



## Exploration of Students' Mathematical Ability Level: A Review of Adversity Quotient Types

Johannes Gultom<sup>1</sup>, Mathilda Susanti<sup>2</sup>, Hadi Nur Rahman<sup>3</sup>

<sup>1,2,3</sup> Department of Mathematics Education, Universitas Negeri Yogyakarta, Indonesia

ARTICLE INFO	ABSTRACT
<b>Published Online:</b> 28 October 2025	This study explores students' mathematical abilities by reviewing the type of students' adversity quotient. This research was conducted using a literature study research method with data sources derived from journals or relevant research with the requirements set as data sources, namely Sinta or Scopus-indexed journals from 2019 - 2024. The research results showed that students with the climber type have better mathematical ability than students with the quitter and camper types. This happens because of the different efforts made by students of each type in solving and overcoming each problem presented. Students with the quitter type at the math ability level are only able to understand and determine strategies that can be used to overcome difficulties. However, it cannot be done in its application. Students with the camper type at the mathematics ability level are able to enter the completion stage. However, students with this type often experience errors in the stages of completion. Finally, students with the climber type fulfilled all indicators of the mathematical abilities explored. However, sometimes, some students with this type experience failure in coming up with new alternative ideas that correspond to the re-examination indicator.
<b>Corresponding Author:</b> Johannes Gultom	
<b>KEYWORDS:</b> Math Skills, Adversity Quotient Type, Literature Review	

### I. INTRODUCTION

The main focus in observing the quality of human resources (HR) today is education. Education is one of the factors that can improve the quality of human resources with a review of improvements in a person's skills and behavior. In its implementation, education can change the mindset of human resources in teaching and knowledge efforts to achieve the specified quality (Astuti & Aripin, 2022). This corresponds to the formal meaning of education, which is inseparable from the objectives of education, which must be achieved and used as a benchmark for successful implementation. Thus, quality human resources will be created (Abidyani et al., 2019).

In formal education, mathematics is a discipline continuously studied by everyone at every level of education. It is an obligation for students to learn it (Triana & Afri, 2023). Therefore, the meaning of mathematics learning by students and teachers is significant. By paying attention to the learning objectives of mathematics per NCTM (2000), students are expected to master the ability to understand, solve, think, and find the right solution for each problem presented. Not just knowing the formula but being

able to interpret every math learning that is done (Annikmah et al., 2020). Achieving learning objectives, namely mastery of mathematical abilities by students, is very important. This is in line with the perspective in interpreting education. Teaching is an activity of transferring knowledge to students so that these students can understand them. Quality education is education that can bring students to the specified learning objectives, namely students' mathematical abilities in learning mathematics by teachers (Astuti & Aripin, 2022).

The facts in the field are based on teaching experience and the suitability of relevant research data sources, and students' mathematics skills are currently in the low category. This is supported by the level of student mastery in mathematics on the national exam as well as the achievements of Indonesian students on the PISA and TIMSS assessments. The current task of Indonesian education, especially in mathematics, is still very much. This is because even the most basic level of mathematical ability is still in the low category. Thus, it is necessary to make continuous improvements based on the category of problems that cause it. The low level of students'

## “Exploration of Students’ Mathematical Ability Level: A Review of Adversity Quotient Types”

mathematics ability is partly due to students' unpreparedness in overcoming the difficulties they experience in learning mathematics. Stereotypes about mathematics make students unwilling to learn mathematics. Therefore, it is a concern how effective students are in learning that is set to improve math skills. Each student in math learning has a different response when faced with gamification-based learning and goal-directed learning. The change in students' interest in mathematics rapidly changes for students who do not like math. So, eventually, the idea of math as a problematic subject becomes a supporting force for the decline of students' mathematical abilities. According to Siswanto et al. (2024), the student's response is referred to as the adversity quotient.

According to Nilasari and Anggreini (2019), many students experience failure in their mathematical abilities not due to emotional intelligence and knowledge but rather the inability of students to overcome the difficulties they face in mathematics. The Adversity Quotient is a student's fighting power that reflects a person's intelligence in facing and overcoming difficulties. In other words, as much as possible, the difficulties faced are used as challenges that must be resolved (Merianah, 2019). The response of high fighting power by students provides the achievement of student quality in mathematics. However, due to the diversity of challenges, each student can achieve different mathematics abilities. Students with higher adversity quotient will be able to achieve goals faster than other students. According to Slotz (2000), the adversity quotient is classified into three types that correspond to how students view problems: quitters, campers, and climbers. By looking at the way students deal with problems and relating them to learning mathematics, it can be seen that students with the type of quitters are students who have determined that mathematics is complex learning and will always be difficult, so any motivation given does not affect students' interest and ability in learning mathematics. One level above, students with the campers type are students who have the intention and desire to be able to understand math learning. However, it is still at a particular stage or on material students feel is easy to understand and learn. The highest level is students with the type of climbers, where students with this type will always focus and stay on the goals to be achieved, namely the achievement of mathematical abilities (Lestari & Juandi, 2023).

The achievement of students in the learning objectives set and obtained by students during learning depends on the attitude of students in overcoming their difficulties. However, it needs to be known whether the students' mathematics ability level also aligns with this (Purwosetiyono et al., 2022). Therefore, this prompted the researcher to explore the students' level of mathematical ability by reviewing the type of adversity quotient possessed by these students.

## II. RESEARCH METHOD

This research was conducted using the literature review method. The use of this literature study method is very appropriate. The objectives are to explore students' mathematical abilities by reviewing the types of students according to the adversity quotient. Research with literature study is data collection based on a person's perspective and understanding of each interrelated theory from various literatures and following the theory to be used (Adlini et al., 2022). The stages carried out by researchers in this literature study research correspond to the opinion of Sari and Asmendri (2020) by collecting the necessary data sourced from journals and previous research that has been done. This study's data sources are derived from journals and other sources and are limited to 2019 - 2024, with Sinta or Scopus indexed. The data sources obtained by researchers based on construction carried out through Google Scholar, Semantic Scholar, and Scopus with the help of Publish or Perish are 31 journals. The data collected based on the literature study activities carried out will go through an in-depth analysis stage that will suit the expected needs and support the ideas needed in the research conducted

## III. RESEARCH RESULT AND DISCUSSION

The level of students' mathematical abilities in learning in terms of adversity quotient type was explored by reviewing several relevant data sources. This study obtained and analyzed data to see students' mathematics abilities in the quitter, camper, and climber types. In addition, it will also examine what abilities meet the qualifications of these types of students. Based on the theoretical study, the adversity quotient is the fighting power carried out by students in overcoming the problems they face, which, in this case, relates to the math problems presented. Therefore, it can be understood that each level of student education has a different difficulty level. Thus, each type of adversity quotient possessed by students at different levels is also considered different regarding the mathematical abilities to be achieved. In addition, differences in the content taught or learned by students in mathematics learning also cause different difficulties. Thus, students' level of adversity quotient in solving content is also different. Based on this, data sources are presented and reviewed to explore students' mathematics abilities with a review of adversity quotient types by considering the level of education and material content presented in relevant research.

**Table 1. Characteristics of Data Sources**

Characteristics	Description
Education Level	Elementary school = 1, junior high school = 18, high school / vocational school = 6, university student = 3, not mentioned = 3
Content	Quadratic Functions = 1, SPLTV = 1, PISA = 2, Rows and Rows = 1, SPLDV

## “Exploration of Students’ Mathematical Ability Level: A Review of Adversity Quotient Types”

	= 1, Number Patterns = 2, Polynomials = 1, Flat Sided Spaces = 1, Social Arithmetic = 2, Ratio = 1, Logarithms = 1, Line Equations = 1, Cubes and Blocks = 1, Triangles and Quadrilaterals = 1, PLSV = 2, Geometry = 1, Not mentioned = 10.
<b>Math Skills</b>	Concept Understanding = 2, Problem Solving = 16, Mathematical Literacy = 2, Critical Thinking = 4, Creative Thinking = 2, Mathematical Connections = 3, Spatial = 1, Mathematical Reasoning = 2, HOTS = 2

The exploratory study of students' mathematics ability levels in this study was carried out by considering each type of adversity quotient, both for the quitter, camper, and climber types.

### Exploration of students' mathematics ability level in terms of quitter type

Quitters are students who give up easily when faced with a problem. However, students with this type also have mathematical learning abilities. Purwanto (2020) stated that students with the quitter type can understand the problems presented and formulate strategies to solve the problems presented. This is in line with Aini and Mukhlis (2020); students have yet to be able to apply the strategies that should be used for the right results and have not been able to re-examine each stage carried out to determine whether it is correct or still wrong. In solving the math problems given, students with this type also seem to be to the point in solving or not paying attention to small things that become steps that can help these students solve them. Abidyani et al. (2019) stated that students with this type are less accustomed to re-examining a solution for the right results, in contrast to research conducted by Baharullah et al. (2022), where students only understand the problem but have not been able to plan the strategies used appropriately. Thus, the next step must be fulfilled. Based on this, the mathematical ability of quitter students in problem-solving ability is only able at the stage of understanding the problem and formulating the strategy to be used.

Furthermore, based on PISA content integrated with mathematical literacy skills, students with this type have a very minimal level of ability and are controlled by doubt. Students with this type can answer the questions given correctly. However, they cannot provide logical reasons to support their answers (level 1). In addition, in the formulation stage, students need quite a long time to understand and retell the meaning of the questions given clearly (levels 2 and 5). Students with this type are considered less thorough in answering the problems given (level 3). They cannot apply the correct algorithm to solve the problem (level 4). Based on this, the level of mathematical ability of quitter students in mathematical

literacy is only able to solve PISA problems up to level 4 with a record of difficulty understanding, formulating, and taking a long time (Nilasari & Anggreini, 2019). This is in line with Adam et al. (2022), who stated that students with this type can only solve problems by formulating the aspects needed to solve them. However, inaccuracy occurs in the process of applying and reinterpreting. This is because students have yet to be able to reasonably explain the reasons for the problems presented in the real-world context. Based on this, the level of mathematical ability of quitter students in mathematical literacy is only able to formulate.

Exploration of students' mathematical abilities in this type is also reviewed based on their critical thinking skills. According to research conducted by Astiantari et al. (2022), students with this type can only solve problems based on focus and reason criteria. Students can only identify and provide logical reasons, not the desired scheme. This happens because students with this type feel they need clarification when they provide the right solution to the problem given. This is in line with the research of Siswanto et al. (2024), which states that students with this type are less able to think of appropriate and appropriate solutions because they easily give up on their inability. Based on this, quitter students' mathematical ability level in critical thinking skills is only able at the stages of identifying and providing logical reasons.

Critical thinking and creative thinking skills are part of high-level thinking skills, which, in their implementation, require in-depth thinking and solving steps compared to other mathematical abilities. Research conducted by Purwanto (2024) and Manazila et al. (2022) stated that students with this type were only able to fulfill the fluency criteria but were not able to fulfill the indicators of creative thinking ability, which requires students to be able to provide answers by not using instrumental understanding and not focusing on one solution step. This is in line with the research of Anwar et al. (2023), which states that the higher-order thinking ability of students in this type still needs to be fulfilled. This is because students of this type have yet to understand every concept used to solve the problems given. Based on this, students with the quitter type have yet to be able to fulfill mathematical abilities in creative thinking and higher-order thinking.

Students' ability to reason in mathematical solutions is also needed. According to Purwosetiyono et al. (2022), students with this type could only fulfill the indicators of making conjectures and performing mathematical manipulations. Students with this type are viewed from the level of mathematical reasoning, only able to mention every piece of information needed from the problem and model every problem presented in mathematical expressions, and they cannot proceed to the completion stage. This mathematical reasoning ability is theoretically related to students' spatial abilities. Nurhikmah et al. (2023) stated that students' ability to visualize mathematics into objects could

be better. Students have yet to build good mental knowledge, mention appropriate information, and provide original answers when solving problems with an important note that the given problem is completed. Based on this, students with this type of quitter can only identify the meaning of the problem.

The most basic mathematical ability that supports every other mathematical ability is understanding mathematical concepts. Students with this type are still categorized at a low level of concept understanding ability, with the level of achievement possessed only at the level of restatement with their own understanding and forming concept patterns that are part and not part of what they learn (Triana & Afri, 2023). This makes the understanding ability of students in this type still instrumental understanding (Mefiana et al., 2023). The low level of basic understanding by students of this type also supports the mathematical connection skills these students possess. Students with this type need help to relate existing concepts to the problem-solving they want to do (Supano et al. 2024 & Hidayati et al. 2023). Based on this, students with this type of quitter can only state the concepts learned instrumentally by imitating the meaning explained by the teacher in learning.

Based on the exploration of the level of students' mathematical abilities based on the study conducted on students with the quitter type, it is obtained that the level of mathematical ability for each mathematics ability studied only reaches the stage of understanding what is presented in the problem by presenting it in a mathematical model and knowing the steps that must be used. However, they have yet to be able to apply these steps. So, they prefer to answer by default without thinking profoundly and do not re-examine the steps proposed to determine whether they are correct for the expected solution.

### **Exploration of students' math ability level in terms of camper-type**

Regarding the adversity quotient, students with the camper type intend to try to solve the math problems presented, but only at their level of understanding. In solving a problem presented, Purwanto (2024) stated that students with this camper type have a better ability than the quitter type to understand the problem presented and can formulate strategies to solve the problem presented. Students with this type have also been able to use the chosen strategy in the problem-solving process. However, sometimes, they still have errors in the final results. This aligns with Aini and Mukhlis (2020), who stated that students with this type can solve problems but still need to utilize their potential fully. Students with this type also never do the activity of checking back on the steps they apply, whether they are appropriate or not. Thus, they often experience failure in finding the correct answer. Abidyani et al. (2019) and Baharullah et al. (2022) also stated that students of this type are less accustomed to re-examining solutions for the right results. Based on this, the

mathematical ability of camper students in problem-solving ability can understand, plan, and carry out problem-solving activities well.

Furthermore, based on PISA content integrated with mathematical literacy skills, students with this type have a relatively good level of ability and are confident in the reasons given but often experience incorrect or less precise interpretations than expected. Students with this type can answer the questions correctly. However, they cannot provide logical reasons to support their answers (level 1). In addition, in the formulation stage, students determine the correct answer. However, they still need to be more confident in analyzing the problem presented in the solution (level 2). Students with this type are considered very good at applying the right concepts in solving problems, although based on their understanding briefly (level 3). They can apply the algorithm that must be used, although it is still considered less detailed, so the results obtained could be more precise (level 4 and level 5).

In contrast to the quitter type, students with this type have tried to solve the problem at level 6, but the resulting solution must be corrected. However, students with this type still try to solve it (Nilasari & Anggreini, 2019). This is in line with Adam et al. (2022), who stated that students with this type were good enough at solving the problems presented so they could solve the problem up to formulating and applying the aspects needed in the solution. However, some of the reasons presented still need to be more logical. They have led to reasons that are in accordance with the real-world context. Based on this, the mathematical ability of camper students in mathematical literacy can reach the stage of applying concepts for the expected solution.

Exploration of students' mathematical abilities in this type is also reviewed based on their critical thinking skills. Research conducted by Astiantari et al. (2022) shows that students with this type of problem can solve problems based on the criteria of focus, reason, inference, situation, and clarity. However, a challenge for students with this type is not being able to double-check whether the answer is correct or still has an error. Students with this type often need help with calculations for the solutions they have made. Students with this type can identify, provide logical reasons, and use the information given appropriately, but the results obtained often need to be corrected in the desired scheme. This happens because students with this type are still looking for other alternatives that can be used to solve problems. This is in line with the research of Siswanto et al. (2024), which states that students with this type are already classified as good at solving problems and applying concepts that should be used. It is just that they need to be more careful in the calculations they make. Based on this, the level of mathematical ability of camper students in critical thinking skills has fulfilled five indicators out of 6 indicators that should be fulfilled. Students with this type of problem need help finding alternative solutions to recheck the answer.

Critical thinking and creative thinking skills are part of high-level thinking skills, which, in their implementation, require in-depth thinking and solving steps compared to other mathematical abilities. Research conducted by Purwanto (2024) and Manazila et al. (2022) stated that students with this type have fulfilled the criteria of flexibility, fluency, and novelty. However, sometimes, students of this type need to pay more attention to fulfilling the expected criteria. The creative thinking ability of students with this type is suitable. However, in the fluency criterion, students often only write down one solution they feel most suits the problem presented. However, students of this type can provide solutions in two different ways to reach a solution. The understanding of students in this type is relational by utilizing their understanding of interconnected concepts. This is in line with the research of Anwar et al. (2023), which states that the higher-order thinking ability of students of this type is to choose a plan and implement it smoothly and correctly with prior knowledge. This is because students of this type understand each concept used in solving the problems. Based on this, students with camper type are good enough at fulfilling mathematical abilities in creative thinking and higher-order thinking.

Students' ability to reason in mathematical solutions is also needed. Purwosetiyono et al. (2022) stated that students with this type have been able to make conjectures, perform mathematical manipulations, determine patterns, and conclude. Students with this type of mathematical reasoning do problem-solving with work that needs to be maximally done. This is due to external factors that hinder the continuation of the solution carried out by students. Thus, the problem-solving activities that are carried out still need to be more optimal. In line with this, Nurhikmah et al. (2023) also stated that students' ability to visualize mathematics into objects is quite good. This is because students are already capable of visualization activities. However, more is needed to build mental knowledge. Thus, direction is still required to build the appropriate scheme. Based on this, students with this camper type have been able to carry out each stage of the solution well according to the existing indicators, but still need to be more optimal in their work.

The most basic mathematical ability that supports every other mathematical ability is understanding mathematical concepts. Students with this type already have an excellent ability to understand mathematical concepts with a level of achievement that is almost able to fulfill all indicators in understanding mathematical concepts. (Triana and Afri, 2023). This makes the understanding ability of students in this type already in relational understanding (Mefiana et al., 2023). Because the basic level of understanding students possess is good enough, students with this type are also good enough at linking existing concepts to the problem-solving they want to do (Supano et

al. 2024 & Hidayati et al. 2023). Based on this, students with this camper type have been able to fulfill the relational level of ability with the construction of the connection of each concept that is good. What is wrong with students with this type of disorder is the limited fighting power to solve problems well; when they can solve the problems given, students with this type immediately move on to the next problem without checking the work they have done.

Based on the exploration of students' mathematical ability levels based on the study conducted on students with camper type, it was found that the level of mathematical ability had been built and constructed quite well. However, the alternatives that can be considered are still very limited or only on some content that is more superficial. So, students at this stage are more often fixated on the results and steps they know or by utilizing the understanding they have that they build relationally. Therefore, it is a task for students of this type to pay more attention to every step of their solution. Thus, the solutions with the right concepts and strategies produce appropriate results.

### **Exploration of students' mathematical ability level in terms of climber type**

The climber type is a student with an excellent ability to overcome the problems presented in learning. Students with this type have a high level of ability compared to other adversity quotient types. In terms of adversity quotient, students with this type can survive and keep trying until the solution is correct and precise.

Theoretically, students with this climber type have better mathematical ability than others. In solving a problem presented, Purwanto (2024) states that students with this type of climber can fulfill all the indicators that must be met for a good level of problem-solving ability. Thus, the final result was produced as expected. This aligns with Aini and Mukhlis (2020), who stated that students with this type perform well in each expected stage. However, they are sometimes considered less precise when re-examining the alternatives. Abidyani et al. (2019) and Baharullah et al. (2022) also stated that Students with this type could present systematic and logical solutions compared to students with other types. Based on this, the level of mathematical ability of climber students in problem-solving ability is able to understand, plan, and carry out problem-solving activities well and re-examine with other alternatives even though sometimes there are less appropriate alternatives.

Furthermore, based on PISA content integrated with mathematical literacy skills, students with this type have a good ability level and are confident in the reasons given. Students with this type can solve each problem presented at level 1 - level 6. However, students with this type were initially considered needing help applying existing algorithms. However, they always try so that they can solve the problem at level 6. Students with this type can formulate, interpret, and apply well and have logical reasons explaining the steps taken in the solution (Nilasari &

Anggreini, 2019). This is in line with Adam et al. (2022), which states that students with this type can know what they have to do, what strategies they have to use, and why the strategy is used in solving it according to the real-world context. Based on this, the level of mathematical ability of camper students in mathematical literacy skills has fulfilled every indicator, but it takes a long time to understand everything that will be done.

Exploration of students' mathematical abilities in this type is also reviewed based on their critical thinking skills. Astiantari et al. (2022) research shows that students with this type of problem can solve problems based on the criteria of focus, reason, inference, situation, clarity, and overview. What distinguishes students with this type from the camper type is that they double-check the answers they have done and select other alternative answers when checking. Students with this type can identify and provide logical reasons, use the information provided appropriately, and follow the desired scheme. Based on this, climber students' mathematical ability level in critical thinking skills has fulfilled all the indicators that qualify this ability.

Higher-order thinking skills are currently crucial to 21st-century skills. Critical thinking and creative thinking skills are part of higher-order thinking skills, which, in their implementation, require in-depth thinking and solving steps compared to other mathematical skills. Research conducted by Purwanto (2024) and Manazila et al. (2022) stated that students with this type have fulfilled the criteria of flexibility, fluency, and novelty. This is in line with the research of Anwar et al. (2023), which states that the higher-order thinking ability of students of this type is to choose a plan and implement it smoothly and correctly with prior knowledge. Students with this type of problem have a great enthusiasm for solving each problem and a great sense of struggle to find the appropriate solution. Students with this type already have an outstanding knowledge construction. So, when faced with problems that require maximum thinking ability, students with this type can solve them; however, with a short time to find the right solution; based on this, students with camper type are excellent and robust in fulfilling mathematical abilities in creative thinking and higher-order thinking.

In line with the achievement of high-level abilities by students of this type, other abilities that become mathematical abilities can be achieved well. Each indicator that composes the mathematical ability is interrelated and mutually supportive. Therefore, students with this type have been able to fulfill every indicator contained in mathematical reasoning (Purwosetiyono et al. 2022 and Nurhikmah et al. 2023), understanding mathematical concepts, which is an essential ability that must be possessed by students (Triana and Afri, 2023 and Mefiana et al. 2023) and mathematical connection skills (Supano et al. 2024 & Hidayati, et al. 2023). However, what challenges students of this type is that sometimes students of this type

need help to come up with an alternative answer to check the correctness of the steps they have taken.

Based on the exploration of students' mathematical ability levels based on studies conducted on students with the climber type, it was found that the level of mathematical ability was well-built and constructed. However, several studies show that students with this type are sometimes less able to provide other alternatives in re-examination activities. However, in general, students of this type have used relational understanding towards logical understanding. This is because the fighting power of students in this type is very supportive of the progress of the level of ability possessed by students in learning.

Based on the exploration conducted by reviewing students' mathematical abilities on the review of students' adversity quotient types, it is found that each type has a different fulfillment for each fighting power given by students. Observing the fulfillment of indicators for each student's mathematical ability that is considered based on the type of adversity quotient, it is necessary to consider the level of education and content that is part of the assessment. This is because each content studied has a different difficulty level, thus providing different fighting power to overcome it. This is obtained based on the exploration conducted by researchers in the obstacles and challenges faced by each type in their mathematical abilities. Several studies provide different constraints and challenges, but paying attention to the content studied is easier to understand than other studies. However, the exciting thing that researchers found was that students with the lowest adversity quotient type did not ensure that these students did not have mathematical abilities. These students also have mathematical abilities that only understand and can know what strategies to use. Although it has yet to reach the application or if it reaches, it still produces less precise answers. So, based on this, at least 2 of the five indicators that must be met in a mathematical ability can be met by students with the lowest type of adversity quotient. Based on research conducted by (Kartika et al., 2021; Merianah, 2019; Annikmah et al., 2020; Azizah, 2020; Nurfitriyanti et al., 2020; Rahmayantri & Priatna, 2022; Lestari et al., 2022; Bellyana & Musrikah, 2024; Alzubair et al., 2024; Rusmania et al., 2023; Awalia & Saputri, 2023; Rizalno & Purwanto, 2022; Yuniara et al., 2023; Ramini & Setyadi, 2021) found that there is a significant influence between adversity quotient possessed by students and existing mathematical abilities. Students with high adversity quotients positively have good math skills and good indicator fulfillment, and vice versa. Thus, the achievement of a mathematical ability by students is more than just fixated on how the teacher carries out learning in the classroom. However, it also depends on students' curiosity and how they overcome their difficulties in learning mathematics.

#### IV. CONCLUSION

Based on literature research conducted to explore students' mathematical abilities with a review of students' adversity quotient in learning mathematics, it is found that students with the climber type have mathematical abilities that can be entirely fulfilled adequately based on the indicators that must be met. Students with fighting power can survive and struggle with every difficulty, which significantly impacts their math problem-solving activities compared to the camper and quitter types. However, it is also known that students with the camper and quitter types also have mathematical abilities with incomplete fulfillment of indicators. However, students with the camper type have better mathematical abilities than students with the quitter type. Therefore, the success and achievement of mathematics learning that is expected to achieve mathematics learning goals, namely mathematical ability, can be built and constructed by the students with a solid ability to overcome any problems presented in mathematics learning. Students are expected not to give up quickly before trying and being able to ask if they do not understand every concept taught. Thus, the concepts presented can be understood well to support the achievement of other mathematical abilities.

#### REFERENCES

- Abdiyani, S. S., et al. 2019. Profile of Mathematics Problem Solving Ability of Junior High School Students Based on Polya's Steps Given Adversity Quotient. *Al-Khwarizmi: Journal of Mathematics and Natural Sciences Education*, 7(2): 123 – 134
- Adam, A. H. E., et al. 2022. Analysis of Mathematical Literacy Ability of SMP Negeri 1 Juwana Students in Solving Mathematics Problems because of Adversity Quotient. *AKSIOMA: Journal of Mathematics Education Study Program*, 13(2): 213 – 225
- Adlini, M. N. et al. (2022). Qualitative Research Methods of Literature Study. *EDUMASPUL Journal of Education*, 6(1): 974 – 980
- Aini, N. N., & Mukhlis, M. (2020). Analysis of Problem-Solving Ability on Mathematics Story Problems Based on Polya's Theory in View of Adversity Quotient. *Alifmatika: Journal of Mathematics Education and Learning*, 2(1): 105 – 128
- Almubarakah, N., et al. 2024. Analysis of Students' Critical Thinking Ability in Mathematics Problem Solving in View of Adversity Quotient (AQ) on Social Arithmetic Material. *Journal of Mathematics Education*, 14(1): 163 – 174
- Annikmah, I., et al. 2020. The Effect of Self-Confidence and Adversity Quotient on Students' Mathematical Problem Solving Ability. *PYTHAGORAS: Journal of Mathematics Education Study Program*, 9(2): 106 – 113
- Anwar, L., et al. (2024). Adversity quotient of Indonesian prospective mathematics teachers in solving geometry higher-order thinking skills problems. *Journal on Mathematics Education*, 15(1): 79 – 98
- Astiantari, I., et al. 2022. Critical Thinking Ability of Junior High School Students in Solving Mathematics Problems in View of Adversity Quotient. *AKSIOMA: Journal of Mathematics Education Study Program*, 11(2): 1270 - 1281
- Awalia, N & Saputri, S. 2023. Students' Mathematical Problem-Solving Ability in Problem-Based Learning Model in View of Adversity Quotient. *Indo-MathEdu Intellectuals Journal*, 4(3): 1599 – 1607
- Azizah, S. (2020). The Effect of Learning Model and Adversity Quotient on Mathematics Connection Ability. *Indonesian Journal of Education*, 1(3): 370 – 396
- Baharullah, et al. 2022. Profile of Students' Mathematical Problem Solving Ability in View of Adversity Quotient. *AKSIOMA: Journal of Mathematics Education Study Program*, 11(2): 1039 – 1051
- Bellyana, A., and Musrikah. 2024. Students' Ability in Pisa Standardized Mathematics Problem Solving (Program For International Student Assessment) in View of Adversity Quotient in Class VIII MTsN 5 Tulungagung. *Journal on Education*, 6(3): 16540 – 16548
- Hidayanti, L. N., et al. 2023. The Direct Effect of Adversity Quotient, Mathematical Disposition, and Mathematical Connection Ability on Mathematical Critical Thinking Ability. *Dharmas Education Journal*, 4(2): 811 – 824
- Kartika, R. W., Megawanti, P., & Hakim, A. R. (2021). The effect of adversity quotient and task commitment on mathematics problem-solving ability. *Journal of Mathematics Education Research*, 8(2): 206 - 216
- Lestari, I. D., and Juandi, D. 2023. Students' Mathematical Problem-Solving Ability Reviewed From Adversity Quotient: Systematic Literature Review. *Journal of Mathematics and Mathematics Education*, 13(1): 56 – 75
- Lestari, W., et al. 2022. Mathematical Problem-Solving Ability Through Adversity Quotient and Task Commitment. *SEPREN: Journal of Mathematics Education and Applied*, 4(1): 56 – 62
- Manazila, S. I., et al. 2022. Creative Thinking Ability Based on Adversity Quotient Type in Mathematics Learning. *Cendekia Journal: Journal of Mathematics Education*, 6(2): 1788 – 1796

## “Exploration of Students’ Mathematical Ability Level: A Review of Adversity Quotient Types”

18. Mefiana, S. A., et al. (2023). Students' Mathematical Understanding in View of Productive Striving Power. *Cendekia Journal: Journal of Mathematics Education*, 7(3): 2368 – 2381
19. Merianah. (2019). The Effect of Emotional Intelligence and Adversity Quotient on Mathematics Problem-Solving Ability of Students of SDIT IQRA'1 Bengkulu City. *Rafflesia Journal of Mathematics Education*, 4(1): 29 – 35
20. Nilasari, N. T., and Anggreini, D. 2019. Students' Mathematical Literacy Ability in Solving PISA Problems in View of Adversity Quotient. *Journal of Elements*, 5(2): 206 – 219
21. Nurfitriyanti, M., Rosa, N. M., & Nursa'adah, F. P. 2020. Adversity Quotient and Locus of Control and Their Effect on Mathematics Problem Solving Ability. *Proceedings of the National Seminar of Science 2020*, 1(1): 479 – 486
22. Nurhikmah, et al. 2023. Profile of Students' Mathematical Spatial Reasoning Ability in Cube and Block Material in terms of Adversity Quotient in Class IX at SMP Negeri 1 Galesong Utara. *ARRUS Journal of Social Sciences and Humanities*, 3(2): 215 – 228
23. Purwanto, E. (2024). Mathematical Creative Thinking Ability in Problem-Solving Viewed From Adversity Quotient. *Journal of Education and Learning Mathematics Research*, 5(1): 7 – 14
24. Purwosetiyono, F. X. D., et al. 2022. Reasoning Ability of Junior High School Students in Solving Mathematics Literacy Problems in Adversity Quotient Type Students. *Enggang: Journal of Education, Language, Literature, Arts and Culture*, 3(1): 1 – 10
25. Rahmayantri, A., and Priatna, N. 2022. Mathematical Problem-Solving Ability of Grade VII Students in Solving Social Arithmetic Problems Based on Adversity Quotient Type. *EduMatSains*, 7(1): 197 – 208
26. Ramini and Setyadi, D. 2021. Profile of Mathematics Problem Solving in View of Adversity Quotient. *Journal of Mathematics Learning Research*, 14(1): 52 – 61
27. Rizalno, S. M., and Purwanto, S. E. 2022. Mathematical Creative Thinking Ability: The Impact Of Adversity Quotient On Triangle And Quadrilateral Shapes Material. *Decimal: Journal of Mathematics*, 5(2): 143 – 154
28. Rusmania, S. A., et al. 2023. Analysis of Mathematics Problem Solving Ability in View of Adversity Quotient on Number Pattern Material for Class VIII Students of SMPN 3 Pringgarata in the 2023/2024 Academic Year. *Pendas: Scientific Journal of Basic Education*, 8 (3): 5267 – 5281
29. Sari, M. and Asmendri. 2020. *Library Research in Science Education Research. NATURAL SCIENCE: Journal of Education in the Field of Science and Science Education*, 6 (1): 41 – 53
30. Siswanto, Eko, Aziz, Tian Abdul, El Hakim, Lukman. 2024. Improving Critical Thinking Ability in Mathematics Problem Solving: Philosophy and Adversity Quotient Perspective. *JP2M (Journal of Mathematics Education and Learning)*, 10(1): 17 – 27
31. Supono, L., et al. 2024. Mathematical Connections of Students Viewed From Adversity Quotient in Problem-Based Learning Using Math City Map. *AlphaMath: Journal of Mathematics Education*, 10(1): 74 – 84
32. Triana, E., & Afri, L. D. (2023). Ability to Understand Mathematical Concepts and Adversity Quotient Students Reviewed from Al-Qur'an Memorize Ability. *Mathematics Innovation (Inomatika)*, 5(2): 113 – 130
33. Yuniara, R., et al. 2023. Students' Mathematical Problem Solving Ability Based On The Steps Of Ideal Problem Solving Viewed From Adversity Quotient (AQ). *Al Khawarizmi: Journal of Mathematics Education and Learning*, 7(1): 36 - 47