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Students' Mathematical Literacy in Addressing Contextual Questions Through Adversity Quotient

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Abstrak

Perolehan kemahiran matematika melibatkan kompetensi numerik dan penerapan konsep matematika untuk mengatasi tantangan dunia nyata. Penelitian ini bertujuan untuk menjelaskan literasi matematis siswa SMP dalam menyelesaikan permasalahan kontekstual, mengelompokkannya berdasarkan tingkat Adversity Quotient (AQ) yaitu climbingers, campers, dan quitters. Dengan menggunakan desain penelitian deskriptif dengan pendekatan kualitatif, penelitian ini difokuskan pada siswa Kelas VIII SMP N 32 Bandung. Pemilihan subjek penelitian bergantung pada tipe AQ mereka. Pengumpulan data menggunakan lembar Adversity Response Profile (ARP), yang dilengkapi dengan pertanyaan esai dan wawancara. Analisisnya meliputi reduksi data, penyajian data, dan penarikan kesimpulan. Temuan ini mengungkapkan ciri-ciri khusus di antara kategori-kategori AQ: (1) Siswa tipe pendaki menunjukkan kemahiran dalam perumusan masalah, perancangan dan implementasi strategis, serta interpretasi, penerapan, dan evaluasi hasil perhitungan, disertai dengan penguatan atas jawaban mereka; (2) Siswa tipe camper menunjukkan kemahiran dalam merumuskan masalah, merancang dan menerapkan strategi solusi, namun gagal dalam menyajikan interpretasi alternatif; dan (3) Siswa tipe quitter kesulitan dalam mengidentifikasi dan merumuskan strategi pemecahan masalah, menunjukkan kurang presisi dalam perhitungan, sehingga menghasilkan hasil yang salah.

Kata Kunci: Literasi Matematika; Masalah Kontekstual; Adversity Quotient.

Abstract

The acquisition of mathematical proficiency involves numerical competence and the application of mathematical concepts to address real-world challenges. This study aims to elucidate the mathematical literacy of junior high school students in resolving contextual problems, categorizing them according to their Adversity Quotient (AQ) levels, namely climbers, campers, and quitters. Employing a descriptive research design with a qualitative approach, the investigation focuses on Class VIII students at SMP N 32 Bandung. The selection of research subjects is contingent upon their AQ types. Data collection utilizes an Adversity Response Profile (ARP) sheet, incorporating essay questions and interviews. The analysis involves data reduction, data presentation, and drawing conclusions. The findings reveal distinctive attributes among the AQ categories: (1) Climber-type students demonstrate adeptness in problem formulation, strategic design and implementation, as well as the interpretation, application, and evaluation of calculation outcomes, accompanied by reinforcement for their answers; (2) Camper-type students exhibit proficiency in formulating problems, designing and applying solution strategies, yet fall short in presenting alternative interpretations; and (3) Quitter-type students struggle in identifying and formulating problem-solving strategies, displaying less precision in calculations, resulting in incorrect outcomes.

Keywords: Mathematical Literacy; Contextual Problems; Adversity Quotient.

I. INTRODUCTION

In their daily pursuits, students routinely encounter challenges encompassing various domains, such as personal matters, interpersonal dynamics, environmental issues, and professional responsibilities. Most predicaments inherent in students' daily lives intertwine with contextual dilemmas that necessitate the application of mathematical principles. Proficiency in mathematical literacy emerges as a critical cognitive aptitude for students to cultivate (Mulyadi & Afriansyah, 2022).

According to the Organization for Economic Cooperation and Development (OECD, 2013), mathematical literacy denotes a comprehensive mastery of mathematical abilities, encompassing formulation, application, and interpretation of mathematics across diverse contexts. This proficiency extends to the capacity for reasoning and establishing connections between mathematical concepts and their real-world applications.

Furthermore, mathematical literacy aligns with the objectives delineated by the National Council of Teachers of Mathematics (NCTM, 1991), which emphasize cultivating skills in mathematical communication, reasoning, problem-solving, making connections, and representation. McCabe (2001) additionally posits that mathematical literacy underscores an understanding of the fundamental characteristics of mathematical concepts, both in oral and written forms. Consequently, mathematical literacy is instrumental in facilitating a comprehensive comprehension of mathematics's role in one's life (Purnomo & Sari, 2021).

A mathematically literate individual can estimate quantities, interpret data, adeptly navigate and resolve everyday problems, engage in numerical and geometric reasoning, and communicate mathematical concepts through various modalities (Rahmawati, Cholily, & Zukhrufurrohmah, 2023).

As the OECD (2013) defined, mathematical literacy underscores three fundamental dimensions: formulation, application, and interpretation. Formulation involves the capacity of an individual to discern and recognize mathematical structures within contextual problems, subsequently providing a mathematical framework for their resolution. The application of mathematical literacy signifies an individual's adeptness at employing mathematical concepts, factual knowledge, procedural methods, and mathematical reasoning to derive conclusive mathematical outcomes. Meanwhile, the interpretive aspect of mathematical literacy centres on an individual's ability to critically reflect upon mathematical solutions, obtained results, or conclusions, interpreting them within the broader context of everyday life.

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Literacy, encompassing reading and mathematical literacy (numeracy), constitutes a foundational skill set crucial for acquiring 21st-century competencies (Nudiati & Sudiapermana, 2020). The Program for International Student Assessment (PISA), orchestrated by the OECD, assesses reading, mathematical, and scientific literacy in students aged 15-18 across various nations, including Indonesia. Since 2001, Indonesia has consistently participated in PISA, experiencing fluctuating rankings over the past four assessment periods—placing 57th out of 65 participating countries, 64th out of 65 participating countries, 64th out of 72 participating countries, and 74th out of 79 participating countries (OECD, 2001; 2014; 2018; 2019). In the PISA 2018 assessment, it was observed that Indonesian students scored below the OECD average in mathematical literacy, registering a score of 379 compared to the average score of 489 (OECD, 2018). This decline in mathematical literacy indicates a suboptimal performance in solving contextual problems among students.

Several factors may contribute to this outcome, including the insufficient training of students in addressing contextual problems or inadequacies in the problem-solving orientation of questions posed by educators. PISA questions emphasize formulating, applying, and interpreting mathematical problems within diverse contexts (Masfufah & Afriansyah, 2022). This perspective aligns with the findings of Wardhani & Rumiati (2011), who asserted that, based on the PISA study's general outcomes, junior high school students in Indonesia struggle to develop optimal thinking skills, lack the habit of simultaneous reading and critical thinking, and tend to receive and subsequently forget information passively. This trend suggests a weakness in students' proficiency in solving mathematical problems that involve mathematical literacy.

As elucidated by Zulkardi and Ilma (2006), contextual mathematics questions refer to mathematical queries embedded within various real-life scenarios, reflecting situations children encounter. Additionally, Soedjadi (2007) posits that contextual problems entail challenges utilizing environments closely tied to students' daily experiences.

The following are contextual questions developed in this research.

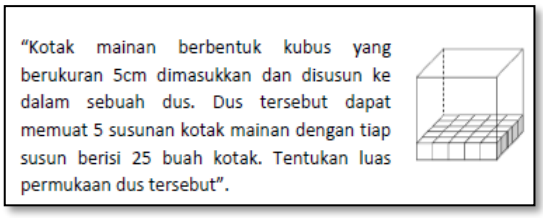

Figure 1. Contextual Question

Recognizing the inherent diversity among students, it is acknowledged that individual characteristics significantly influence their capacities to confront challenges in learning and resolving mathematical problems. Students exhibit varying levels of intelligence,

encompassing intelligence quotient (IQ), emotional quotient (EQ), spiritual quotient (SQ), and adversity quotient (AQ), all of which impact their success in problem-solving.

The findings of Mahdiansyah & Rahmawati (2014) align with this perspective, elucidating that personal, instructional, and environmental factors influence the mathematics literacy achievements of Indonesian students. Notably, individual intelligence is a salient personal factor contributing to these achievements.

The adversity quotient (AQ) represents a psychological facet denoting an individual's intelligence in confronting challenges (Hidayat, 2017). Stoltz (2000) defines AQ as the ability to comprehend and process difficulties in conjunction with intelligence, transforming them into challenges for students to resolve.

Students' success in the learning process hinges on their adeptness in surmounting encountered difficulties (Supardi, 2013). The adversity quotient, a manifestation of one's intelligence in navigating challenges, is a crucial element influencing students' overall success and academic achievement.

Numerous research outcomes posit a positive correlation between adversity quotient and problem-solving abilities (Espanola, 2016; Khairani & Abdullah, 2018). Students with higher adversity quotient levels are deemed better equipped to navigate challenges, enhancing their problem-solving capabilities. Conversely, those with lower adversity quotient levels tend to perceive difficulties as insurmountable obstacles, resulting in diminished learning achievements.

Furthermore, Zhou Huijuan's (2009) study, "The Adversity Quotient and Academic Performance Among College Students at St. Joseph College, Quezon City," affirms a significant association between adversity quotient and academic achievements during the 2008-2009 school year at St. Joseph College, Quezon City.

Stoltz (2000) asserted that reliance solely on intelligence quotient (IQ) and emotional quotient (EQ) is insufficient for ensuring individual success; the incorporation of adversity quotient (AQ) becomes imperative, representing a manifestation of resilience, motivation, and an unwavering commitment to achieving success. AQ is recognized as a metric to gauge an individual's response to challenges and difficulties, categorizing individuals into three distinct types: Quitter, Camper, and Climber (Mulyani, Wahyuningsih, & Natalliasari, 2019). The Quitter readily abandons efforts in the face of challenges, the Camper remains relatively comfortable with their circumstances but seldom engages in risk-taking when confronted with problems, while the Climber consistently aspires for excellence and fearlessly tackles diverse challenges.

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Given this conceptual framework, it becomes evident that the adversity quotient significantly influences students' problem-solving activities. Insight into students' problem-solving processes, particularly concerning mathematical literacy and their respective adversity quotient types, can enhance the mathematics learning experience. Consequently, this research aims to delineate students' mathematical literacy in resolving contextual problems, with a specific focus on the influence of adversity quotient types.

II. METHOD

This study employed a descriptive qualitative research method wherein the researcher provides a detailed account of the abilities of the research subjects without implementing any specific treatment. The selection of subjects for this research utilized a purposive sampling technique, focusing on Class VIII students at SMP Negeri 32 Bandung during the second semester of the academic year 2020/2021.

Data collection encompassed using Stoltz's Adversity Response Profile (ARP) scale, adapted by the researchers for educational contexts, alongside contextual problem description questions in test format and interviews. The ARP sheet categorizes students into adversity quotient types (Quitter, Camper, Climber), while tests and interviews elicit information regarding students' mathematical literacy. The researcher conducted validity and reliability tests on the measuring instruments before application to ensure data quality.

The study used the Miles & Huberman model for data analysis, involving stages of data reduction, presentation, and drawing conclusions/verification (Miles & Huberman, 1994). The data underwent a validity testing stage, including internal validity assessment through triangulation, credibility, transferability, dependability, and confirmability techniques (Sugiyono, 2016).

The selection of research subjects was based on adversity quotient type criteria, specifically climber, camper, and quitter classifications. Purposive sampling techniques were applied, guided by responses to mathematical literacy tests focused on contextual questions. Mathematical literacy assessment considers three key processes: formulating, applying, and interpreting.

III. RESULT AND DISCUSSION

Analyzing the Adversity Response Profile (ARP) results, it was found that out of the total 32 students in the study, six were classified as climbers, 18 as campers, and eight as quitters. A visual representation in the form of a percentage diagram illustrating the distribution of the Adversity Quotient (AQ) categories for each type is presented in the following image.

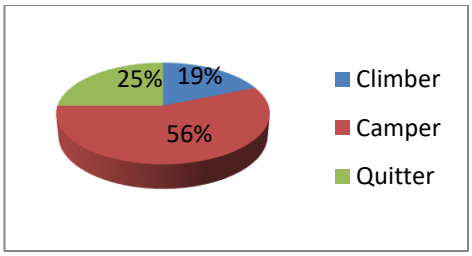

Figure 2. Percentage Diagram of Students Based on AQ Type

The responses derived from the research subjects were subsequently scrutinized to identify informant subjects, employing a purposive sampling technique for their selection. The choice of informant subjects was guided by the criterion of shared or nearly identical response patterns among the students. The initiation of the data analysis process involves a comprehensive review of all accessible data, encompassing both oral and written student activities. The data analysis is confined to the students' verbal and written communication. To ensure the data's validity, a comparative analysis is undertaken, triangulating the reported data with the results obtained from interviews.

The results of the mathematical literacy analysis, considered from the perspective of AQ types, are presented as follows.

A. Mathematical Literacy of the Climber Type in Problem Solving

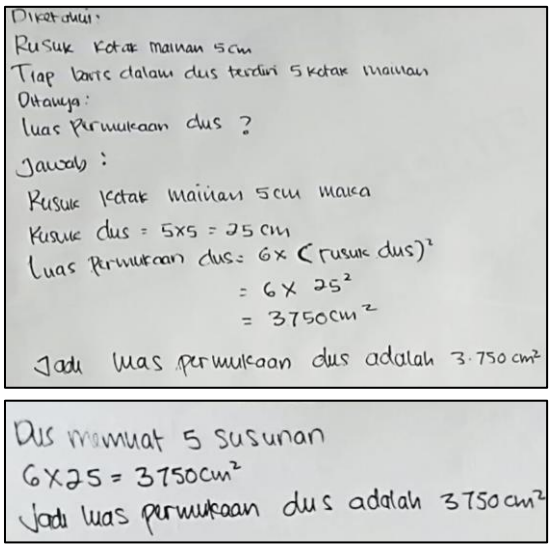

Figure 3. The Answer from Climber-Type Student

1) Formulate

Students exhibiting climber-type abilities demonstrate adeptness in mathematically formulating problems, indicating their capacity to comprehend and discern the underlying issues. This proficiency aligns with the findings of Mawardhiyah and Manoy (2018), who observed that climber-type students excel in formulating answers by strategically identifying the required solution and comprehending the known elements within the problem context. Additionally, climber subjects exhibit clarity and completeness in articulating the known information and the problem's requirements.

Similar observations were reported by Mardiana (2020), affirming that climber-type students excel in problem identification, comprehensive solution

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planning, and articulating procedural steps using learned concepts. In concurrence, Herlinda (2019) emphasized that, during the preparation stage, students endowed with climber abilities demonstrate a relatively efficient understanding of the problem.

Climber-type students recognize relationships within problems and skillfully design problem-resolution strategies through accurate mathematical modelling. In addition to simplifying problems for systematic analysis, climber-type students exhibit proficiency in applying formulas, such as those for calculating the surface area of a cube.

2) Employ

In formulating and executing strategies to determine solutions, students characterized by the climber type exhibit clarity in employing concepts, facts, procedures, and mathematical reasoning. The procedural approach used for problem resolution is evident and coherent, underscoring the climber-type students' ability to adeptly apply the concept of calculating the surface area of a cube.

The procedures undertaken by climber-type students align with the assertions of Setiawan (2019), who posited that students endowed with climber-type abilities proficiently identify the requisite concepts for accurate problem-solving. These students demonstrate a capacity to apply facts, rules, algorithms, and mathematical structures when seeking solutions, showcasing a systematic application of the problem-solving steps. Furthermore, students characterized by climber-type abilities exhibit proficiency in the proper application of the rule governing the surface area calculation for a cube.

3) Interpret

During the interpretation stage, students demonstrating climber-type abilities can review and verify the outcomes of their answers. This allows them to clearly interpret, apply, and assess the calculation results. These findings align with the research conducted by Kholid & Yuhana (2019), which affirmed that climber-type subjects exhibit proficiency in re-evaluating their solutions and expressing confidence in their obtained answers. Consequently, it can be deduced that students with climber-type abilities excel in the various stages of the mathematical literacy process.

B. Mathematical Literacy of the Camper Type in Problem Solving

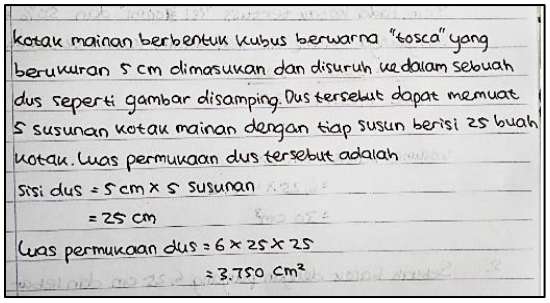
kotak mainan berbentuk kubus berwarna "tosca" yang berukuran 5 cm dimasukkan dan disuruh ke dalam sebuah dus seperti gambar disamping. Dus tersebut dapat memuat 5 susunan kotak mainan dengan tiap susun berisi 25 buah kotak. Luas permukaan dus tersebut adalah
sisi dus = 5 cm x 5 susunan
= 25 cm
Luas permukaan dus = 6 x 25 x 25
= 3.750 cm²

Figure 4. The answer from Camper-Type Student

1) Formulate

Generally, students possessing camper-type abilities exhibit proficiency in

problem identification, strategy formulation, and the execution of resolution strategies. However, camper subjects face challenges in determining formulas or alternative solutions when confronted with problems. This observation aligns with the findings of Ningrum (2017), indicating that students with camper-type abilities struggle to articulate additional approaches or methods for problem-solving, despite their ability to articulate and explain their written work fluently and accurately.

2) Employ

During the application stage, students exhibiting camper-type abilities demonstrate proficiency in elucidating the problem-solving steps by explicitly detailing the known and requested aspects of the problem in writing. Camper subjects adeptly employ facts and rules when addressing mathematical solutions previously documented.

Students characterized by camper-type abilities can successfully navigate problem-solving tasks up to the completion of the plan, as highlighted by Mardika & Insani (2017). In comprehending problems, these students integrate known information and pose inquiries using their language. Subsequently, camper subjects accurately prepared a solution plan but encountered challenges in reviewing the obtained results.

3) Interpret

Individuals demonstrating camper-type abilities can adeptly decipher problems presented as mathematical sentences using their expressions. Following this, students with camper-type abilities proficiently devise a solution plan and execute accurate calculations. However, these students encounter challenges in reviewing the obtained results and display limited initiative in seeking alternative answers to problems. This observation aligns with Stoltz's (2005) assertion that individuals with camper tendencies, despite encountering various obstacles, tend to reach a point of comfort and remain stationary.

C. Mathematical Literacy of the Quitter Type in Problem Solving

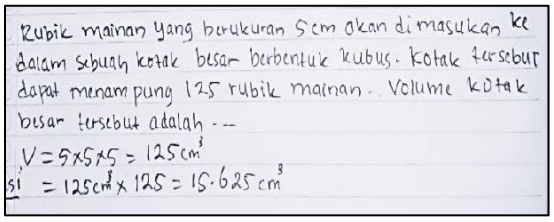
Rubik mainan yang berukuran 5cm akan dimasukan ke dalam sebuah kotak besar berbentuk kubus. kotak tersebut dapat menampung 125 rubik mainan. Volume kotak besar tersebut adalah ...
$V = 5 \times 5 \times 5 = 125 cm^3$
$= 125 cm^3 \times 125 = 15.625 cm^3$

Figure 5. The answer from Quitter-Type Student

1) Formulation

Students exhibiting quitter-type abilities encounter challenges in identifying problems and formulating effective strategies. The analysis of student data indicates their struggle to articulate the known and required elements accurately and precisely, leading to inappropriate solution outcomes. This aligns with Ningrum's (2017) findings, emphasizing quitter-type students' difficulty in accurately stating known facts within questions.

2) Employ

Analysis results indicate that students with quitter-type abilities cannot currently execute the strategy process; while they can articulate completion strategies, their inability to implement them hinders attaining desired results. These students struggle to understand problems thoroughly, limiting their comprehension to explicitly stated elements (Mardika & Insani, 2017), impeding their problem-solving capabilities.

3) Interpretation

During the interpretation stage, where mathematical results are re-contextualized into real-world problems, students demonstrating quitter-type abilities face challenges in interpretation. Quitter subjects struggle to apply conceptual frameworks to derive answers, leading to non-verbal expressions of their thoughts rather than coherent written interpretations. This finding corresponds with Widiastuti's (2015) discovery that quitter subjects verbally express their checking process. Moreover, Stoltz (2005) asserts that quitter subjects exhibit limited work engagement.

IV. CONCLUSION

Based on the research data and discussions, it can be concluded that students demonstrating climber-type abilities excel in mathematically formulating problems. They articulate the known and requested elements of a question with completeness and clarity. In the utilization of concepts, facts, procedures, and reasoning, these students exhibit proficiency, notably employing the concept of the surface area of a cube with clear and coherent procedures. Additionally, climber-type students showcase adeptness in interpreting, applying, and evaluating calculation results, reinforcing their obtained answers. This substantiates the conclusion that students with climber-type abilities excel in the mathematical literacy stage, particularly in resolving contextual problems. Students with camper-type abilities demonstrate proficiency in problem formulation, identifying mathematical aspects within real-world contexts, and recognizing essential variables. They articulate crucial information needed to address questions, rephrasing the problem's meaning using their language. In the application stage, camper-type students adeptly design and apply strategies to find mathematical solutions, documenting known and requested information. However, they currently face limitations in providing alternative answers to the problems. Students with quitter-type abilities encounter challenges in problem identification, strategy formulation, and implementing problem-solving approaches. These subjects lack precision in performing calculations, leading to inaccurate results. Furthermore, at the interpretation stage, quitter-type students struggle to contextualize mathematical

outcomes in real-world scenarios. Essentially, they struggle to articulate the given problems in their own words, primarily engaging in reflective thinking. Consequently, students with quitter-type abilities tend to bypass double-checking solution steps and calculation results.

REFERENCES

Espanola, R.P. (2016). Adversiti Quotient (AQ) and academic performance of selected students in MSU Marawi City. *Proceeding Journal of Education, Psychology and Social Science Research*.

Herlinda, M. (2019). Proses berpikir kreatif peserta didik dalam memecahkan masalah matematika berdasarkan langkah Bransford dan Stein. *Prosiding Seminar Nasional & Call for Paper Program Studi Magister Pendidikan Matematika Universitas Siliwangi,* 346-352.

Hidayat. (2017). Adversity quotient dan penalaran kreatif matematis siswa SMA dalam pembelajaran Argument Driven Inquiry pada materi turunan fungsi. *Kalamatika: Jurnal Pendidikan Matematika, 2*(1), 15-28. 10.22236/KALAMATIKA.vol2no1.2017 pp15-28.

Khairani, A. Z., & Abdullah, S. M. S. (2018). Relationship between adversity quotient and academic well-being among malaysian undergraduates. *Asian Journal of Scientific Research, 11*(1), 51-55. 10.3923/ajsr.2018.51.55.

Kholid, M. N., & Yuhana, N. D. (2019). Metakognisi mahasiswa dalam memecahkan masalah geometri analitik ruang ditinjau dari adversity quotient. *Seminar Nasional Penelitian Pendidikan Matematika (Snp2M),* 178-179.

Mahdiansyah & Rahmawati. (2014). Literasi matematika siswa jenjang pendidikan menengah: analisis menggunakan desain tes internasional dengan konteks Indonesia. *Jurnal Pendidikan dan Kebudayaan, 20*(4), 452-469. 10.1787/9789264190511-en.

Mardiana, D. (2020). Adversity quotient and the development of students' endurance dimensions in the new normal era: a study of Islamic religious education online learning at The State University of Malang. *Intelektual: Jurnal Pendidikan dan Studi Keislaman, 2*(1), 19-33. 10.33367/ji.v12i1.2278.

Mardika, F., & Insani, S, U. (2017). Adversity quotient and students' problem-solving skill in mathematics. *Proceedings of 4th International Conference on Research, Implementation, and Education of Mathematics and Science (4th ICRIEMS).*

Masfufah, R., & Afriansyah, E. A. (2022). Analisis Kemampuan Literasi Matematis Ditinjau dari Gaya Belajar

Siswa SMP pada Pembelajaran Daring. *PERISAI: Jurnal Pendidikan dan Riset Ilmu Sains*, *1*(1), 1-13.

Mawardhiyah, K., & Manoy, J. T. (2018). Literasi matematika siswa SMP dalam menyelesaikan soal programme for international student assessment (PISA) Berdasarkan Adversity Quotient (AQ). *MATHEdunesa, 7*(3), 638–643.

McCabe, K. J. (2001). Mathematics in our schools: an effort to improve mathematical literacy. Unpublished Master Thesis, California State University.

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis* (2nd ed.). London, UK: Sage Publications.

Mulyadi, R., & Afriansyah, E. A. (2022). Pengaruh literasi digital terhadap kemandirian belajar matematika siswa. *Math Didactic: Jurnal Pendidikan Matematika*, *8*(2), 183-191.

Mulyani, E., Wahyuningsih, S., & Natalliasari, I. (2019). Adversity Quotient Mahasiswa Pendidikan Matematika dan Keterkaitannya dengan Indeks Prestasi Kumulatif. *Mosharafa: Jurnal Pendidikan Matematika*, *8*(1), 119-130.

NCTM. (1991). *Standard for professional development of teacher of mathematics*. Reston, VA: NCTM.

Ningrum, I. A. (2017). *Analisis tingkat berpikir kreatif matematis peserta didik ditinjau dari adversity quotient kelas VIII MTs Muhammadiyah Bandar Lampung tahun ajaran 2016/2017*. Skripsi tidak dipublikasikan, Universitas Islam Negeri Raden Intan, Lampung.

Nudiati, D., & Sudiapermana, E. (2020). Literasi sebagai kecakapan hidup abad 21 pada mahasiswa. *Indonesia Journal of Learning Education and Counseling, 3*(1), 34-40.

Purnomo, B. W., & Sari, A. F. (2021). Literasi Matematika Siswa IPS dalam Menyelesaikan Soal PISA Konteks Saintifik. *Mosharafa: Jurnal Pendidikan Matematika*, *10*(3), 357-368.

OECD. (2001). *Knowledge and skills for life: First result from the OECD Programme for International Student Assessment (PISA) 2000*. USA: OECD-PISA.

OECD. (2013). *PISA 2012 assessment and analytical framework: mathematic, reading, science, problem solving and financial literacy.* Paris: OECD Publishing.

OECD. (2013). *PISA 2012 result in focus: what 15-years-olds know and what they can do with what they know*.

OECD. (2018). *PISA 2015 result in focus.* Kanada: OECD. Diambil dari: https://www.oecd.org.

OECD. (2019). *PISA 2018 result combined executive summaries.* PISA-OECD Publishing.

Rahmawati, A., Cholily, Y. M., & Zukhrufurrohmah. (2023). Analyzing Students' Mathematical

Communication Ability in Solving Numerical Literacy Problems. *Mosharafa: Jurnal Pendidikan Matematika*, *12*(1), 59-70.

Setiawan. (2019). *Kemampuan Metakognisi dalam Pemecahan Masalah Persamaan Kuadrat Ditunjau dari Adversity Quotient Pada Siswa Kelas X.* Skripsi tidak diterbitkan, Universitas Muhamadiyah Surakarta, Solo.

Soedjadi, R. (2007). Masalah kontekstual sebagai batu sendi matematika sekolah. UNESA Surabaya: Pusat Sains dan Matematika Sekolah.

Stoltz, P.G. (2000). *Adversity quotient: Mengubah hambatan menjadi peluang (Adversity quotient: Turning obstacles into opportunities).* Jakarta: PT Grasindo.

Stoltz, P. G. (2005). *Adversity quotient: Turning obstacles into opportunities*. Jakarta: PT Grasindo Indonesia.

Sugiyono, S. (2016). *Metode penelitian kuantitatif, kualitatif dan R&D*. Bandung: Alfabeta.

Wardhani & Rumiati. (2011). *Instrumen penilaian hasil belajar matematika SMP: belajar dari PISA dan TIMSS*. Yogyakarta: P4TK.

Widiastuti, T. (2015). *Proses Berpikir Siswa SMP dalam Memecahkan Masalah Matematika DItunjau dari Adversity Quotient (AQ).* Tesis tidak diterbitkan, Universitas Negeri Surabaya.

Zhou Huijuan. (2009). *The adversity quotient and academic performance among St. Joseph's College Quezon City college students.* An Undergraduate Thesis. The Faculty of The Department of Arts and Sciences St. Joseph College Quezon City.

Zulkardi, & Ilma, R. (2006). Mendesain sendiri soal kontekstual matematika. Conference Pada Konferensi Nasional Matematika (KNM) ke 13, Semarang.

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