PARADIKMA JURNAL PENDIDIKAN MATEMATIKA
ISSN: 1978-8002 (Print)
ISSN: 2502-7204 (Online)

Analysis of Students' Mathematical Abstraction Ability by Using Problem-Based Learning Model

Zul Fahmi Siregar[1*], Bornok Sinaga[2], Pardomuan Sitompul[3]

[1,2,3]Departement of Mathematics Education, State University of Medan, Indonesia
*Corresponding Author: avin.regar@gmail.com

Article History:
Received : 04-07-2023
Revised : 14-07-2023
Accepted : 31-01-2024
Online : 06-05-2024

Keywords:
Qualitative Research Analysis;
Mathematical Abstraction Ability;
Problem Based Learning Model

ABSTRACT

This study aims to determine students' mathematical abstraction ability, answer process and difficulties faced by students in solving derivative problems. The subjects in this study were 11th grade students of SMA SWASTA AN - NIZAM Medan who were taught with the application of PBL model and scientific approach. The instrument in this study is a formative test used to see the level of mathematical abstraction ability and the answer process given by students. The difficulties faced by students in the process of solving the problems given can be known through the interview process conducted and documented through cell phones. Of the 19 students who took the math abstraction ability test, 4 students had high category math abstraction ability (21%). 11 students have medium category math abstraction ability (58%), and 4 students have low category math abstraction ability (21%). Of the 4 problems given, for the recognition stage, problem no 1 can be solved by all students. problem no 2 can be solved by 17 students, problem no 3 can be solved by 12 students and problem no 4 can be solved by 8 students. The decline also occurred at the representation and structural abstraction stages. After being analyzed based on the process of answers given by students and the results of interviews conducted, the decline was caused by: 1. the level of difficulty of the problem, 2. learning experience, 3. reasoning power and 4. literacy skills of each different student.. In this research, the media used to help the research process is geogebra. The use of this media is only limited to how to solve the problems given in other ways besides the concepts taught at school.

A. INTRODUCTION

The world of education is currently growing, especially in the era of science and information technology which is developing rapidly. Education is a conscious effort to prepare students through guidance, teaching and training activities for their future roles. Thus, education is a process of a structured plan to realize successful learning in terms of personality, character, morals and form useful people for the nation and state. To improve the quality of education, various ways of innovation, curriculum and educational infrastructure are needed to improve the learning process.

The learning process in educational units is held interactively, inspiring, fun, challenging, motivating students to be active and can provide space for students to develop creativity and independence in accordance with the talents, interests and physical and psychological development of students. The current learning process is not only based on conventional concepts. Science and technology encourage reform efforts in the use of technology to improve the quality of education and teaching and learning processes.

Mathematics is a necessity that is used to increase the credibility and control of knowledge (Surya, 2017: 1). Mathematics is also a science that influences the development of science and technology, so that mathematics also needs to be taught through the learning process. Therefore, in order to master and create technology in the future, strong mastery of mathematics is required from an early age.

Mathematics has an important role in various aspects of life. There are many problems and activities in everyday life that must be solved using mathematics. It appears that mathematics is a universal science that underlies the development of technology and has an important role in various scientific disciplines and advances human intellect.

Currently, there is a new learning curriculum known as the driving school curriculum. This curriculum emphasizes students to be able to exploit their own abilities based on their interests and talents. The curriculum initiated by Ki Hajar Dewantara is known as independent learning. The final evaluation of this curriculum is known as AKM (Minimum Competency Assessment) which focuses on students' literacy and numeracy abilities. This assessment model requires students to have good literacy skills and directs students to be able to solve any conceptual problems that often occur in everyday life. Students are required to be able to build understanding, concepts, and mathematical models and their solutions to any problems that arise.

The 2013 Permendikbud stipulates that the learning process in the 2013 curriculum should consist of five learning experiences namely observing, asking, gathering information, associating, and communicating, which is abbreviated as 5M. This learning experience is known as a scientific approach. The Ministry of Education and Culture (2014) clarifies that the learning models applied to carry out scientific approaches include Discovery Learning (DL), Problem-Based Learning (PBL), and Project-Based Learning (PjBL).

This problem-based learning model is very important to implement optimally, because the role of students in learning is very high so that it can be ascertained that this design emphasizes critical and analytical thinking processes. By using the PBL model, the potential resulting from this design is that students can think critically, be trained in discipline, communicate with groups, be tolerant, be responsible and can increase motivation and promote student participation.

This problem-based learning model is very important to implement optimally, because the learning model in real-life contexts is problem-solving oriented by utilizing critical thinking, and practically through the use of multiple intelligences by getting used to "how to learn". It is clear that PBL is a learning strategy that utilizes actual problems in accordance with the scientific field in an integrated manner through the utilization of human intelligence including IQ, EQ, and SQ to develop students' critical and creative thinking. So, PBL here is expected to produce students who are able to solve problems.

The role of learning media in the learning and teaching process is an integral part that cannot be separated from the world of education. Learning media is anything that can be used to channel messages from senders to recipients, so that they can stimulate students' thoughts, feelings, concerns, and interests to learn (Sri Ayu, 2020: 1). Media as the main tool in the learning process that can make it easier for teachers and students to interact as a whole, because the media is a form of stimulant and the main tool, learning media can be in the form of hearing (audio) and sight (visual) or audiovisual. Thus, students will more easily understand the material they are studying when learning to use media.

Aside from being a tool in the learning process, the media is also a source of learning. It is said to be a tool because the media is used by teachers to assist teachers in conveying learning material to students, especially material that is considered complicated. Media can also be a source of learning because students no longer only learn from teachers, but also from various media that make various learning materials.

TIMSS 2003 study results, Indonesia is ranked 35 out of 46 participating countries with an average score of 411, while the international average score is 467. TIMSS 2007 study results, Indonesia is ranked 36 out of 49 participating countries with an average score of 397, the results of the 2011 TIMSS study, Indonesia was ranked 38th out of 42 participating countries with an average score of 386, while the international average score was 500 (P4TK, 2011). And the latest results, namely TIMSS 2015 Indonesia is ranked 44th out of 49 countries (Nizam, 2016).

Low literacy skills make it very difficult for some students when dealing with word problems which are very common in derivative material. Presentation of questions that are too long on derived material is one of the factors that causes many students to ignore these questions and even tend to give up at the beginning before trying to work on them. This problem is further exacerbated by the low reasoning power of the students and the weak ability of students' mathematical abstraction.

On a smaller scale, this problem also occurs in the An-nizam Medan private high school. Based on the observations that have been made, the weak mathematical abstraction abilities of class XI SMAS AN – nizam students can be seen from the students' work in solving the problems given. The following problems were given when the observation was carried out:

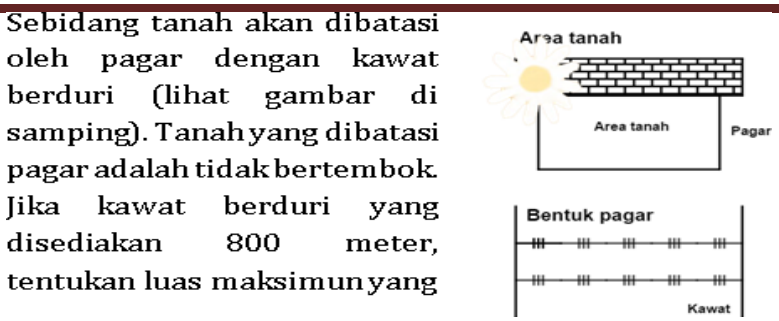

Figure 1: The problems given

And the following are students' answers to the problems given as initial observations to see students' mathematical abstraction abilities based on the three indicators:

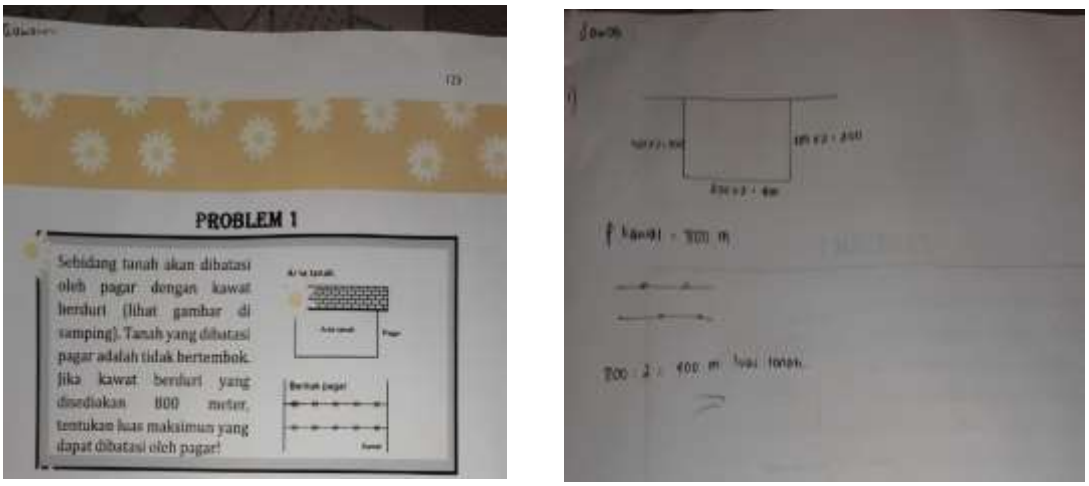

Figure 2: Student Answers 2

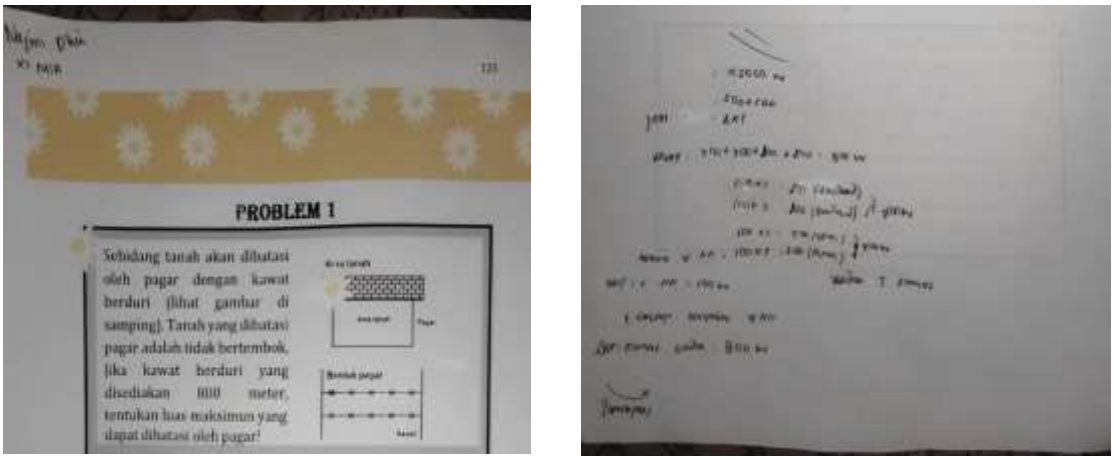

Figure 3: Student Answers 3

Almost all students have low abstraction abilities when viewed from indicators of mathematical abstraction abilities. Student understanding is only limited to the recognition stage. Students still look confused to understand problems that require literacy and reasoning skills in solving a problem.

The results of research by Alfin Lushfatun Nisa entitled "Analysis of Students' Mathematical Abstraction Ability in Solving Problems on Quadrilateral Class VII Middle School Material" shows that students' mathematical abstraction abilities on quadrilateral material are based on criteria for levels of abstraction which include recognition level (recognition), level of representation (representation) and the level of structural abstraction (structural abstraction). Students with high mathematical abilities can use their abstraction abilities well, namely being able to reach all three

levels. Students with moderate abilities can use abstraction abilities at all three levels in two questions and in the other four questions they are only able to reach the recognition and representation levels.

Derivatives are materials that require a lot of reading skills, the ability to convert word problems into mathematical models that use symbols and variables to make solving these problems easier. Students are also required to understand the rules in solving these problems with an understanding of the concepts that have been taught.

In the era of 4.0 or the era of digitalization, learning is required to change the context of learning which was originally paper-oriented to switch to technology (IT). One of the software that we can use to solve calculation problems on derived materials is "GEOEBRA". This application is very useful to make learning fun and seem easier. The use of this application is by entering the line equations that we have obtained from the abstraction process so that we obtain solutions to the problems presented.

One of the efforts made by the government to improve students' literacy, reasoning and abstraction abilities is to apply a learning model that is fully student-oriented. And the learning model that is often used is Problem Based Learning (PBL). This PBL model exposes students more to everyday problems with the hope that students are able to construct their own knowledge to solve problems with mathematical rules and concepts.

B. RESEARCH METHODS

This research is a qualitative research with a qualitative descriptive approach, meaning that the data collected is the result of observations, written test results), and the results of interviews are processed descriptively in writing to determine the ability of class XI students of SMA SWASTA AN – NIZAM Medan in solving PBL-based problems for determine the ability of students' mathematical abstraction.

The instrument in this study is a formative test used to see the level of mathematical abstraction ability and the answer process given by students. The difficulties faced by students in the process of solving the problems given can be known through the interview process conducted and documented through cell phones. The mechanism used in this study includes three stages, namely: (1) the planning stage; (2) The research instrument validation stage; (3) The stage of conducting research and data analysis. Each stage is designed in such a way that validated data is obtained according to the research objectives. The following will discuss the design of each stage in the research.

1) Planning Stage

At this stage the researcher compiled learning tools and research instruments. The learning tools in this study are in the form of Learning Implementation Plans (RPP) and Student Worksheets (LKPD). While the research instruments used included tests of mathematical abstraction abilities and student interview guide sheets in learning mathematics.

2) Stage of Expert Validation of Research Instruments

At this stage the validation stage of the research instrument will be described which will be carried out by the validator. When conducting validation or assessment of the developed tools, practitioners and expert validators are also asked to provide comments, suggestions and general conclusions from each tool being assessed. This also indicates that the instrument that has been developed meets the eligibility criteria (valid) based on the assessment of practitioners and expert validators and is feasible for field trials on students.

3) Implementation Stage of Research and Data Analysis

After preparing learning tools and research instruments as well as validation, then proceed with conducting research and data analysis. The design of the research implementation begins with carrying out mathematics learning in class XI SMA PRIVATE AN – NIZAM Medan with the PBL model and the Scientific Approach. The following is a chart of a qualitative research design:

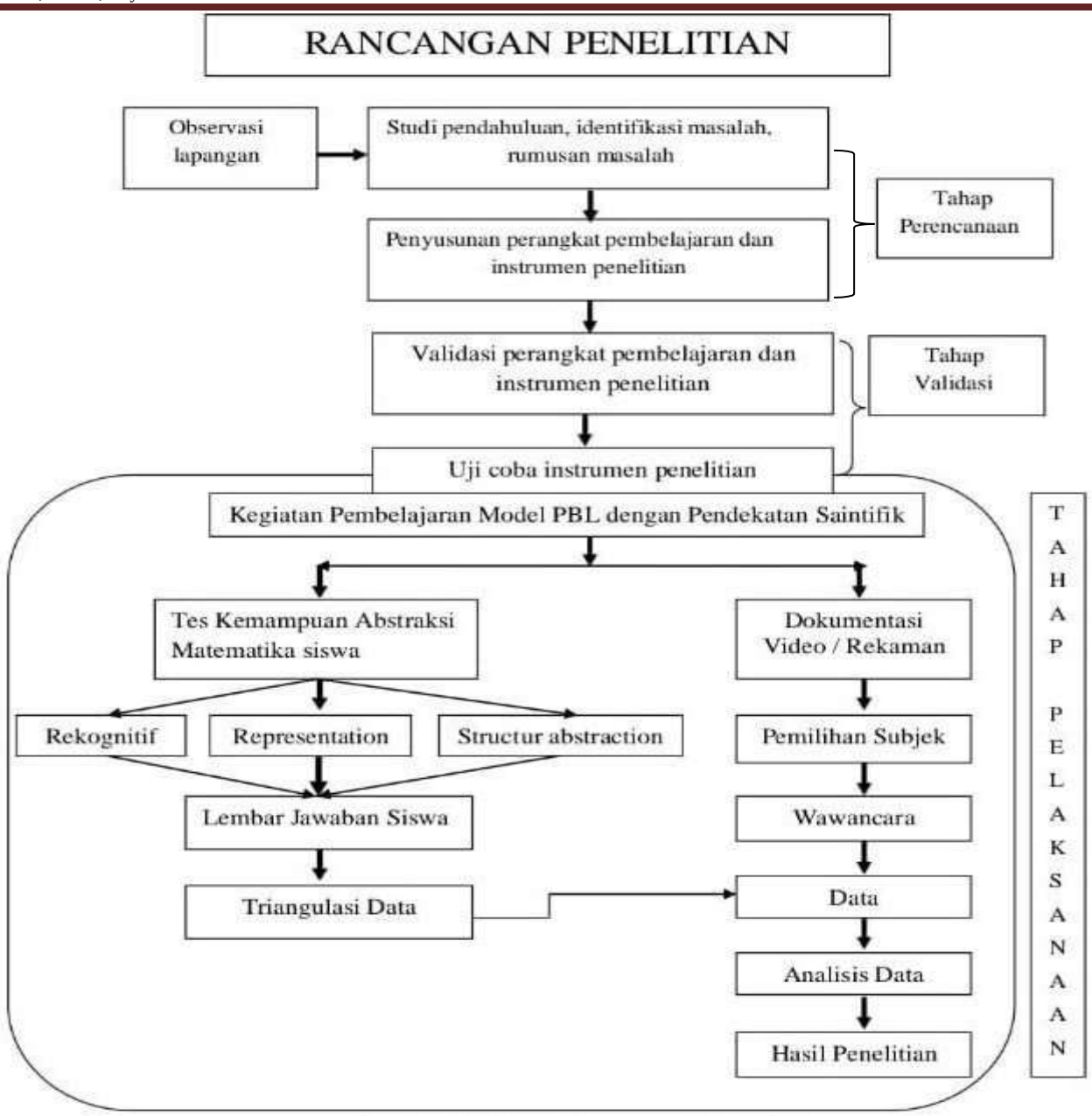

Figure 4. Research Design Chart

C. RESULT AND DISCUSSION

The data of this study came from students of SMA SWASTA AN - NIZAM Medan using a questionnaire model and answers in the form of a Likert scale. Questionnaires were given to students after they carried out teaching and learning activities in the field of mathematics, so that researchers made direct observations of the implementation of activities. The following can be seen the results of data processing, namely:

Tabel 1 : Hasil Tes Kemampuan Abstraksi Matematika Siswa

No	NAMA	JENIS KELAMIN	NILAI	KATEGORI
01	Alicya Ananda G	P	90	Tinggi
02	Dinda Alfiyah D	P	20	Rendah
03	Elianora Pasaribu	P	90	Tinggi
04	Fadlan Anshari	L	65	Sedang
05	Fauzi Pratama	L	70	Sedang
06	Habib Aznan D	L	80	Sedang

07	Hafiz Al Rasyid	L	50	Sedang
08	Hilmy Hawari	L	90	Tinggi
09	M. Nur Riziq Syam	L	85	Sedang
10	M. Rizky Pratama	L	90	Tinggi
11	Muzdalifah Balqis	P	45	Sedang
12	Najmi Dhia	P	35	Rendah
13	Nayla Syafiqa	P	35	Rendah
14	Qisthy Qawarir	P	65	Sedang
15	Rafa Affandi	L	75	Sedang
16	Raisha Syahida	P	85	Sedang
17	Salwa Amanda	P	45	Sedang
18	Siti Balqis	P	45	Sedang
19	Vania Salsabila Fahira	P	20	Rendah

The results of the student abstraction ability test are presented in a simpler form which contains the class average value in completing the test questions given.

Table 2 : Table of Mathematical Abstraction Ability Test Results

The number of students	Maximum Score	Minimum Score	Average Score	St. Deviation
19	90	20	62,11	24.45

The results of the categorization of the ability level of mathematical abstraction which are groupedinto 3 levels are as follows:

Table 3 : Level of Mathematical abstraction ability

Category	Score Range	Amount Student	Percentage
High	Score > 86.56	4	21 %
Medium	37.66 < Score < 86.56	11	58 %
Low	Score < 37.66	4	21 %
	Amount	**19**	**100%**

The diagram of students' mathematical abstraction ability levels is as follows.

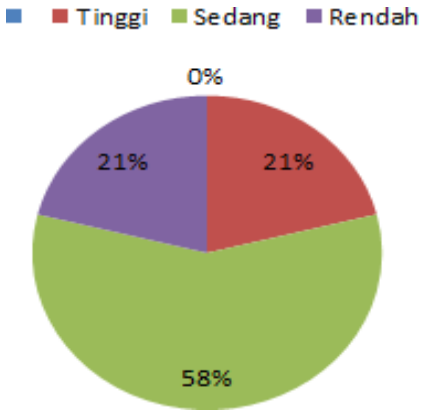

Figure 5: Diagram of students' mathematical abstraction abilities

Table 4.6 above shows that of the 19 students who took the mathematical abstraction ability test, it was found that the number of students with a 'high' criterion level of mathematical abstraction ability was 4 people with a percentage of 21%, the number of students with a 'medium' level of mathematical abstraction ability

was 11 people with a percentage 58% and the number of students with a 'low' level of mathematical abstraction ability is 4 people with a percentage of 21%.

This is in line with research conducted by (rahayu: 2020) which states "the student's reflective abstraction abilities on linear algebra problem solving are very good. this can be seen from the percentage achieved at stages of the recognition, the representation, the structural abstraction, and the structural awareness which is associated with polya problem solving measures above an average of 73,31% (moderat category). The following is an example of the answer process or the steps used to solve students' math problems in solving the given test questions:

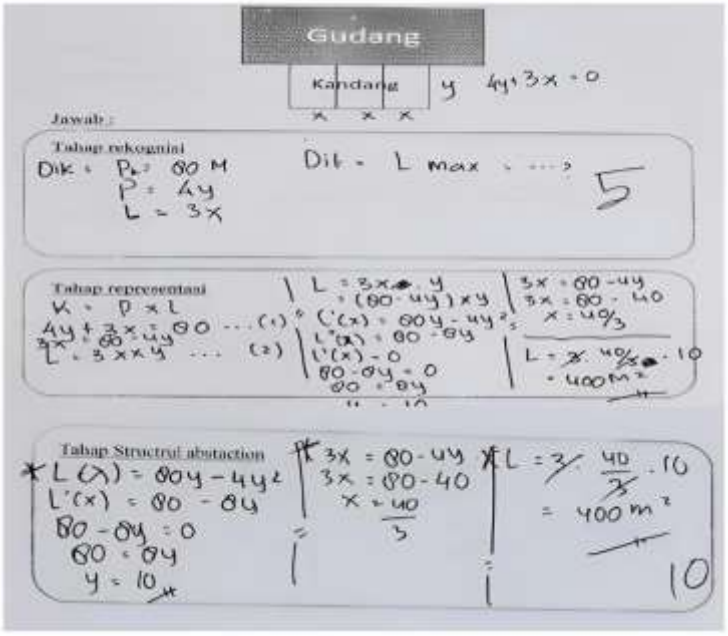

Figure 6: Process of Student Answers to Question 1

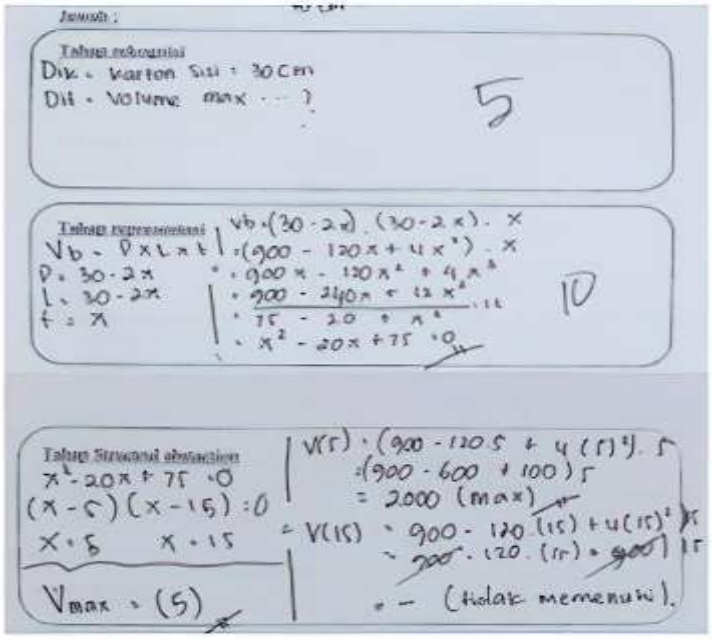

Figure 7: Process of Student Answers to Question 2

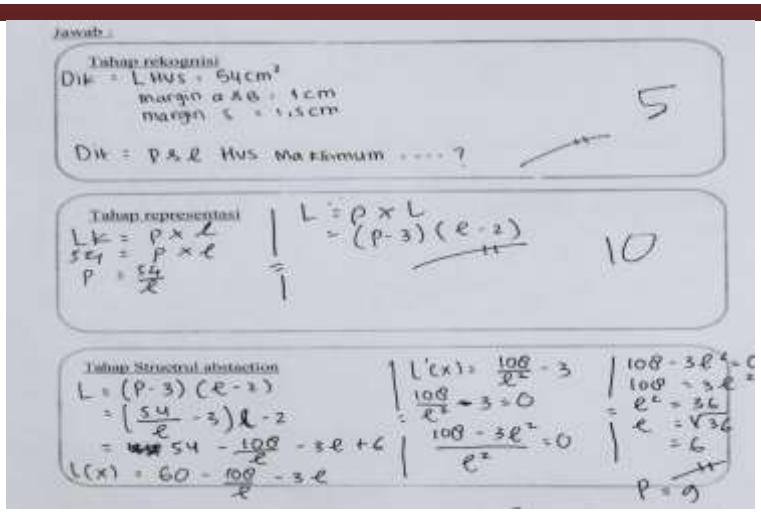

Figure 8: Process of Student Answers to Question 3

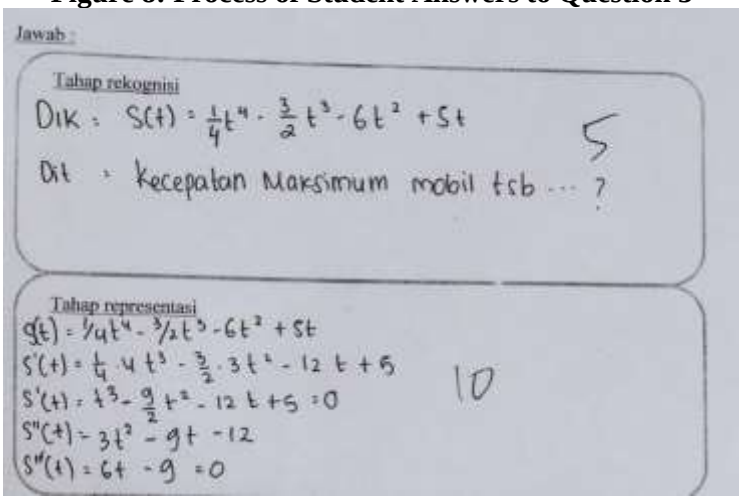

Figure 9: Process of Student Answers to Question 4

From Figures 6, 7, 8, and 9 it can be seen that students were able to complete the questions given by filling in the 3 stages of work presented. for stage Recognition Students are able to rewrite about any important information contained in the problem. For the Representation stage students are able to change the form of the problem to a mathematical model. Students are also able to express what concepts are used to solve these problems. Students are also able to relate one concept to another. For the structural abstraction stage, students are able to solve problems well by using derived concepts. For Figure 6 students are only able to solve the problems that are given only to the recognition stage and the representation stage. For the structural abstraction stage, students experience problems running out of time in the process.

In general, students with high category mathematical abstraction ability did not find many mistakes in solving the test questions given. For students with medium category mathematical abstraction ability, the mistakes made by students in solving the test questions given are less precise and complete in restating concepts, errors in applying formulas, and even not completing the problem completely. This is in line with research conducted by (nurvita: 2019) which states that errors occur due to an imperfect level of mastery of the material, this imperfection is related to the abilities possessed because each student has different abilities in understanding, remembering and even connecting between concepts. Meanwhile, students with low abstraction ability made more mistakes and even some questions were not answered. This is because students have not fully realized the thinking process, understanding the concepts in the material studied. This is in line with research conducted by (suci: 2020) which says that the lack of accuracy and completeness of students in learning encourages students to make many mistakes in solving the problems given.

The difficulty of students' mathematical abstractions is that they are not able to understand the steps in solving math problems properly. These difficulties are not only experienced by groups of students with 'low' mathematical abstraction abilities, groups of students with high conceptual understanding abilities can also experience them. Here are some excerpts from the interview:

Question number 1

T : Assalamu'alaikum Wr Wb
S : Wa'alaikum salam
T : What's your name?
S : Alicia Ananda Gusto
T : From problem 1, What information do you know?
S : The farmer will build 3 identical rectangular cages attached to the side of a barn with a supply of 80 m of wire
T : What concept do you use to solve this problem?
S : Derivative concept to find the maximum value or minimum value contained in the question
T : For problem 1, do you use other concepts to solve the problem?
S : Yes. I use the concept of the area and perimeter of a rectangle, the concept of algebra and the concept of quadratic equations
T : How did Ananda solve Problem 1?
S : My first step is to determine the algebraic form of the available wire length using the perimeter of the rectangle. Until I get

$$80 = 3x + 4y\ldots..\text{equation (1)}$$

Then I used the formula for the area of a rectangle, which I adjusted to the problem so I got the formula

$$L = 3xy\ldots\text{equation (2)}$$

I substituted equation (1) into equation (2) to form a quadratic equation as I wrote. I then derive the quadratic equation so that I get the value of the y variable. I then substituted the value of the y variable into equation 1 so that I got the value of the x variable. I enter the value of the x variable and the y variable into equation 2 to get the maximum area of the cage.

Question Number 2

T : From problem 2, What information does Ananda know?
S : A cardboard square with a size of 30 cm will be made into a box which on each side will be cut 4 squares with side length x cm
T : What concept do you use to solve this problem?
S : The concept of derivatives and increasing and decreasing functions
T : For these 2 problems, what concepts do you use to solve these problems?
S : The concept of a square, the concept of algebra, the concept of volume, the concept of demand, the concept of increasing and decreasing functions
T : How did Ananda solve these 2 problems?
S : My first step is to find the length of the box, the width of the box and the height of the box. Then I looked for the value of the volume of the box to form an equation to the cube. I then derived this equation. From the derivative I obtained the values x1 and x2. Then I substituted the x1 and x2 values into the volume equation and the largest value is the maximum value.

Question Number 3

T : From problem 3, What information does Ananda know?
S : The area of a piece of paper is 54 cm2. The paper will be typed with 1.5 cm left and right margins and 1 cm top and bottom margins.
T : What concept do you use to solve this problem?
S : The concept of derivatives, increasing and decreasing functions.
T : For problem 3, what concepts did you use to solve the problem?
S : The concept of rectangles, the concept of algebra, the concept of derivatives, the concept of increasing and decreasing functions.
T : How did Ananda solve Problem 3?
S : First I look for the length and width of the typing with the information in the problem. Then I find the area of the typing area by substituting the paper area into the typing area. Then I lowered the results of typing area to get the length and width of typing so that the maximum typing area is obtained.

Question Number 4

T : From problem 4, What information does Ananda know?
S : No, sir, it's different from the others

T : What concept did you use to solve the problem?
S : I don't know, sir
T : For problem 4, what concepts do we use to solve the problem?
S : I don't know, sir
T : How did Ananda solve Problem 4?
S : I don't know, sir
T : Thank you for your time. Assalamualaikum
S : Wa'alaikumsalam..

From the excerpts of this interview with these students it can be concluded that the students' understanding of the basic concepts of mathematics is very low. This was also acknowledged by the teacher in the student's field of study by saying that the child always gets the lowest score in mathematics. After being analyzed based on the process of answers given by students and the results of interviews conducted, the decline was caused by: 1. the level of difficulty of the problem, 2. learning experience, 3. reasoning power and 4. literacy skills of each different student. In this research, the media used to help the research process is geogebra. The use of this media is only limited to how to solve the problems given in other ways besides the concepts taught at school.

D. CONCLUSION AND SUGGESTIONS

The results of the students' mathematical abstraction ability tests showed that of 4 of the 19 students who took the mathematical abstraction ability exam had a "high" level (21%), 11 had a "medium" level (58%), and 5 limited to a "low" level. In the Problem Based Learning methodology with GeoGebra Software, students demonstrated mathematical abstraction skills by restating concepts, representing the problem mathematically, and solving the problem. 19 students correctly repeated the concept and described the problem in question 1. 17 (89.5%) students understood question 2 and identified the issue. Two students (10.5%) failed recognition. 12 students (63.2%) could explain question 3's difficulty. 7 students (36.8%) failed this recognition step. 8 students (42.1%) could explain question 4's difficulty. 11 students (58.9%) failed recognition. 18 students represented question 1 with varied answers. Students might write about solving these problems and create a mathematical model. 14 students created mathematical models for questions 2. Students can also apply problem-solving concepts. Question 3 had 10 pupils complete this representation level, whereas question 4 had only 8. 15 students completed issue 1's structural abstraction level utilizing derived concepts and rules. 12 students answered question 2. 8 students for questions 3 and 6 for question 4 applied the principles and rules for structural abstraction. Problem-Based Learning and Geogebra Software challenges students' mathematical abstraction: High-level mathematical abstraction students can rephrase concepts, use mathematical models, and solve problems. Mathematically abstract students struggle to finish the puzzles in time. Students cannot articulate problem-solving approaches. Usually a number. Moderately abstract mathematicians can summarize. Linking concepts, interpreting ideas into mathematical models, and applying concepts to problem solutions becomes difficult. Students may struggle with previous math concepts. Geogebra problem-based learning aids comprehension. Problem-based learning and Geogebra won't work if kids can't remember math. Low-mathematical abstraction students struggle to restate concepts, model queries, and solve problems. and applying concepts to problem solutions become difficult. Students may struggle with previous math concepts. Geogebra problem-based learning aids comprehension. Problem-based learning and Geogebra won't work if kids can't remember math. Low-mathematical abstraction students struggle to restate concepts, model queries, and solve problems. and applying concepts to problem solutions become difficult. Students may struggle with previous math concepts. Geogebra problem-based learning aids comprehension. Problem-based learning and Geogebra won't work if kids can't remember math. Low-mathematical abstraction students struggle to restate concepts, model queries, and solve problems.

ACKNOWLEDGEMENT

On this space the authors want to express my deepest sincere thanks and biggest tribute to all those who have helped the author to finish this. First, to Prof. Dr. Bornok Sinaga, M.Pd as the 1st supervisor and Head of the Mathematics Education Study Program,Dr. Pardomuan Sitompul, S.Si, M.Si as the 2nd supervisor, Dr. Mulyono, M.Si as head of the Mathematics Education Study Program, the principal and teachers and administrative staff of SMA PRIVATE AN-NIZAM, and my family, my beloved sisters Elvi Herlina Siregar

and Rasyidah Siregar and who will never be forgotten, my beloved wife Nova Lasari Lubis and my beloved son Hafidz Al Faatih Siregar.

REFERENCES

Amir, Taufiq. (2007). *Inovasi Pendidikan Melalui Problem Based Learning: Bagaimana Pendidik Memberdayakan Pembelajar di Era Pengetahuan*. Jakarta: Prenadamedia Group

Andi Suryana, Kontribusi Pendidikan Matematika dan Matematika dalam Membangun Karakter Guru dan Siswa, (prosding, ISBN: 978-979-16353-8-7,2012)

Arends. (2007). *Model Pembelajaran Problem Based Learning*. Jakarta: Bumi Aksara Baharudin dan Esa Nur Wahyuni, Teori Belajar & Pengembangan. Jakarta: Ar- Ruzz Media.

Cifarelli, V. V. 1988. The role of abstraction as a learning process in mathematical problem solving. Doctoral dissertation, Purdue University, Indiana. USA

Desmita. 2012. *Psikologi Perkembangan Peserta Didik*. Bandung: PT Remaja Rosdakarya.

Dewi I. 2018. The analysis of junior high school students' mathematical abstraction ability based on local cultural wisdom. Journal of Physics. doi :10.1088/1742-6596/1088/1/012076

Gagne, R.M. (1983). Some Issues in the Psychology of Mathematics Instruction. *Journal for Research in Mathematics Education*, Volume 14.

Glazer. (2001). Problem Based Instruction. In M. Orey (ED), *Emerging Perspective on learning, teching, and technology*. (online) terdapat. http//www.coe.uga.edu/epltt/ProblemBasedInstruct.htm.

Kadek Adi Yoga Suputra, 2021, Penerapan Model Problem Based Learning Berbantuan GeoGebra Meningkatkan Hasil Belajar Matematika, *Journal of Education Action Research*, Volume 5.

Murtianto Hery Yanuar. 2019. Effect of learning using mathematica software toward mathematical abstraction ability, motivation, and independence of students in analytic geometry. *Infinity Juornal*, Volume 8 No. 2

Nurjannah S. 2020. Literature study: the role of abstraction ability to strengthen students early knowledge in mathematics learning. Journal of Physics: Conference Series. doi:10.1088/1742-6596/1806/1/012064

Petty, James Alan. 1996. The role of reflective abstraction in the conceptualization of infinity and invinite process. Doctoral Dissertation, Purdue Univercity, Indiana

Ratni Yanti, 2019, Penerapan Pendekatan Saintifik Berbantuan Geogebra dalam Upaya Meningkatkan Pemahaman Konsep Matematis Siswa, *Jurnal Matematika dan Pendidikan Matematika*,Vol. 10.

Sugiyono. 2014. *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Bandung: Alfabeta. Soedjadi.2000. Kiat Pendidikan Matematika Di Indonesia. Jakarta : Depdiknas

Suhana, Cucu. 2014. *Konsep Strategi Pembelajaran. Bandung: Refika Aditama. Supranoto, Kusaeri. 2012. Pengukuran dan Penilaian Pendidikan.* Yogyakarta: Graha Ilmu.

Suryana, Andi. 2012. Kontribusi Pendidikan Matematika dan Matematika dalam Membangun Karakter Guru dan Siswa. Prosding ,ISBN: 978-979-16353-8-7.

Trianto. (2013). *Mendesain Model Pembelajaran Inovatif- Progresif Konsep, Landasan, dan Implementasinya pada Kurikulum Tingkat Satuan Pendidikan (KTSP)*. Jakarta: Kencana Prenada Media Grup.