesthetic learning style students are at the level of the ability to identify a problem and at this stage a good understanding is needed. Factors supporting the ability of analytical thinking and learning styles of students, namely (a) the media and learning models used, (b) the independence of students, (c) family environment.

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