



**ANALYSIS OF STUDENTS' CREATIVE THINKING ABILITY ON
ENVIRONMENTAL POLLUTION MATERIALS IN
CLASS VII SMP PANGERAN ANTASARI**

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Abstract

This study aims to: (1) describe students' creative thinking skills on Environmental Pollution material at Prince Antasari Middle School; (2) to find out the description of students' creative thinking skills on Environmental Pollution material at Prince Antasari State Junior High School; and (3) knowing the percentage of creative thinking ability on each indicator of creative thinking ability. The type of research conducted in this research is descriptive research using a mixed methods approach and non-experimental research design. The data collection stage uses a test instrument that contains description questions for creative thinking skills and uses a questionnaire for the student learning process. The sampling technique used is total sampling by taking samples of two classes. The subjects of this study were seventh grade students of Prince Antasari Middle School, totaling 73 students. The samples in this study were 38 students in class VII-1 and class VII-2, totaling 35 students. The results showed quite good with 31 students (42.5%), followed by good criteria with 30 students (41.1%). , then less well with 6 students (8.2%), and there are only 2 students (2.7%). The conclusion of this study shows that students' creative thinking abilities are in the category of creative enough with a learning process that has quite good criteria.

Keywords: Analysis, Creative Thinking, Environmental Pollution

Introduction

Education is an important means to improve the quality of human resources. In an effort to improve the education system, the government seeks to improve the quality of learning processes and outcomes at every level of education that requires creative thinking and behavior. This is done in order to obtain human resources that can support the development of national education. A nation needs creative and superior human resources to be used (Nurhayati & Rahardi, 2021).

In the 21st century, students must have the academic ability and skills to study and work. Creativity and innovation are among the skills of the 21st century. In learning that takes place mainly on science material, one that must be expanded is the ability to think creatively (Hendri, et al. 2019).

Creative thinking is important in education in Indonesia, the Indonesian government integrates creative thinking skills in the education curriculum. This has been formulated in Law no. 20 of 2003 article 3 concerning the National Education System which aims to develop the potential of students to become human beings who believe and are pious, have noble character, are healthy, knowledgeable, creative, independent, and become democratic and responsible citizens (Maasythoh & Nuriadin, 2021).

The ability to think creatively is closely related to the creative thinking process, and the creative thinking process is related to the process of creating (Abidin, et al. 2018). Creating is putting elements together to form a related whole or reprocessing elements into new patterns (Siswono, 2008).

Creative thinking is a procedure that includes elements of fluency, flexibility, originality, and elaboration. This shows that creative thinking can increase one's thinking power with broader knowledge and produce quality thinking (Susanto, 2013). In line with (Sani, 2014) that creative thinking is an ability that can develop unusual ideas and according to the task. This causes the

development of a new student mindset that has good quality.

One of the weaknesses of education in Indonesia lies in the learning process. In the learning process, students are less encouraged to develop creative thinking skills. The learning process in the class of students is only directed to memorize the subject matter without any demands to connect it with everyday life (Sanjaya, 2008).

The 2013 curriculum directs students to active learning, namely students do not depend on teacher explanations and memorize subject matter, but students can understand the material so that the material is more meaningful. The learning process whose implementation can stimulate active student participation, so that it can bring out student creativity is the core of the 2013 curriculum (Qomariyah and Subekti, 2021).

Creative thinking skills can be developed in study materials, including in Natural Sciences (IPA). In science subjects there are many materials, one of which is environmental material. This material discusses the surrounding conditions that can be observed directly by students, who have environmental problems that can be faced at school, should be able to train students to have creative thinking skills in obtaining, selecting, and processing information so that they can survive in situations and conditions that are always changing. and compete (Hidayani, et al. 2020).

Based on interviews with science subject teachers, there are several problems in learning, namely there are still many difficulties in solving problems. In this case, it can result in the teacher not knowing the students' creative thinking abilities. For students who have the ability to think creatively, their abilities will not be honed and will be neglected, and for students who do not have the ability to think creatively will not develop. If the teacher knows the students' creative thinking ability, then the learning process will run better and more optimally. In this school, the analysis of creative thinking skills has never been done by teachers and students.

Problems that are the object of attention to be studied scientifically can be identified as follows (1) Lack of student interest in expressing creative ideas; (2) students' creative thinking ability is still low; (3) The ability of students to find alternative answers to problems is still lacking, so that students are not seen as flexible in finding varied alternative answers; and (4) Students focus more on memorizing environmental concepts.

One tangible form of environmental material is environmental pollution that occurs as a result of human activities in the form of organic waste and inorganic waste. In this case, a handling and creative thinking skills are needed in order to find solutions in the reuse of waste that can be obtained with products that have economic value.

From the description that has been submitted, it can be stated that environmental pollution is a material related to everyday life. A creative student when given a problem that is often encountered in everyday life can make a choice of answers to a question that has been given. This is in accordance with the characteristics of creative thinking abilities that are able to think of efforts to overcome them. One of the high-level abilities that students must have is being able to develop creative thinking skills. Therefore, a research was conducted on "Analysis of Students' Creative Thinking Ability on Environmental Pollution Materials at Prince Antasari Junior High School".

Research Method

This research will be conducted at Prince Antasari Middle School, Jl. Veteran No. 1060/19, Helvetia, Kec. Labuhan Deli, Deli Serdang Regency, North Sumatra. Postal Code 20373. This study uses a mixed method approach, namely a method that combines qualitative and quantitative in one study. The less dominant method is positioned as a complementary method as additional data. In this study, the quantitative method plays a more dominant role, and as a complementary method is the qualitative method.

The sample in this study were students of class which opened 38 people and class which opened 35 people. The sampling technique in this research is total sampling. Total sampling is a sampling technique if the number of samples is the same as the population. Total sampling was chosen because the total population was less than 100. The design of this study was a non-experimental design. The design of this study provides an overview of students' creative thinking skills on Environmental Pollution material at Pangeran Antasari Junior High School.

The instruments in this study were: 1) the student's creative thinking ability test sheet to determine the extent of the students' creative thinking ability. The test sheet is in the form of a description of twelve questions according to four aspects of the indicators of creative thinking ability, namely 3 about development, 3 questions about flexibility, 3 questions about authenticity, and 3 questions about details. 2) a questionnaire to find out students' responses to creative thinking skills. This sheet is filled with a checklist on the statements that have been provided as many as 20 statement items. 3) Interview guide to find out the creative thinking patterns of each student on environmental materials and to support test result data. 4) Observation results are used to complement and strengthen the strengthening of students' creative thinking skills.

Result and Discussion

Analysis of research data was used to determine students' creative thinking skills through description tests and questionnaires, observations and interviews were carried out to determine student learning processes and class observations. The data analysis of the research results are as follows.

This research was conducted at Prince Antasari Junior High School. Data on students' creative thinking skills on environmental pollution material obtained from description tests totaling 12 questions

for 73 students can be seen in Table 1 as follows.

Table 1. showed that the category with the most achievements is quite creative with 32 students (43.8%), followed by the creative category with 27 students (37%), then less creative with 7 students (9.60%), very creative with 4 students (5.50%) and there are only 3 students (4.10%) who have the talent to think creative in the non-creative category.

Table 1. the level of creative thinking ability of students in general

Value Range	Total students	percentage (%)	criteria
81-100	4	5,50	very creative
61-80	27	37	Creative
41-60	32	43,8	quite creative
21-40	7	9,60	less creative
0-20	3	4,10	not creative

In this case, there are some students who have a non-creative category. Students who have a non-creative category are due to differences in thinking between students and student skill profiles.

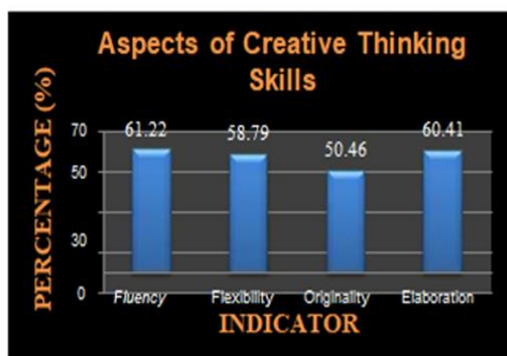


Figure 1. Diagram of the results of students' overall creative thinking skills

The picture above shows that the highest percentage score on the aspect of students' creative thinking skills is fluency, which is 61.22%. This is because students can get answers in creative thinking creatively.

In this study, the learning process can be known by filling out a questionnaire that will be given to students. Researchers

used a questionnaire instrument containing 10 positive statements and 10 negative statements with 72 respondents.

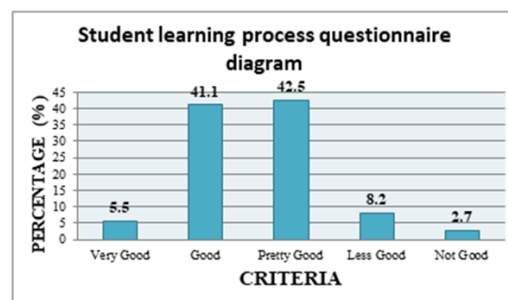


Figure 2. Student learning process questionnaire diagram

In the picture above, it shows that the most criteria are quite good with 31 students (42.5%), followed by good criteria with 30 students (41.1%), then not good with 6 students (8.2%) , and there were only 2 students (2.7%) who had poor learning process criteria. In this case, there are some students who have poor learning process criteria due to the lack of enthusiasm of students in learning and listening to the material that has been taught by the teacher.

Discussion

Each question includes creative thinking that finds 12 questions. To analyze a given answer, interviews were used to complete the answers. In addition to the test, there are also questionnaires and observations of the student's learning process to see an overview of the learning process that has taken place.

Based on the results of the study, it can be analyzed that the junior high school Pangeran Antasari students with as many as 73 students have the ability to think creatively in the quite creative category. In this case, there are some students who have a non-creative category. Students who have a non-creative category due to considerations between students and student skill profiles tend to be very different.

In the indicator aspect, creative, fluency is 61.22%, flexibility is 58.79%, originality is 50.46%, and 60.41%. The highest aspect is the aspect of performance indicators. From the answers obtained from these indicators (fluency) it shows that students can explain 3 answers to problems that occur at environmental meetings, especially in the school area. Students who have creative thinking skills on performance indicators (fluency) are considered good if students can provide answers to the problems given. This is in line with the opinion of Firdaus (2018), the aspect of showing (fluency) is more demanding for students to be able to provide answers to a problem that exists at school. The level of ability to display (fluency) can be seen from the more answers you have, the higher the increase in performance. Students are categorized as complete if students' creative thinking abilities get a score of > 61%, it can be obtained that these students have good and very good levels of creative thinking (Arini, 2017).

Students are asked to give each answer correctly and correctly. This is in line with the opinion of Mardhiyana & Sejati (2016) which states that the detail aspect is defined as the ability to describe, add, develop everything in detail. However, from the results of the study, there were some students who gave answers that were familiar and lacked detail. As well as

The aspect of creative thinking ability which is in the third position is flexibility of 58.79%. In this aspect, students give varied answers correctly and completely. This is in line with the research of Kani Ulger & Morsunbul (2016) which states that flexibility emphasizes students to provide different ideas and answers. Based on this research, students have been able to provide varied and accurate answers to problems in the school environment.

The lowest aspect of creative thinking ability is the authenticity aspect of 50.46%. This is in line with the opinion of Mufiannoor, et al. (2017), states that the results obtained produce a small score which is usually found in the authenticity indicator which is a category of creative thinking that has difficulty. Students are said to have achieved the authenticity aspect if students can express answers that are rarely put forward by other students that have not been thought of before (Susandoro, 2015).

In the ability to think creatively that really plays a role in students' creativity, namely the aspect of authenticity. The aspect of authenticity is closely related to fluency and flexibility. If these two aspects are well collaborated, then the aspect of originality thinking skills will be easy to have.

When given questions, students prefer not to answer the questions given. Many of the students do not understand this environmental pollution material. For example in the matter of organic and inorganic waste. Some of the students do not know the difference between organic waste and inorganic waste.

The results of this study can be seen that the highest achievement is in the aspect of creative thinking skills, which is quite creative 43.8%. This is in line with Syrry, et al. 2020 obtained good and sufficient average results.

On the issue of fluency, students are given questions about the problem of waste in the school environment. But on the difficult questions, according to the three students, they are in question number 3, which is to provide solutions to environmental pollution. Some students only know about environmental pollution, but not about environmental pollution.

From the analysis of research data, it is known that in general, the VII grade Prince Antasari Junior High School students who have low thinking skills and those who

have high thinking abilities on environmental pollution material have a fairly good learning process. Some students stated that science was very boring, especially about environmental pollution. In this case, the teacher only uses the question and answer method and does not use the discussion method. The teacher also does not use powerpoint (ppt) which can attract students' attention. This is due to the lack of adequate time, so the teacher does not use the discussion method.

In the learning process, only some students participate in learning activities. This is due to the lack of courage of students to express opinions when the teacher gives questions and answers. Some of the students also prefer to be silent rather than ask the teacher about things they don't understand.

The questionnaire is an instrument stated by the respondent and includes a measuring instrument for student behavior. Researchers took a questionnaire to obtain data about the student learning process using 5 scales, namely very good, good, quite good, not good, and not good. Based on the questionnaires and tests, it was obtained that the students' creative thinking abilities of Prince Antasari Junior High School were in the category of quite creative with a fairly good learning process. This conclusion is based on the test results and the results of the questionnaire studied. From this questionnaire statement, researchers can find out the learning process of Prince Antasari Junior High School students is quite good with the acquisition of 42.5%.

Based on the results obtained from the questionnaire, it shows that it is very good with 4 students (5.5%), good criteria with 30 students (41.1%), quite good with 31 students (42.5%), poor criteria with 6 students (8.2%), and the criteria are not good with 2 students (2.7%).

Based on the student learning process, there are still students who do not

participate in the learning process. The science teachers of Prince Antasari Middle School often use conventional methods and inadequate learning media. The impact on the student learning process, students prefer to talk to their friends next to them rather than listen to the teacher explain. This agrees with Manullang and Hutahaen (2017), stating that the teacher's teaching method, the way the teacher teaches in managing the class is very influential because it can affect the success of students in understanding the material.

Based on the observations made by the researchers during the observation, the teacher made lesson plans by conveying the competencies to be achieved to students. The teacher uses spoken and written language that is correct and fluent. In the learning process the teacher uses the question and answer method to students. After each lesson, the teacher carries out a final evaluation according to the student's competence. Every time a student asks, the teacher emphasizes the important points in his explanation.

Conclusion

1. The description of the creative thinking test ability of the VII grade Prince Antasari Junior High School students on the environmental pollution material with the most criteria being creative enough, followed by the creative category, then less creative, very creative and there are only 3 students who have the ability to think creatively in the non-creative category. creative. The overall score of students' creative thinking ability is 57, so it can be concluded that the students of Prince Antasari Junior High School are in the quite creative category.
2. Indicators on aspects of the creative thinking ability of Prince SMP students Antasari aspects of creative thinking ability include fluency of 61.22%, flexibility of 58.79%, originality of 50.46%, and detail of 60.41%.

3. The learning process of grade VII students of Prince Antasari Junior High School on Environmental Pollution material has categories of very good (4 students), good (30 students), quite good (31 students), not good (6 students), and not good (2 students) .

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