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Analysis numeracy literacy skills in terms of standardized math problem on a minimum competency assessment

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Abstract

The quality of education in Indonesia as seen from the results of PISA, TIMSS and the Indonesian Student Competency Assessment is still relatively low. The Indonesian government issued a new policy to improve the quality of education in Indonesia. One of the policies implemented was the abolition of the National Examination, which is a tool for evaluating learning outcomes at the end of each level of education with a national standard, replaced by a National Assessment. In the National Assessment, there are two things that will become the National standard in the field of education, namely the Minimum Competence Assessment and the Character Survey. The Minimum Competency Assessment focuses on measuring students' thinking competence when reading texts (literacy) and numeracy literacy. Numerical literacy is needed to face the Minimum Competency Assessment and is also needed for 21st century skills. Numerical Literacy is also important for everyday life. Therefore, this study focuses on analyzing the numeracy literacy skills of students in solving Minimum Competency Assessment math problems and knowing the factors that affect the level of numeracy literacy skills of students in completing Minimum Competency Assessment standardized math problems. Data were collected using a questionnaire and a standardized test of mathematics was carried out with the Minimum Competency Assessment standard for students. In this study, the results of the analysis of students' numeracy literacy skills were obtained in terms of mathematics problems with Minimum Competency Assessment standards and factors that affect students' numeracy literacy skills.

1. Introduction

The quality of education is a comprehensive description and characteristics that indicate the ability of the education. To adjust education standards at the national and international levels, it is necessary to implement quality education. In improving the quality of education in Indonesia, the Government implements several regulations and policies, one of which is the evaluation of learning for students.

There is no denying that every new or old policy must bring up pros and cons both in society and in the government order. In 2019, the Minister of Education and Culture, Nadiem Makarim issued new policies taken to improve the quality of education in Indonesia, these policies which have four important points, namely changes to the National Standard School Examination system, the abolition of the National Examination, the writing of the Learning Implementation Plan is carried out efficiently and effectively and the implementation of the new Student Admissions Regulations with a zoning system. The four main policies are called the Free Learning Policy.

One of the Free Learning Policies is the abolition of the National Examination which is a tool for evaluating learning outcomes at the end of each level of education with national standards. The abolition of the National Examination was replaced by the National Assessment. In the National Assessment there

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are two things that will become the National standard in the field of education, namely the Minimum Competency Assessment and the Character Survey. This policy will be implemented starting in 2021.

Minimum Competency Assessment is used to map schools and regions based on minimum competencies. Minimum Competency Assessment focuses on measuring the thinking or reasoning competence of students when reading texts (literacy) and dealing with problems that require mathematical knowledge (numerical literacy). Basic knowledge of mathematics is very important to face everyday life. Mathematics serves to develop the ability to calculate, measure, find and use mathematical formulas that can support students' understanding of concepts related to everyday life.

Learning mathematics is not enough to know the concept, but can use the concept to solve problems, both problems related to mathematics or problems encountered in everyday life. Mathematics for most students is considered a difficult subject to understand because students' numeracy literacy skills are still low. This is reinforced by the results of PISA research in the field of Mathematics, namely in 2018 Indonesia was ranked 72 out of 78 participating countries (OECD, 2018) and also in TIMSS research in 2016 namely Indonesia received a mathematics score of 395 from the average score of 500 and the results of the AKSI which are published from the National Assessment and Learning Center page.

Seeing the results of PISA, TIMSS and AKSI that have been described, this means that the quality of education in Indonesia can still be said to be low at the national and international levels. The basic ability that can be seen from the low quality of education in Indonesia is numeracy literacy skills. Students need to have numeracy literacy skills which are basic abilities in dealing with problems related to mathematics from questions and in their application in everyday life.

At a certain level, there is a minimum ability or the most basic ability that must be possessed by students. These abilities in this case include reading and numeracy literacy. This ability is in accordance with 21st century skills that require students to be able to keep up with the times that are full of challenges. By mastering 21st century skills, students will have the skills to learn and innovate, the skills to use and utilize technology and information media and can implement them in dealing with everyday life.

Numerical literacy is closely related to solving mathematical problems. If there is no problem solving the benefits of learning mathematics are limited. This is because the core of learning mathematics is problem solving (NCTM, 2000). The problem solving in question is not limited to solving routine mathematical problems but rather finding solutions to contextual problems faced daily where reasoning is absolutely necessary. Mathematical problems and problems related to good mathematics can be used to spur people to explore mathematical ideas, strengthen reasoning relationships between mathematical concepts, and train perseverance and creativity in finding appropriate problem-solving strategies.

One of the roles of the Government of Indonesia in facing the 21st century in the field of education is to conduct a Minimum Competency Assessment in 2021 which includes an assessment of reading and numeracy literacy. This is done to improve the numeracy literacy of students in Indonesia which is still relatively low and also to prepare students to have 21st century skills. This Minimum Competency Assessment aims to train students in basic literacy and numeracy skills, such as understanding the concepts behind writing and the ability to use numbers.

Minimum Competency Assessment does not require students to be proficient in mastering content, or material, but to get used to starting to think highly, critically and creatively so that students will be able to learn any subject. Through Minimum Competency Assessment, students are introduced to convergent thinking in determining the right answer. Minimum Competency Assessment can produce skill maps on numeracy literacy for students in grade 5 Elementary School, grade 8 Junior High School and grade 11 Senior High School where it can be used to improve the learning process in the education unit. Therefore, the questions developed for Minimum Competency Assessment are contextual in nature, namely measuring problem-solving competence and stimulating students to think critically.

In the Minimum Competency Assessment there is an assessment, where the assessment refers to the benchmarks contained in PISA and TIMSS. The questions used in the Minimum Competency Assessment will make students able to generate analytical power based on information, in other words, it does not make students memorize or remember the material that has been studied. In the development of the Minimum Competency Assessment questions, it was carried out through several stages, namely: preparation of the Minimum Competency Assessment question bank design, framework analysis, stimulus preparation, assignment writing questions, reviewing and repairing questions.

From the background described above, numeracy literacy skills are needed to improve the quality of education in Indonesia. In this case, numeracy literacy skills are very much needed to face 21st century skills and in 2021 the Indonesian government will start implementing Minimum Competency Assessment which requires students to have numeracy literacy skills. The Minimum Competency Assessment standard questions will be a benchmark for numeracy literacy skills in Indonesia. In addition to dealing with Minimum Competency Assessment, numeracy literacy skills are also needed to face national and international standard evaluations, for example, numeracy literacy skills will be needed when working on PISA, TIMSS, and AKSI questions.

This research was conducted in order to analyze the numeracy literacy ability of students. In addition, this research is also able to produce factors that can affect the numeracy literacy ability of students. So that an evaluation of learning can be carried out that can improve the numeracy literacy skills of students.

2. Methods

The research method is a scientific method used to obtain data with certain purposes and uses. The scientific method in question is that research activities are made based on scientific characteristics, namely rational, empirical and systematic. Rational means that research activities are carried out in ways that make sense, so that research can be reached by human reasoning. Empirical means that the methods used in the research can be observed by the human senses, in other words, people can observe and know the methods used in the research. While what is meant by systematic is the process used in the research using logical steps.

The data obtained in a study is empirical data, where the data is definitely observed and has a certain character or is commonly referred to as valid. Valid is used to show the accuracy of the data that occurs in real with the data collected so that it can be used for this research. Because getting valid data is not easy, then there is a test of the data to determine the validity of the data. The tests needed to determine the validity of a data are reliability and objectivity testing. In general, if the data is reliable and objective then the data tends to be valid. Reliable data is not necessarily valid, as well as objective data is not necessarily valid. However, reliable and objective data is definitely valid.

The research method used in this research is research with a qualitative approach with descriptive research type. Where qualitative research is used to gain a broader and deeper understanding of the situation to be studied. Data collection techniques used in qualitative research use various data collection techniques in combination or can be called triangulation data collection techniques. Qualitative research can be used to understand the situation experienced by research subjects by means of descriptions in the form of words and language based on observations.

2.1 Object of Research

The object of research is a problem or issue that will be discussed or investigated in a particular study. So in this study, the object of research is the numeracy literacy ability of class XI students of SMA Negeri 16 Semarang. This research was carried out on 2 June – 2 July, 2021. This research was carried out in one of the high schools in Semarang, which was carried out at SMA Negeri 16 Semarang by using classes XI MIPA 2 and XI MIPA 3 for research data collection.

2.2 Population and Sample

Population is a collection of objects or subjects with certain qualities and characteristics that have been determined by researchers to be studied and produce a conclusion. The population is comprehensive and generalized. Population is not only related to people, but also related to objects and related objects. Not only the number of subjects and objects, the population also includes the entirety of the characteristics or properties possessed by subjects and objects. In this study, the population used were mathematics teachers and students of class XI MIPA at SMA Negeri 16 Semarang.

The sample is part of the population. In other words, the sample is part of the number and characteristics possessed by the population. The sample was used because the researcher was not able to use everything in the population, because there were limitations of time and energy. However, the conclusions used from the sample can represent the population. The sample taken must be able to represent the population or can be called a representative sample. The samples used in this study were mathematics teachers who teach in class XI MIPA and students in class XI MIPA at SMA Negeri 16 Semarang.

2.3 Data Source

The first data source is obtained from interviews. Interviews were conducted by interviewing coordinators or members of the curriculum of SMA Negeri 16 Semarang, mathematics teachers in class XI MIPA 3 and several students in class XI MIPA 3. While the second primary data source was obtained from giving tests to students, namely giving AKM standard math questions. In class XI MIPA 3 at SMA Negeri 16 Semarang there are 36 students who will take part in the observation.

2.4 Research Instruments

2.4.1 Interview Guidelines

The questions arranged in the interview guide in this study are broadly adapted to the formulation of the problem that has been prepared. The Outline of questions for conducting interviews with resource persons. Questions can develop according to the conditions that existed during the interview. The following is a grid that will be used in interviews with related sources:

Table 1. Outline of interview guidelines

No.	Problem Formulation
1	How is the numeracy literacy ability of the students so far?
2	Is there a special movement to stabilize or improve students' numeracy literacy skills?
3	How are teachers and participants prepared to face the Minimum Competency Assessment?

(**Source: Researcher Modification**)

2.4.2 Instrument Test

The test instrument used in this study is a written test device. Where the written test is in the form of 30 questions with the Minimum Competency Assessment standard. Because the Minimum Competency Assessment questions are standardized with PISA and TIMSS questions, the questions made for this study also apply level criteria that are adjusted to PISA and TIMSS questions. The questions in this test instrument will be tested first and will also be consulted with the supervising lecturers and mathematics teachers who teach in class XI MIPA 3. The following is the proportion of questions with the Minimum Competency Assessment standard that will be used in this study.

Table 2. Proportion of Minimum Competency Assessment Numerical Questions

a. Content

No.	Content/Domain	Percentage
1.	Number	0
2.	Measurement and Geometry	35 %
3.	Data and Uncertainty	25 %
4.	Algebra	40 %

(**Source: Researcher Modification)**

b. Context

No.	Context	Percentage
1.	Personal	44%
2.	Socio-Cultural	36 %
3.	Scientific	20 %

(**Source: Researcher Modification)**

c. Question Form

No.	Question Form	Percentage
1.	Multiple Choice	8 %
2.	Complex Multiple Choice	33 %
3.	Short Fill	20 %
4.	Description	39 %

(**Source: Researcher Modification)**

2.4.3 Questionnaire

In this research, there were two questionnaires used. The first questionnaire is to analyze the general numeracy literacy ability of students while the second questionnaire is used to determine the factors that

affect the numeracy literacy ability in solving AKM standardized math problems, the following aspects measured that will be used in the questionnaire to retrieve the required data are as follows: following :

1. Questionnaire Numerical Literacy Ability Analysis for Students
    - Knowledge of what numeracy literacy skills are
    - The students' low and high level of numeracy literacy skills
    - Students' ability to analyze and apply basic mathematical concepts
2. Questionnaire of Factors Affecting Numerical Literacy Ability in Working on AKM Questions
    - Physical Aspects (Health)
    - Psychological Aspect
    - Aspects of Student Thinking
    - Aspects of Ability to Analyze and Apply basic mathematical concepts
    - Environmental Aspect
    - Student Learning Aspects

2.5 Data Collection Techniques

Data collection techniques used in this study consisted of interview techniques, data collection through tests in the form of mathematics questions with the Minimum Competency Assessment (AKM) standard and data collection through questionnaires.

In qualitative data collection, the technique used is by conducting interviews, the following is an explanation of data collection techniques by interview that will be used in this study. Interview is a data collection technique to find things that are more in-depth from the sources. This data collection technique is based on the knowledge or personal beliefs of the informants. In this interview activity, it was addressed to the mathematics teacher of class XI MIPA 3. This interview was conducted directly in the lobby of SMA Negeri 16 Semarang while still adhering to health protocols.

In this research, an unstructured interview was used. Unstructured interviews are interviews that are free and not bound by guidelines that have been arranged systematically and coherently. Unstructured interviews in this study still use interview guidelines but the interview guidelines used are only an outline of the formulated problem formulation.

In collecting qualitative data, besides being taken by means of interviews, but also data collection by questionnaires. The data collection in the form of a questionnaire is done using Google Form. The Google Form link is shared through the Whatsapp class group and filled in by students of class XI MIPA 2 and class XI MIPA 3.

Next is the collection of data through the provision of tests. Test technique is data collection by giving test questions or tests to students which will produce data that can measure numeracy literacy skills. This test will be tested first by giving a test to the class that is not used in the research and the questions will also be consulted with the supervisor and mathematics teacher who teaches in class XI MIPA. In addition to obtaining validation by the mathematics teacher in class XI MIPA, a test of mathematics standardized AKM was also conducted in class XI MIPA 1.

2.6 Validity Test Analysis

Questionnaires that have been validated by two validators are one of the teachers who teach Mathematics at SMA Negeri 16 Semarang, namely Dra. AM. Sri Endang Martuti and one of the lecturers of the Mathematics Department at the State University of Semarang, namely Mr. Adi Satrio Ardiansyah, S.Pd., M.Pd. In the results of the validation of the questionnaire, 75% of the questionnaire items on the analysis of the numeracy literacy ability of students were eligible to be used with slight improvements. While the results of the second questionnaire validation resulted in 77% of the questionnaire items on the factor questionnaire that affected the students' numeracy literacy skills in working on AKM standardized Mathematics Problems, which means that the questionnaire is feasible to use with slight improvements.

The second is the results of the validity, reliability, level of difficulty and discriminating power on the AKM standardized Mathematics Problem which has been tested in class XI MIPA 1 with 33 students as respondents. The AKM-standard math test test is carried out online, namely by filling out the Google Form which contains the AKM-standard Math Question and for the access link, it is notified through the class Whatsapp group. After processing the data, it produces the following results:

1. The results of the validity test of the questions processed using the SPSS application resulted in 5 invalid items with the total number of questions used in the test questions was 35 items. The items that are not valid are items 2, 4, 9, 15 and 30. Because the item validity test produces 5 items that are not valid, this study uses 30 items of AKM-standard Mathematics.

2. In the reliability test that has been processed using the SPSS application, Cronbach's Alpha on multiple choice questions is 0.705; Cronbach's Alpha in the short answer questions is 0.751; Cronbach's Alpha on complex multiple choice questions is 0.696 and Cronbach's Alpha on essay questions is 0.725. It can be concluded that each question has Cronbach's Alpha > 0.60 then the question is declared reliable or consistent.
3. In determining the level of difficulty of the AKM standard Mathematics Questions, they are processed using the Excel application. The data processing resulted in 10 items with an easy level of difficulty, 23 items with a moderate level of difficulty and 2 items with a difficult level of difficulty.
4. The discriminating power of AKM-standard Mathematics Questions was processed using the SPSS application which resulted in the distinguishing power of 30 good questions, 1 item was accepted and corrected, 2 items were corrected and 2 items were rejected.

3. Results & Discussions

The research was conducted at SMA Negeri 16 Semarang. The school is located in Mijen District, Semarang City, Central Java. The research was carried out from June 2 to July 2, 2021. The first data collection was conducting interviews with one of the mathematics teachers who teach at SMA Negeri 16 Semarang. In the interview, it outlines the students' numeracy literacy skills. At this stage, interviews were conducted directly in the lobby of SMA Negeri 16 Semarang. The interview took place for 25 minutes and 35 seconds which coincided on Thursday, June 3, 2021.

After the interview was carried out, on June 15, 2021 to be exact, Tuesday, a test was held for students of class XI MIPA 1 at SMA Negeri 16 Semarang. There are several considerations suggested by the tutor so that class XI MIPA 1 becomes the test class for numeracy questions with the Minimum Competency Assessment standard. Class XI MIPA 1 consisted of 36 students and 33 students participated in the test, then the data was processed to analyze its validity and reliability. Because the data is valid and reliable, the research was carried out, namely on Monday to Wednesday, June 21 to June 25, 2021.

In the implementation of the study, researchers took data to answer the formulation of the problem that had been prepared. Data collection was obtained from the distribution of two questionnaires that had been validated by teachers and lecturers, where the first questionnaire collected data to analyze students' knowledge of numeracy literacy skills, while the second questionnaire collected data to determine the factors that influence students' numeracy literacy skills in working on standardized questions of Competency Assessment. Minimum.

In addition to collecting data by distributing the two questionnaires that have been described, data collection is also carried out by giving mathematics questions with the Minimum Competency Assessment standard that have been tested and validated with a civil servant teacher and one of the lecturers at the State University of Semarang. The AKM-standard math test test was carried out in class XI MIPA 1, while the data collection used in the study was carried out in class XI MIPA 2 and XI MIPA 3.

3.1. Analysis of Questionnaire Results Analysis of Numerical Literacy Ability in Students

The questionnaire obtained as many as 54 respondents consisting of students in class XI MIPA 2 and XI MIPA 3. There are 3 aspects used to analyze the numeracy literacy skills of students, namely students' knowledge of numeracy literacy skills, low levels and high literacy skills possessed. by students and students' ability to analyze and apply basic mathematical concepts.

Through an analysis of the numeracy literacy ability of students in class XI MIPA 2 and XI MIPA 3, which contained 54 respondents, it was concluded that 72% of students already knew about literacy skills, 74% of students agreed that students' numeracy literacy skills needed to be improved and 77% of students agree if students are able to analyze and apply basic mathematical concepts.

3.2. Analysis of the Results of Mathematics Problems with Minimum Competency Assessment Standards

The Minimum Competency Assessment Standardized Mathematics Questions used in this study include components in numeracy literacy skills. There are 4 components of numeracy literacy skills, namely applying number concepts and arithmetic operation skills including using fractions, decimals, percents and comparisons, recognizing and using relational patterns, using spatial reasoning as well as using measurements and using statistical information (Han et al, 2017:6). The four components, if associated with

the content of the Minimum Competency Assessment numeracy questions, cover the material on numbers, algebra, geometry and measurement as well as data and uncertainty.

From the explanation above, the researchers made a Minimum Competency Assessment Standardized Mathematics Question Minimum Competency Assessment which was adapted to the four components of numeracy literacy abilities. The following is an explanation of the results of each item according to the components measured to analyze the numeracy literacy skills of students, where there are 30 questions used in this study. The following will give an example of a question that is used to measure numeracy literacy skills that are adjusted to the standard Minimum Competency Assessment questions.

The following is one of the questions that can measure students' ability to apply the concept of numbers and arithmetic operations.

The following is item number 27:

> Yusi wants to buy apples at the supermarket. Yusi was faced with two choices. Yusi's first choice could be to buy the apples per kilogram or she could buy one basket at a time. With the type of apple per kilo and the basket is the same.
>
> 
>
> 
>
> 1 kilogram = 4 pieces = IDR 30,000 1 basket = 10 seeds = IDR 72,000
>
> According to Yusi, buying 1 basket of apples is more efficient than buying 1 kilogram. Is Yusi's statement true? Give your explanation!

Item number 27 is a form of description question with a maximum score if the correct answer is worth 8. Out of 54 students who worked on it resulted in a score of 384. The maximum score for all items is $8 \times 54 = 432$ (if all answered correctly). So the calculation is obtained as follows:

$$(384 : 432) \times 100\% = 89\%$$

If depicted on a continuum, the data obtained are as follows:

So based on data obtained from 54 respondents with 89% of students answering correctly as indicated on the red point which is located in an area close to a very high scale, it can be concluded that students have literacy skills with a very high scale in solving item number 27.

Next is one of the questions used in research to measure students' ability to recognize and use relational patterns.

The following is item number 19:

> One of the processed cow's milk products used by Boyolali residents is cheese making. In cheese making, bacteria play an important role. The bacteria needed to make cheese is Lactobacillus bulgaricus. These bacteria are responsible for converting lactose into lactic acid so that there will be clumping in milk. Suppose that one bacterium divides into 2 every 2.5 minutes. Each result of the division will divide again into 2 bacteria at the same time, and so on. If initially there were 5 bacteria, the number of bacteria after 10 minutes is...
>
> 

Item number 19 is a short form question with a maximum score if the correct answer is worth 2. Out of 54 students who worked on it resulted a score of 58. The maximum score for all items is $2 \times 54 = 108$ (if all answered correctly). So the calculation is obtained as follows:

$$(58 : 108) \times 100\% = 54\%$$

If depicted on a continuum, the data obtained are as follows:

So based on data obtained from 54 respondents with 54% of students answering correctly as indicated on the red point which is located in an area close to a not-high scale, it can be concluded that students have literacy skills with not high scale in solving item number 19.

Next is one of the questions used in research to measure students' ability to use spatial reasoning and measurement

The following is item number 1:

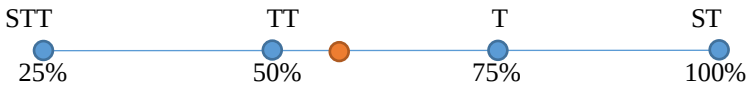
Pak Dimas is one of the owners of the water rides. He wanted to make an imitation of a floating ball. If a ball has a diameter of 4 meters, the area of the material needed to make 1 floating ball is...

A. $2\pi\ m^2$
B. $4\pi\ m^2$
C. $8\pi\ m^2$
D. $16\pi\ m^2$
E. $24\pi\ m^2$

Item number 1 is a form of multiple choice questions with a maximum score if the correct answer is worth 1 and if it is wrong it is worth 0. From 54 students who worked, 31 students answered correctly so that there were 23 students who answered incorrectly. The maximum score for all items is $1 \times 54 = 54$ (if all answered correctly). So the calculation is obtained as follows:

$$(31 : 54) \times 100\% = 57\%$$

If depicted on a continuum, the data obtained are as follows:



So based on the data obtained from 54 respondents with 57% of students answering correctly as indicated in the red point which is located in an area close to a not-high scale, it can be concluded that students have literacy skills with a scale that is not high in solving item number 1.

Next is one of the questions used in research to measure students' abilities in analyzing data and interpreting statistical information

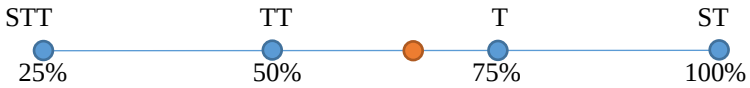
The following is item number 21:

The night market in Juwana is eagerly awaited by the people of Juwana because the night market is one of the entertainments for the people of Juwana. But unfortunately, the night market is only open one month a year. The night market is open every June, that is, every mid-year. During the night market is open, as many as 150,000 residents who visit. What is the average night market visitor per night?

Item number 21 is a short form question with a maximum score if the correct answer is worth 2. Out of 54 students who worked on it resulted a score of 72. The maximum score for all items is $2 \times 54 = 108$ (if all answered correctly). So the calculation is obtained as follows:

$$(72 : 108) \times 100\% = 67\%$$

If depicted on a continuum, the data obtained are as follows:



So based on the data obtained from 54 respondents with 67% of students answering correctly as indicated on the red point which is located in an area close to the high scale, it can be concluded that students have high-scale literacy skills in solving item number 21.

From the results of the research, taking data in working on Minimum Competency Assessment standard math problems, it was found that students in applying the concept of numbers and arithmetic operations obtained a score of 78%, which means that students' numeracy literacy skills are high in applying the concepts of numbers and arithmetic operations. Both students' ability to recognize and use relational patterns obtained a score of 61%, which means it is not high, in other words, numeracy literacy skills in recognizing and using relational patterns are still low. This is the same as students' ability to use partial reasoning and use measurements which only obtained a score of 55%, which means that numeracy literacy skills using partial reasoning and using measurements are still low. While the components of analyzing data and interpreting statistical information obtained 68%, which means that students' numeracy literacy skills are high. So that the final conclusion is that 63% of 54 students of class XI MIPA 2 and XI MIPA 3 have high numeracy literacy skills.

3.3. Analysis of Questionnaire Results Factors Affecting Numerical Literacy Ability in Working on Mathematics Problems with Minimum Competency Assessment Standards (AKM)

The questionnaire obtained as many as 54 respondents consisting of students in class XI MIPA 2 and XI MIPA 3. There are 6 aspects that are used to determine the factors that affect the numeracy literacy ability of students in working on Mathematics Problems with Minimum Competency Assessment Standards (AKM), namely the physical aspect. (Health), psychological aspects, aspects of student thinking, aspects of the ability to analyze and apply basic mathematical concepts, environmental aspects and aspects of student learning.

From taking data through a questionnaire which aims to determine the factors that can affect students' numeracy literacy skills and obtained from the physical aspect (health) 82% of students agree that students can work on AKM standard questions well if they are healthy. The second factor is the psychological aspect, in this aspect 73% agree that psychology is influential in working on AKM standard questions. In terms of students' thinking, 71% is obtained, which means students agree that students' thinking is a factor that can affect numeracy literacy skills in working on AKM questions. The ability factor to analyze and apply basic mathematical concepts to students obtained a score of 77% which means they agree that these abilities can affect numeracy literacy skills in working on AKM standard questions. While the Physical Aspect (Health). One of the external factors that can affect students' numeracy literacy analysis skills is the environmental aspect, where 77% of students agree on this. While in the aspect of learning, students only get 66%, which means students are doubtful that aspects of student learning can affect numeracy literacy skills in working on AKM standard questions. In simple terms, it can be concluded that the factors that can influence numeracy literacy skills in working on AKM standard questions are physical factors (health), psychological

factors, student thinking factors, students' ability factors in analyzing and applying basic mathematical concepts and environmental factors.

4. Conclusion

From the results of interviews with teachers and data processing in the questionnaire analysis of students' numeracy literacy skills, it can be concluded that students are quite good at knowing numeracy literacy skills.

In the results of the data processing of AKM-standard math problems that have been done by students, it is found that 63% of 54 students of class XI MIPA 2 and XI MIPA 3 have high numeracy literacy skills.

From the questionnaire of factors that can influence numeracy literacy skills in working on AKM standard questions, it can be concluded that physical factors (health), psychological factors, students' thinking factors, students' ability factors in analyzing and applying basic mathematical concepts and environmental factors are considered to affect numeracy literacy skills.

Based on the results of the research, discussion and conclusions described above, the authors provide suggestions so that in the future in analyzing the numeracy literacy skills of students and research related to numeracy questions, the Minimum Competency Assessment (AKM) can be better and useful for many people, as follows: some suggestions from researchers for future researchers:

1. This research is expected to be used as an evaluation that numeracy literacy can play an important role in improving the quality of education in Indonesia
2. This research is expected to be used as one of the considerations for planning mathematics learning to improve numeracy literacy skills in solving mathematics problems with Minimum Competency Assessment (AKM) standards
3. In analyzing numeracy literacy skills, it is recommended to dig a lot of journals and previous research in order to gain broader knowledge so that better analysis results are obtained.
4. In making AKM numeration questions, it is more adapted to the context and more recent content so that students can know the implementation of mathematics in everyday life in general. It is also better to look for many references to HOTS, PISA and TIMSS questions so that the questions used can be used in analyzing numeracy literacy skills.
5. It is recommended to explore more insight into numeracy literacy skills in order to find out the factors that can affect students' numeracy literacy skills.

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