

## Numeracy Junior High School Students in Completing AKM Equivalent Questions Reviewed from Adversity Quotient

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### Abstract

*The purpose of this study is to describe the numeracy of junior high school students of climber, camper, and quitter types in solving AKM equivalent problems. This type of research is descriptive qualitative research. The instruments in this study consisted of the main instrument, namely the researcher, and supporting instruments, namely the ARP test, math ability test, AKM equivalent problems, and interview guidelines. This research was conducted at SMPN 32 Surabaya in class VIII-E, and then 3 main subjects representing adversity quotient types were selected. The results of this study found that climber-type students successfully met all numeracy indicators. At the comprehension level, they can analyze information and then represent the data in mathematical form. At the application level, one can design strategies by applying mathematical concepts to solve problems. In addition, at the reasoning level, climber-type students are able to interpret results, draw logical conclusions, and provide strong reasons to support their answers. Meanwhile, camper-type students at the comprehension level can identify information and present it in mathematical form. At the application level, camper-type students can design strategies and apply mathematical concepts. However, at the reasoning level, camper students have not been able to interpret the results of the relationship of information in the problem. Quitter-type students cannot reach higher cognitive levels, especially at the application and reasoning stages. Thus, quitter-type students can only reach the comprehension level, which means understanding information and representing data .*

**Keywords:** Numeracy, Minimum Competency Assessment, Adversity Quotient.

### INTRODUCTION

The current government has create targets in order to prepare the skills of 15 year old students to be able to facing the challenges of the 21st century. According to Katherina & Setianingsih (2022) with various challenges that must be achieved, the government has set AKM as a basic competency assessment required by all students. The 2022 National Assessment according to the Ministry of Education, Culture, Research and Technology (2023) stated that the achievement results of junior high school level are included in the moderate category with 40.63% of students having numeracy competencies above the minimum, up 3.79 from 2021 (36.84%). In addition to the results of the AKM study, other studies also show that the numeracy of the majority of Indonesian students is still relatively low.

Research by Yunita et al. (2020) showed that only 34.04% of students were classified as having high numeracy and 14.89% were classified as having moderate numeracy, while 51.06% were still classified as having low numeracy. Similar findings were obtained in Lestari's research (2022) showing that students

who worked on assessments with AKM numeracy equivalent questions only achieved a score of 18.45. This score is included in the low category because it is below 40. Thus, it is hoped that by completing AKM questions, students' numeracy can be improved.

Numeracy assessment in AKM is reviewed from 3 components, namely cognitive level, content and context. The cognitive level of numeracy in AKM is divided into three levels, namely (1) Understanding (Knowing), questions at the cognitive level of understanding assess students' basic knowledge and understanding of levels, facts, procedures, and concepts. (2) Application (Applying), questions at the application level assess mathematical abilities in applying knowledge and understanding of relations, facts, procedures, concepts and methods in the context of real situations or everyday life to solve problems or answer questions (3) Reasoning, questions at this cognitive reasoning level assess students' reasoning abilities in analyzing information and data, expanding their understanding, and making conclusions that include more complex

contextual situations (Katherina & Setianingsih, 2022).

In the AKM numeracy content consists of numbers, measurement and geometry of data and uncertainty, and algebra. From OECD data (2023) the results of PISA 2022 for uncertainty and data content, Indonesia achieved an average of 363 points, which is still below the average score of other countries. Supported by a study by Paramis et al. (2020) also showed that students have difficulty working on data and uncertainty questions. The study found that only 19% of students managed to answer and complete data and uncertainty questions correctly. Based on this description, it can be concluded that students' ability to solve data and uncertainty questions which are part of the AKM numeracy content still needs more attention. Therefore, the content used in this study is uncertainty and data. However, because the domain of uncertainty and data is feared to expand, restrictions are made on the data and representation subdomains in the minimum competency assessment (AKM).

In line with Kurnia's research (2023) that by limiting the content to the data subdomain and its representation, AKM questions can better measure students' ability to understand how to present simple data. Focusing on data and its representation, the assessment can be more directed at students' basic abilities in processing numerical information. This makes for a more objective evaluation of students' understanding of basic statistical concepts such as collecting, organizing, and presenting data.

The components of AKM numeracy are context. In the study of Sari et al., (2021) it was stated that the use of context in AKM is used to recognize the role of mathematics in everyday life. In Wijaya et al. (2023) the three categories are personal which relates to personal interests; socio-cultural which relates to interests between individuals, culture and societal issues; and scientific which relates to issues, activities, and scientific facts. The context used in AKM is very broad so that the context in this study is limited.

According to research by Sonya et al (2022), the results of the analysis of AKM questions that have been worked on by students show that the average student score on scientific questions is 67.43, while in the personal aspect the average student score is 57.81 and in the socio-cultural aspect the average student score is 53.43. So it can be concluded that the average AKM score in the social context is the lowest average score compared to other contexts.

In line with Rezky et al. (2022) stated that through social context problems can provide good meaning to students that mathematics also comes from a collection of community life. In addition, the four pillars of UNESCO education, namely *learning to know*, *learning to do*, *learning to be*, and *learning to live together*, provide a framework for understanding how education should prepare individuals for social life. The social context in AKM questions is a real manifestation of the four pillars of UNESCO education (Zubaidah, 2017). So in this study the context used is the social context.

Supardi (2013) stated that there are some students who have a way to solve difficulties and there are some students who are reluctant to have a way to solve difficulties and then give up easily. According to Mawardhiyah & Manoy (2018) ability shows how far a person can survive in the face of the difficulties they experience, as well as the ability to overcome difficulties called *Adversity Quotient (AQ)*. Based on the opinion of Mahmud & Pratiwi (2019) students must have the ability to face difficulties in understanding numeracy questions. According to Syamsyiah & Handayani (2023) emphasized that the Adversity Quotient type affects students' numeracy. In line with the opinion of Nurhayati & Fajrianti (2015) found that students with high AQ have better AKM learning outcomes than students with low AQ. This means that students with the Adversity Quotient type have an influence on the AKM numeracy results obtained.

Stoltz stated that there are three types of AQ. Where high AQ is called climber, medium AQ is called camper, and low AQ is called

quitter. Climber is a type of individual who is always enthusiastic about learning, consistently tries, and remains confident when facing difficulties. Camper is someone who does it but does not want to use all their abilities in learning and tends to stop trying when they feel they can't do it. While quitter is a person who gives up easily is a type of student who does not want to try and gives up easily when faced with challenges (Katherina & Setianingsih, 2022). With the grouping of climbers, campers, and quitters, a person can be predicted how capable they are in finding solutions to difficulties.

Based on the explanation above, the researcher is interested in conducting research on Student Numeracy in Solving AKM Equivalent Questions Reviewed from the *Adversity Quotient* which aims to describe the numeracy of climber, camper, and quitter students in solving questions equivalent to the Minimum Competency Assessment at the junior high school level.

**METHOD**

This research uses an approach qualitative to understand phenomenon numeracy student based on Adversity Quotient (AQ) type . The research population consists of from students of class VIII at SMPN 32 Surabaya. The research subjects were obtained through purposive sampling technique , namely election subject to consideration certain . As for the considerations the that is TKM value is at least moderate, ARP score represents AQ types are climber, camper, and quitter, and can also communicate well. In this study there are two instruments . Instruments main that is researchers and instruments Supporter namely ARP ( *Adversity Response Profile*), TKM ( Test Ability Mathematics ), AKM equivalent questions , and also interview guidelines .

collection method used is method tests and interviews . The tests used include test ability math and tests solve AKM equivalent questions on data domain numeracy and uncertainty . Instruments test ability mathematics consists of of 3 questions with data material and its representation in the form

of descriptive questions that are completed in 60 minutes . Questions equivalent to AKM numeracy subdomain geometry consists of from 1 question with social context , cognitive level understanding , application , and reasoning . Before tested instrument has consulted with the lecturer as a validator. Then interviews are used to confirm answer participant students in solving questions equivalent to AKM numeracy and digging more in-depth information .

Test data ability mathematics analyzed by providing score with a range of 0 to 100. After being given scoring obtained three research subjects that represent AQ type with ability mathematics is equivalent (minimum difference) value 5), then given test solve questions equivalent to AKM numeracy . AKM test results are analyzed based on indicator numeracy . As for indicators numeration as in Table 1 below .

Table 1. Validity criteria for metacognitive knowledge instruments based on average scores validator

Cognitive Level	Indicator	Sub Indicators	Code
Understanding ( <i>Knowing</i> )	Analyze information presented and represented in various forms ( graphs , tables , diagrams , etc. )	Analyze overall the information presented .	PH1
		Modeling information obtained from problems into mathematical form	PH2
Applying	Design and implement strategies using concepts mathematics to solve problems	Design strategies to solve problems	PR1
		Using the concept mathematics by processing data.	PR2

Reasoning	Interpreting the results of problem information and take decision by making conclusion	Interpreting the results of connection information available on the problem	PL1
		Make conclusion by explaining reason logically .	PL2

Then, it is done interviews with research subjects to confirm answers and complete the required data. Analysis of interview results through three stages that is starting with data collection , data condensation , data presentation , and data withdrawal. conclusion .

## RESULTS AND DISCUSSION

### Results

The research was conducted on participants students in grade 8 of SMPN 32 Surabaya. There were 3 students who met the criteria as research subjects , namely ability minimum of moderate mathematics equivalent ( maximum difference value 5), the ARP score representing AQ types are climber, camper, and quitter, and can also communicate well. Table 2 below shows research subject

Table 2 Research Subjects

No	Initials	AQ Score	Category	TKM Value	Code
1	NAFM	173	Climber	80	S1
2	SBN	110	Camper	80	S2
3	PVR	92	Quitter	75	S3

### Results of Completing S1 Subject Questions in Completing AKM Equivalent Questions

#### 1) Level Knowing ( Understanding )

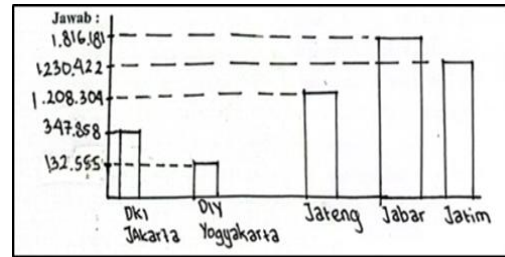


Figure 1. Work Results Subject S1

From the answers in Figure 1 it can be seen that that subject climber can model information obtained into mathematical form namely bar chart . Next, make sure back at the time of the interview . The results of interview , the climber subject can convey again in his own language regarding the information known in the question that the data provided related to the number of junior high school students in several provinces in Java Island, especially East Java, West Java, Central Java, DKI Jakarta, and Yogyakarta. The subject of climber can also be appropriately determine the axes in a bar chart , namely X axis to represent province and the Y axis to represent the number of junior high school students in each province. the .

From figure 1 and also the interview show that subject climber can already analyze information presented and presenting it in various forms (such as graphs , tables , diagrams, and others ) that represent cognitive levels *knowing*.

#### 2) Level Applying ( Application )

The climber subject worked on question 2 , namely related to the relationship between level education with level unemployment presented in the form of a bar chart . Here is the answer subject *climber*.

$$\textcircled{a} \quad 5,10 + 4,79 + 9,31 + 8,15 + 4,70 + 2,56 = 34,77$$

$$34,77 : 6 = 5,795$$

Figure 2. Answer to Question 2.a Subject climber

Viewed from The answer to Figure 2 is that the climber subject uses data processing in mathematics. that is calculate the average of a

data . The formula used in answering question 2 uses the formula find the average namely by adding all the frequencies then dividing by the amount of data.

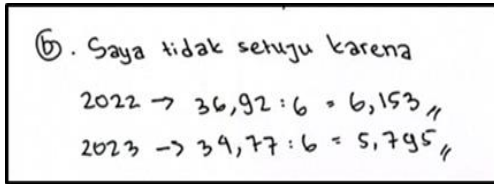


Figure 3. Answer to Question 2.b Subject *climber*

From the answer in Figure 3 to answer question 2b, the climber subject can answer correctly. This is because of subject work with the right steps and calculations . This was validated in the interview , the climber subject was able to design a strategy to answer problems in the question. The strategy is seen from answer students by determining the average per year first then compare the averages of 2022 and 2023. After comparing , the subject take decision to reject opinion on question 2b.

Based on answer written in Figure 4.6, Figure 4.7 and also the excerpt interview so climber subjects can devise strategies to solve problems and can use concepts data processing in mathematics that is appropriate to the cognitive level implementation (*applying*) .

3) Reasoning Level ( Reasoning )

Next, it is presented Another problem with question number 3 is the graph problem. filling Power battery from the cellphone without use and when the cellphone is used. Then CL students answered as follows.

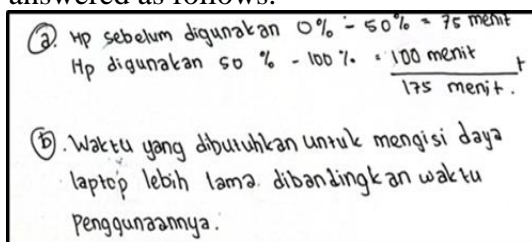


Figure 4. Answer to Question Number 3 Subject *Climber*

Viewed From Figure 4, the climber subject can answer the question correctly. For question 3a , CL students can analyze information on the image graphs used to answer questions. So to answer 3a the climber subject can answer correctly if it is filled in Cell phone battery without use and charging battery from 50-100%. To be continued The answer to question 3b on the subject of climber can make conclusion by explaining reason logically . This is confirmed back to the interview .

Result of interview subject explain more in-depth calculations to determine the time required to charge the battery from 0% to 50% (HP not in use) and from 50% to 100% (HP in use). The final calculation is done the subject climber is true for power 0-50% battery is 75 minutes and when the cellphone is used from Power 50%–100% battery takes 100 minutes .

Based on answer written in Figure 4 and also the excerpt interview so subject climber can interpret the results of connection information on the problem and make conclusion by explaining reason logically according to cognitive level reasoning (*reasoning*).

**Results of Completing S2 Subject Questions in Completing AKM Equivalent Questions**

1) Level Knowing ( Understanding )

test results numeration in solving AKM equivalent questions from subject *camper* and analyzed according to the Ability level indicators numeracy .

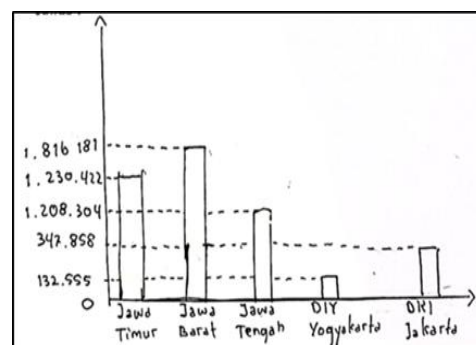


Figure 5. Answer to Question 1 Subject *Camper*

From the answers in Figure 5 it can be seen that that camper subjects can analyze information from table then change it into mathematical form namely bar chart . To visualize from information in the table into a bar chart . Next, make sure back to the interview which mentioned that the data provided related to the number of junior high school students in each province especially Java Island. In addition, the subject can also explain function the X axis and Y axis on the bar chart will be made , namely X axis to represent province and the Y axis to represent the number of students . Ability students in answering these questions show good understanding of the concept base change information into mathematical form .

From the results of the answers in Figure 5 and the interview, it can be seen that that camper subjects can already analyze information presented and presenting it in various forms (such as graphs , tables , diagrams, and others ) that represent cognitive levels *knowing* .

2) *Level Applying ( Application )*

Subject *camper* work on the second question by understanding draft data processing . Implementing concept by analyzing unemployment data based on level education .

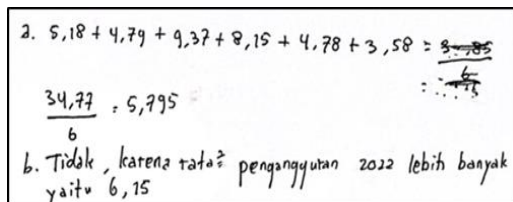


Figure 6. Answer to Question 2 Subject *Camper*

In Figure 6 the data source answers 2a by applying data processing , namely by looking for the average income in 2022. Continuing in 2b can be interesting opinion personal that from workmanship camper subject does not agree statement in the question. More details on the

strategies used by students confirmed at the time of the interview .

Based on interview the Students can process data by determining formula find the average by adding up all the data then divide it by the amount of data. Then students can also design strategies to get solution . When answering 2b the camper subject uses the steps with the initial stage is calculate the average unemployment rate in 2022 and 2023. Furthermore, the results of the average calculation will compared to .

Based on the results of interviews and analysis to answer camper subject , it can be concluded that data sources can design strategies to solve problems and can use concepts data processing in mathematics that is appropriate to the cognitive level implementation (*applying*) .

3) *Reasoning Level ( Reasoning )*

Served Another problem with question number 3 is the graph problem. filling Power battery from the cellphone without use and when the cellphone is used. Then CM students answered as follows.

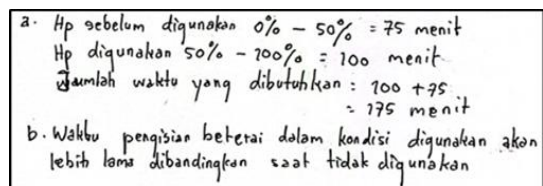


Figure 7. Answer to Question 3 Subject *Camper*

Camper subject answered 2a with the calculations done to determine the filling time . from unused HP namely percentage battery 0% to 50% and when the cellphone is used , namely percentage battery 50% to 100% is also correct. Then, for answer 2b the data source has been able to conclude according to the graph . This confirmed back to the following interview .

Based on interview , camper subject gives detailed explanation of charging time calculation power at each stage, namely 0%-50% and 50%-100%.

However, there are A little inaccuracy in interpretation graph when the device is not in use. The data source states duration charging every 20% capacity battery is 25 minutes which should be 30 minutes based on graph . The data source is also sure will The conclusions drawn are in accordance with the data in the question.

Based on answer written on the answer students and interviews so camper subjects have not been able to interpret the results of connection the information that is on the problem correctly but can make conclusion by explaining reason logically according to cognitive level reasoning (*reasoning*).

**Results of Completing Subject Questions for Doctoral Degree in Completing Questions Equivalent to AKM**

1) *Level Knowing ( Understanding )*

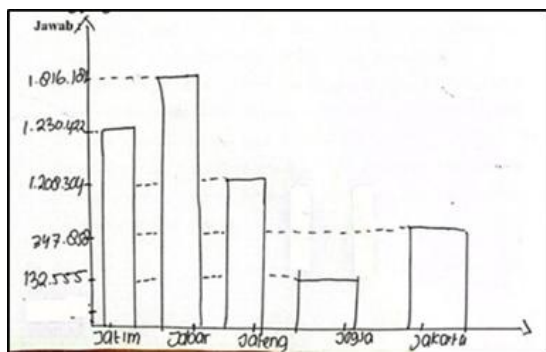


Figure 8. Answer to Question 1 Subject *Quitter*

Based on answer the subject in Figure 8 who has given obtained that quitter subject has understand that the question asks to make a bar chart based on data on the number of junior high school students in several provinces on Java Island. However, the writing provinces in the bar chart are incomplete. ensured back to the interview related to the creation of bar charts , students declare to be able to do it although with some scribbles . This is indicates that student own understanding basics on how to create a bar chart , but still need improved its accuracy . The difficulties experienced at the beginning

diagramming may be caused by factors inaccuracy in transferring data to the diagram.

Based on analysis answer students and interview results , it can be concluded that quitter subject has show quite good ability in analyzing information . Although there are some errors small due to lack of thoroughness , in general student has been able to show understanding basics on how to transform raw data into a mathematical form such as a diagram. This indicates that quitter subject has reach cognitive level *knowing*.

2) *Applying Level ( Understanding )*

quitter subject worked on question 2 , namely related to the relationship between level education with level unemployment presented in the form of a bar chart . Here is the answer subject

$$a. 5,18 + 4,79 + 9,31 + 0,15 + 4,78 + 2,56$$

$$2023 = 34,77 : 6 = 5,795$$

*quitter* .

Figure 9. Answer to Question 2 Subject *Quitter*

Answering question 2 from Figure 9 we get that to answer 2a that the average percentage unemployment in 2023. However, unfortunately The quitter subject did not answer question 2b so it cannot be confirmed How he devise a strategy to gain answer . To confirm from answer student confirmed back to the interview .

Based on the interview above, the quitter subject can process the data, namely find the average by adding up all the data and dividing it by the number of data. While to answer the last question about the comparison a sales data from different years The quitter subject could not answer it correctly. The results showed that quitter subject does not match cognitive level implementation (*applying*) .

3) *Reasoning Level ( Reasoning )*

quitter subject worked on the third question which was presented problem . The problem is that is chart filling Power battery from the cellphone without use and when the cellphone is used. Then the quitter subject answered as follows.

The image shows a handwritten calculation in Indonesian. It starts with 'a. HP sebelum digunakan, 0% - 50% = 75 menit'. Below that, it says 'HP setelah digunakan 50% - 100% : 100 menit'. A horizontal line is drawn under the second line, and the result '175 menit' is written below it.

Figure 10. Answer to Question 3 Subject  
*Quitter*

quitter subject shows understanding to chart filling Power battery , precisely identify connection between charging time and percentage charged power . Then, through the interview to quitter subject known lack of understanding student to draft filling Power battery mobile phone . When asked further about the calculations , the student realize existence error small and unable to answer correctly. In addition, quitter subjects are unable to make conclusion by explaining reason logically because it does not answer question 3b. Therefore , it can be stated that quitter subject does not meet indicator cognitive reasoning (*reasoning*).

## Discussion

### *Numeracy Student Climber Type*

Based on the results and analysis of numeracy data in solving AKM equivalent questions and interviews as a whole , it can be seen that at the cognitive level *knowing* ( understanding ), subjects with the AQ climber type can analyze information presented and presenting it in various forms (such as graphs , tables , diagrams, and others ). This can be seen in the interview The subject can explain in his own words the information in the question even though it is on the answer sheet. answer students do not mention known information .

In addition, when representing information into mathematical form subject easily answer without any constraints . This is in line with the research results from Syamsyiah & Handayani (2023) during the problem formulation process , can formulate

the problems presented in the questions by writing the information provided and the questions are clear and accurate as well as present it in mathematical form .

At the cognitive level *applying* ( application ), subjects with the Adversity Quotient *climber* type can design and implement strategies using concepts mathematics to solve problems. The strategy was conveyed very well through the interview. that subject create a strategy by calculating the annual average moreover first , then compared between those averages to get answer in which year the average sales were greater. The subject can also explain how to calculate the average by add up all over frequency of data divided by the amount of data. This is in line with the research results from Nilasari & Anggreini (2019) stated that that subject Climber is able design and implement strategies to find solution problem solving using formulas .

At the cognitive level *reasoning* , subjects with the AQ *climber* type can interpret the results of problem information and take decision by making conclusion . In the interview and also the sheet answer subject answer the whole question. The subject can interpret graphs and additional statements to interpret the results. In the interview clearly subject explain connection from information obtained namely by answering the total time from interpretation of time and percentage battery in the first condition (HP is not used) and when the HP is used which is presented in the graph . From the relationship the the subject can make conclusion by explaining reasons logically and reasonably . This is in line with the statement from Pardosi (2022) states that at the stage of interpreting The subject climber can interpret the results obtained .

### *Numeracy Student Camper Type*

Based on the results and analysis of test data Numeracy in solving AKM equivalent questions and the interview as a whole can be known that at the cognitive level ability *knowing* ( understanding ), subjects with the AQ *camper* type can analyze information presented and presenting it in various forms



(such as graphs , tables , diagrams, and others ). This can be seen in the interview that subject explain what is known from the information presented in the question with its own language , namely data on junior high school students on Java Island. This in line with research from Gaffar et al. (2021) that camper students are able identify the existence of the problem in the question properly and can be stated what is known in the question in its own language .

At the cognitive level *applying* ( application ), subjects with the AQ *camper* type can design and implement strategies using concepts mathematics to solve problems. The strategy in question seen from interview Where the subject can explain the steps required to solve the problem, by identifying information and then look for the average and compare data. So as to achieve solution . Not only that concept the mathematics used by the subject is seen on the sheet answers and also interviews that show that the subject can explain a way or step to find the average and be consistent in each step calculations . As in the research by Dewi (2021) which states that one of the indicators fulfilled by students Camper type , namely being able to write or explain the strategy that will be used to solve the problem.

While at the cognitive level *reasoning* , subjects with the AQ *camper* type are not yet able to interpret the results of connection the information that is on the problem correctly but can make conclusion by explaining reason logically . This is because subject during interview mention duration filling Power battery when not in use every 20% capacity battery is 25 minutes , even though should be 30 minutes based on graph . So there is A little inaccuracy in interpretation graphs when the device is not in use. However , the subject can compose logical arguments to support conclusion . This indicates that subject camper type still need increase ability to analyze in -depth information before interesting conclusion . This is in line with Dewi's opinion (2021) that Students with the camper type tend to feel satisfied so less careful in using skills computing to search final answer .

### ***Numeracy Student Quitter Type***

At the cognitive level of knowing ( understanding ), subjects with the AQ quitter type can analyze information presented and present it in various forms (such as graphs , tables , diagrams, and others ). Based on transcript interview , subjects with the AQ quitter type have show ability cognitive good *knowing* . Although at first feel difficulty Because many numbers, able to analyze information given in the question, namely the number of junior high school students in each province . Furthermore, the subject succeed represent the data in the form of a bar chart . According to research by Wulandari et al. (2024) that quitter type can only understand information and explain what is known in the question.

At the cognitive level *applying* ( application ), subjects with the AQ quitter type cannot design and implement strategies using concepts mathematics to solve problems. Seen in the transcript interview that when asked to explain method devise a strategy, the subject is only capable of mention steps calculation simple without any planning . On the sheet answer the subject also does not capable answer the question in 2b so that it is not visible that subjects with quitter type capable to design steps to answer more complex questions . From failure subject quitter type solves problems in line with their opinions from Hofifah et al. (2023) stated that that student low quitter type tend easy give up and have nothing motivation to solve the problems they face , they choose to give up .

Furthermore, the subject is unable to fulfill cognitive level indicator *reasoning* ( reasoning ) interpreting the results of connection the information on the problem is correct and cannot make conclusion by explaining reason logically . This can be seen when answering questions on the worksheet. answer subject own good understanding of chart filling Power battery . However, this different seen during the interview , the subject experience error while calculating charging time Power battery with the condition of the HP being used. subject state that when the power The battery is charged under the

condition of being used at a battery data percentage of 50% to 100% , it takes 75 minutes. from the result of multiplying 5 x 20 minutes . As a result , the subject cannot make logical and relevant conclusions to the questions asked . This is in line with the opinion Pribadi et al. (2023) namely quitter subject can say that the answer makes sense , but it doesn't explain the reason . The quitter subject feels difficult to dig information used to check truth statement , so it is less appropriate to provide interpretation .

In the discussion it is clearly seen There is differences in each type of Adversity Quotient when working on AKM equivalent questions . Differences summarized in the following table

Table 3. Differences Numeracy according to Adversity Quotient type

Cognitive Level	Numeracy Sub-Indicator	Climber	Camper	Quitter
Understanding ( <i>Knowing</i> )	Identifying overall the information presented .	√	√	√
	Modeling information obtained from problems into mathematical form .	√	√	√
Applying	Design a strategy to solve problem	√	-	-
	Using the concept data processing			

	in mathematics .	√	√	√
Reasoning	Interpreting the results of connection information contained in the problem .	√	√	-
	Make conclusion by explaining reason logically	√	-	-

## CONCLUSION

Based on the research results, it is concluded that at the level of understanding , students type *climber* can analyze information and then represent the data into mathematical form . At the application level , students *climber* designing strategies by implementing data processing in solving problems. Moreover , at the reasoning level , students type *climber* can interpret the results, draw logical conclusion , and provide strong reasons to support their answers . While Student type *camper* fulfill two of overall indicators . Only at the level of understanding , students can identify information and can represent it in mathematical form . At the application level , students *Campers* can also design strategies and implement them. draft mathematics to solve problems. However, at the reasoning level , students *camper* has not met research indicators due to there is inaccuracy in calculating when the cellphone is not in use. Finally, students type *quitter* just fulfills One indicator namely at the level of understanding

students can identify information and represent data. While at the application level and reasoning level, students' quitter type not successful calculate and answer correctly.

## SUGGESTION

Based on the results of this study, researchers provide suggestions to mathematics teachers to implement approach more differentiated learning by paying attention to students' adversity quotient level. In addition, it should be Further research is conducted with other contexts, content and cognitive levels of AKM questions so that we can obtain more comprehensive research findings on numeracy 8th grade junior high school students.

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