ANALYSIS OF STUDENTS' NUMERATION SKILLS FOR LINEAR EQUATIONS MATERIAL BASED ON HONEY AND MUMFORD'S LEARNING STYLE

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ABSTRAK

Hasil observasi menunjukkan siswa kurang tepat dalam menyelesaikan soal. Terlihat siswa belum bisa memahami perubahan tanda positif dan negatif pada persamaan, sehingga penelitian numerasi ini diperlukan untuk mengidentifikasi kesulitan siswa. Fokus penelitian adalah mendeskripsikan kemampuan numerasi siswa berdasarkan gaya belajar Honey and Mumford dalam menyelesaikan soal persamaan linier di kelas VII A SMP Negeri 02 Gondanglegi. Subjek terdiri dari 4 siswa pada gaya belajar menurut Honey and Mumford, yaitu: aktivis, reflektor, teoris, dan pragmatis. Prosedur pengumpulan data meliputi kuesioner, tes, wawancara, dan dokumentasi. Data dievaluasi melalui reduksi, penyajian, dan penarikan kesimpulan. Siswa dengan gaya belajar pragmatis mempunyai kemampuan numerasi lebih baik karena karakter siswa terbuka, sehingga menimbulkan rasa ingin tahu, *trial and error*, keberanian, dan kreatifitas. Siswa dengan gaya belajar aktivis meningkatkan kemampuan numerasi ketika keterampilan berhitungnya bertambah seiring rasa ingin tahu. Siswa dengan gaya belajar reflektor mempunyai kemampuan numerasi yang tidak terlihat, bahkan terganggu karena dia berpikir secara acak. Siswa dengan gaya belajar teoris memiliki kemampuan numerasi tinggi dan mendominasi sesuai latihan rutin oleh guru. Disimpulkan bahwa siswa dengan gaya belajar pragmatis memiliki kemampuan numerasi lebih tinggi, dibandingkan siswa dengan gaya belajar aktivis, reflektor, maupun teoris. Penelitian ini berkontribusi untuk meningkatkan kemampuan numerasi siswa dengan menggunakan gaya belajar Honey and Mumford.

ABSTRACT

The results of observations at SMP Negeri 02 Gondanglegi Class VII A showed that students were less precise in solving conceptual understanding questions. It can be seen that students cannot understand the changes in positive and negative signs when moving numbers in an equation, so this numeracy research is needed to identify students' difficulties. The focus of the research is to describe students' numeracy abilities based on Honey and Mumford's learning style in solving linear equation problems in class VII A of SMP Negeri 02 Gondanglegi. The research uses descriptive qualitative research. The subjects consisted of 4 students with the highest scores in different learning styles according to Honey and Mumford, namely: activists, reflectors, theorists, and pragmatists. Data collection procedures include questionnaires, tests, interviews, and

documentation. Data is evaluated through a process of data reduction, data presentation, and drawing conclusions. Based on the analysis, students with a pragmatic learning style have better numeracy skills because the student's character is open, giving rise to great curiosity, trial and error, courage and creativity. Students with an activist learning style improve their numeracy skills when their numeracy skills increase along with their greater curiosity. Meanwhile, students with a reflector learning style have invisible numeracy abilities, and are even disturbed because they think randomly. Students with a theoretical learning style have high numeracy skills in the applying question type and dominate in the employ step according to routine training by the teacher. It was concluded that students with a pragmatic learning style had higher numeracy abilities, compared to students with an activist, reflector, or theoretical learning style. It is important that this research was carried out as a contribution to improving students' numeracy skills by using the Honey and Mumford learning style as a reference.

INTRODUCTION

Numeracy ability is the analytical ability to solve complex problems and involves critical thinking and in-depth analysis, which is often needed in dealing with everyday life situations (Basri dkk., 2021; Sanvi & Diana, 2022). These problems can be non-routine problems given in narrative form to stimulate students' ability to extract relevant solutions. Apart from that, the ability to enumerate is used to train deductive thinking skills and be able to see problems expressed from different perspectives to involve the subject in considering from various points of view (Wijaya & Dewayani, 2021).

The ability to apply the ideas of arithmetic operations and mathematical analysis of diagrams, tables, and graphs is known as numeracy ability (Pangesti, 2018). Han Dkk, (2017) stated that numeracy skills are students' ability to apply numbers to solve problems in real-world situations such as arithmetic skills, numerical implementation, proficiency in arithmetic operations, and the ability to interpret information from the environment.

According to Winata dkk., (2021), problem-solving in numeracy is an advanced thinking skill, a person must apply existing knowledge and process it to arrive at a possible answer to a problem. The problems being solved are non-routine problems that require students to think critically. According to the OECD in Wijaya & Dewayani, (2021), numeracy skills themselves do not focus on the use of mathematics in solving everyday problems but also place reasoning related to three numeracy literacy processes, namely: formulate, employ, and interpret.

Various determining factors influence students' abilities when dealing with problems, including learning style (Yulianci & Nurjumiati, 2020). Each student has a different learning style in terms of the learning process, understanding concepts, solving

mathematical problems, and so on (Susanti Dkk, 2021). Learning style refers to an individual's methods or traits and habits in absorbing, processing, and understanding data information or learning material (Heryani & Ramadani, 2019). Each individual has characteristics or different ways of understanding and obtaining information (Putri dkk, 2019). Students' attitudes in reacting quickly to understanding and solving the problems they face exist students who react quickly without thinking hard, and some students react slowly because they think carefully (Islamiyati dkk., 2019). Therefore, Honey & Mumford (2012) divide learning styles into 4 categories, including activists who are used to new experiences and tend to consider the consequences that will occur, reflectors who tend to observe from various points of view and are careful, and theorists who are cautious. step by step and pragmatists tend to look for new ideas and act quickly in solving problems.

Based on the results of observations at SMP Negeri 02 Gondanglegi, students experienced obstacles in understanding concepts, so they failed to solve questions. The researcher made observations by giving questions to students to work on, in writing down the answers it was proven that literacy-mathematical numeracy skills were still low, and students could not understand the changes in positive and negative signs when moving the number side in an equation.

Several other researchers have investigated this research previously, including (Arifin, 2020), (Fauziah dkk., 2022). Arifin (2020) show that the percentage of students' numeracy abilities that are classified as a low level is 15%, at the medium level it is 65% and at the high level, it is 20%, while research results according to (Fauziah dkk., 2022) limited mathematical problem-solving ability is 65%, solving skills standard mathematics problems are 20% and high numerical problem-solving competencies are 15%. This research complements previous research, this research explores students' numeracy abilities based on a review of learning styles. The main objective of this research is to describe students' numeracy abilities based on Honey and Mumford's learning styles (activist, reflector, theoretical, and pragmatic styles). This research is important to carry out as another alternative that can be considered in finding solutions to improve students' numeracy skills through exploring their learning styles.

RESEARCH METHODS

This research is descriptive with a qualitative approach, meaning that the results of this research are based on data obtained directly during the research process. This research involved 17 students from class VII A at SMP Negeri 02 Gondanglegi. The

following is Table 1, stages of solving numeracy problems based on Honey and Mumford's learning styles.

Table 1. Numeracy Problem Solving Stages

Aspect	Explanation
Formulate	Students can digest the questions well so that they can identify relevant information, the questions asked, and the variables involved, and can formulate appropriate mathematical expressions based on the tabular data provided.
Employ	a. Students can correctly write down solution strategies and write mathematical procedures. b. Students can carry out arithmetic operations correctly to complete mathematical statements that have been formulated and can find answers that match the question request. c. Students can find alternative solutions to these problems.
Interpret	Students can review what has been done and provide conclusions from the results obtained based on the problems faced and the ability to review the results obtained.

Source: OECD in Wijaya & Dewaani, (2021)

Data was collected through learning style assessment instruments, written tests, dialogues, and minutes. The learning style assessment instrument uses Honey and Mumfor's Learning Style Questionnaire (LSQ) d. The LSQ questionnaire consists of 80 questions consisting of several indicators of each learning style. The purpose of administering the questionnaire is to identify and group students based on the learning styles defined by Honey and Mumford. In determining research subjects, the researcher took several student criteria including (1) Representative of 1 student from each learning style, who has the highest score because the researcher wants to find the maximum value of the optimal abilities of each different learning style (2) Equivalent numeracy abilities. The list of selected subjects is presented in Table 2:

Table. 2 List of Selected Subjects Based on Criteria for Students with Honey and Mumford Learning Styles

Learning Style	Student's Initial Name	Average Ability	Subject Code
Activist	CDA	12.33	S06
Reflector	FNH	11.33	S09
Theorist	BRM	12.33	S05
Pragmatic	SHK	14	S015

Next, a written test was carried out containing 3 types of questions, namely knowing, applying, and reasoning with linear equations as material. However, the type of applying question is described further. This is because the type of applying questions can

direct students to produce solutions systematically so that they are easy to analyze further.

The validation results obtained from the two validities are presented in Table 3 below:

Table 3. Results of Test Question Validity Assessment

No	Validator Code	Total Validity Score	Average Score	Category
1	V1	4.42	4.28	Very valid
2	V2	4.14		

Based on the assessment of the validity of the test questions, there is evidence that each validator provides a very valid assessment. This shows that the test questions are valid so they can be used to assess students' numeracy abilities in this research.

The next step is to conduct unstructured interviews after students have completed the written test. The interview aims to complete the data and justify the test answers that have been given regarding students' numeracy abilities. The results of the validation of the interview guide by two validators are shown in table 4 below:

Table 4. Interview Guide Assessment Results

No	Validator Code	Total Validity Score	Average Score	Category
1	V1	21	21	Very good

Based on the results of the validity of the interview guidelines for the two validators, it can be seen that the two validators gave very good assessments.

In each procedure or step carried out by students, there is documentation of important data in the form of completion of research subjects which is useful for analyzing their numeracy abilities. This research uses the Miles and Huberman model data analysis method, including several stages including the data reduction stage, data presentation, drawing conclusions, and data verification by the methodology proposed by Sugiono (as reported in Islamiyati et al., 2019). The data validation test technique applied is the triangulation technique. The approach used in this research is the triangulation method, consisting of the results of written tests, interviews, and documentation collected from subjects in the same activity.

HASIL DAN PEMBAHASAN

The following is a summary of the results of the distribution of learning style assessment instruments.

Table 5. Results of Distribution of Class VII A Learning Style Assessment Instruments Gondanglegi 2 Public Middle School

Number	Student's Initial Name	Learning Style	Subject Code
1.	ABZ	Pragmatic	S01
2.	ANM	Pragmatic	S02
3.	A.I	Reflector	S03
4.	BNZ	Pragmatic	S04
5.	BRM	Theorist	S05
6.	CDA	Activist	S06
7.	CLS	Pragmatic	S07
8.	DAF	Reflector	S08
9.	FNH	Reflector	S09
10.	HE	Reflector	S010
11.	MNK	Pragmatic	S011
12.	M.F	Theorist	S012
13.	MFM	Pragmatic	S013
14.	RFF	Pragmatic	S014
15.	SHK	Pragmatic	S015
16.	TA	Pragmatic	S016
17.	WDD	Pragmatic	S017

Based on Table 5, it is known that from a total of 17 respondents to this questionnaire, 1 student has an activist learning style, 5 students have a reflector learning style, 2 students have a theoretical learning style, and 9 students have a pragmatic learning style. This can be seen from the number of students who filled out the learning style assessment instrument, there are more students with a pragmatic learning style than other learning styles.

Based on the analysis of the results of the distribution of learning style questionnaires, four students with appropriate learning preferences were selected as research subjects. Subjects are asked to take tests to evaluate their ability to solve daily life problems. After the work was completed and the subject had checked again, the researcher interviewed to explore the subject's ability to solve problems, especially to clarify things that had not been revealed through the results of his work.

The following are the performance results of individual subjects using activist, reflector, theoretical, and pragmatic learning approaches on *applying type questions* :

1) Numeracy Ability of Students with an Activist Learning Style

In the formulate section, the subject records the existing information, and the questions asked are based on all the information in the question

In the interpreting section, the subject was less precise in writing the conclusion

Figure 1. S06 Test Results with Activist Learning Style on *Applying Type Questions*

The written answers in Figure 1, It was confirmed that subject S06 had a solid understanding of solving *applying* type questions. At the *formulating stage*, S06 did not accurately describe what knowledge was known and what was being asked, but at this *formulating stage*, S06 students identified based on what was understood from the information available on the problem. According to Akbar et al (2017), students tend to solve questions more routinely by ignoring the *formulating stage* because students feel that these steps are not needed and are considered a waste of time. Apart from that, they do not understand how to determine existing information, and the questions asked are based on all the information in the question, this can be seen from the results of S06's work.

Meanwhile, at the *employ stage*, S06 was able to write down the solution strategy and carry out mathematical procedures correctly, apart from that S06 was able to carry out mathematical calculations correctly and was unable to find other alternative solutions. At the *interpretation stage*, S06 was able to review the final results of the settlement, But we still can't write down exactly the conclusions we got from this problem. According to Kurniawati & Kurniasari (2019), subjects who, when solving PISA content *space questions*, have logical-mathematical intelligence, may not see the relevance of the results to the real-world context, even though all the conclusions given are appropriate. Therefore, the level of numeracy ability in *applying type questions*, S06 obtained a percentage of 8.25%. S06

demonstrated expertise in completing mathematical procedures correctly but had difficulty expressing knowledge in writing. This is similar to the opinion of Riana & Fitrianna (2021), difficulties arise because students do not know the concepts, students do not understand the material, cannot conceptualize and analyze it well, and lack mastery and understanding of existing concepts.

2) Numeracy Ability of Students with Reflector Learning Style

Figure 2. S09 Test Results with Reflector Learning Style on *Applying Type Questions*

Based on the explanation of subject S09's answer, the researcher analyzed that S09 did not write the separation variable. At the formulation stage, S09 wrote down known *facts* and questions asked but with errors in the writing. S09 immediately made a mathematical sentence from the problem, namely 30,000 + 2,000 (x) = 40,000. According to Risywandha, et al. (2018), there are several possible causes for subjects making mistakes in writing facts that are already known from the question, one of which is that the subject is less detailed in recording the information in the question, even though the subject can understand the questions in the question. Subject errors can also be caused by an inability to understand number symbols in algebraic concepts and numbers that represent nominal values.

At the *employ stage*, S09 can carry out mathematical calculations according to the solution procedures for the concept of linear equations correctly. This is proven in the

steps written on the answer sheet by writing that the final result of the solution is x = 5, while in the *interpreting* stage, S09 can review the answers that have been obtained by substituting the value of x into the mathematical sentence that was written previously, but S09 is not quite right in making the conclusion, namely "so the excess goods sent is 5 ". This can be interpreted as the ability *to employ* and *interpret* on S09 is quite good. During learning, S09 was very responsive in carrying out routine exercises given directly by the teacher. According to Basir (2015) *Field Independent* (FI) is less adept at concluding mathematical statements and has not been trained in evaluating the validity of arguments. Routine training given by the teacher will be less useful if the subject cannot digest the concept well, this can result in the subject having difficulty understanding symbols or interpreting conclusions.

This situation can be concluded that the level of numeracy ability in *applying type questions* shows a percentage of 68.75%. S09 is inaccurate in recording all known facts and all questions asked by taking into account all available information, even though S09 understands what should be written in the settlement. S09 could not find another alternative answer to this question. Likewise, when the work was finished, S09 did not see or recheck the final results that had been obtained. According to Talantu et al . (2023), once students have found a solution, their work may not always be accurate unless they check it.

3)   **Students' Numeracy Ability with Theoretical Learning Style**

Figure 3. S05 Test Results with Theoretical Learning Style on *Applying Type Questions*

Based on the results of the written test, subject S05 was able to understand and solve *applying type questions* competently. At the *formulation stage*, S05 was able to carry out the numeration stage in writing even though it seemed like he was rushing to write. S0 5 Write down what is known (the weight of goods is more than 10 kg and shipping costs are 40,000), and write down what is asked, namely "how much more goods?", and be able to carry out mathematical expressions by writing mathematical models.

At the *employ stage*, S05 was able to write down the solution strategy and carry out mathematical procedures correctly, this can be seen in the work step S0 5. Apart from that, S05 was able to carry out mathematical calculations correctly and find other alternative solutions. The first alternative, S05, found that the excess weight of the shipped goods was 5 kg. The second alternative, S05 found that the excess weight of the shipped goods was 2 kg. Students who can come up with alternative solutions are students who can implement mathematical principles in the context of everyday life or connect them with other scientific disciplines (Suwardi, 2022). Meanwhile, at the *interpreting stage*, S0 5 can review the results of the solution by substituting the value x into a mathematical sentence, even though it is not quite correct in writing " *looking back*". In the process of writing the conclusion, S05 was able to write correctly "the excess weight of the item is 5 kg", but in alternative solution 2, the subject did not provide a conclusion. The low *interpretive* abilities of students with a theoretical learning style tend to be caused by didactic barriers. According to Suryadi in Rahmi & Yulianti (2022), didactic obstacles are learning obstacles that arise from the approach or tools used by the teacher. The lack of suitability of the learning approach chosen by the teacher makes the subject unable to act as a superior problem solver.

Applying type test questions with theoretical learning style subjects, the results showed that the level of numeracy ability showed a percentage of 93.75%. S05 was less able to write exactly what was asked. According to Rosydiana (2017), students who do not write solutions according to standard solution steps cannot be considered capable of solving problems. The question is considered not well understood by the subject, or the subject may be able to record the information already known and the questions asked, even though it is not completely complete.

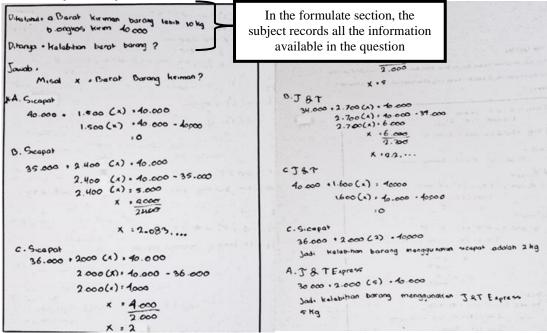**4) Numeracy Ability of Students with Pragmatic Learning Style**

Figure 4. S015 Test Results with Pragmatic Learning Style on *Applying Type Questions*

Based on the results of the written test, Subject S0 15 was able to understand and solve *applying type questions* very well. In the activity at the *formulate stage*, S015 was able to record all the information available in the question "the weight of the shipment was more than 10 kg and the shipping cost was 40,000", apart from that S015 was able to accurately describe what was asked, the example variables, and design mathematical sentences. According to (Latifah & Afriansyah, 2021) the subject describes the information that is already known in the problem to guide and simplify the next steps in solving. This shows that the subject has read and understood the problem, as well as identified the elements that are already known and those that are being asked so that they can determine the next action needed to reach the final solution to the given problem. S05 is seen creating mathematical sentences to check almost all delivery services in different cities.

Meanwhile, at the *employ stage*, S015 was able to write precisely the solution strategy and mathematical procedures used in each mathematical sentence designed. In line with (Nurlaili et al, 2022) Subjects with high literacy are skilled in formulating situations in the form of mathematical models, making solution steps, and implementing principles, apart from that subjects are also able to solve them to the end and find other

alternative solutions correctly. At the *interpretation stage*, S015 was able to review the solutions obtained and provide conclusions according to the problem.

The level of numeracy ability in *applying type questions* shows a percentage of 100%. This means that students can record accurately what they already know and are asked about, and when carrying out mathematical procedures students tend to use practical methods and various solutions from different goods delivery services. This is comparable to the opinion (Fadlilah & Siswono, 2022) that students who have creative talents when solving problems are students who have the following criteria: (1) competent in handling problems according to their characteristics, (2) able to solve problems with various alternative solutions, (3) able to utilize various problem-solving strategies, then design innovative and distinctive strategies.

SIMPULAN DAN SARAN

Based on the research that has been conducted, conclusions can be drawn based on Honey and Mumford's learning style theory regarding students' numeracy skills:

1. Students who tend to have an activist learning style have low numeracy abilities. Students tend to be spontaneous and careless in reading, so that information cannot be written down completely, even if the final result is correct. Students' inaccuracy in reading and finding information can be seen in the conclusion of a misinterpreted final result. Students' sensitivity to new situations or experiences makes them react spontaneously without deep reflection.

2. Students who tend to have a reflector learning style have moderate numeracy abilities. Students adhere to procedural solutions, so they easily get trapped in passive routines. This affects students' understanding of concepts which tends to be less in-depth and students are less creative in problem-solving.

3. Students who tend to have a theoretical learning style have high numeracy abilities. Students are systematic in solving problems, adhere to procedures, control the final results by reviewing them, and are creative in coming up with different alternative solutions, even if there is only one alternative solution.

4. Students who tend to have a pragmatic learning style have very high numeracy abilities. Students not only are careful and systematic in solving problems, but students are also able to review them. Students can show creativity in problem-solving by providing many alternative solutions.

This research has limitations, including the research material is only a system of linear equations and the research topic is limited to students' numeracy abilities by looking at the learning style perspective according to Honey and Mumford. Suggestions for further research on the topic of numeracy include a study of students' numeracy abilities in terms of ability levels such as the *Adversity Quotient (AQ) type* so that a study of numeracy abilities in students with various types of intelligence is obtained.

DAFTAR PUSTAKA

Akbar, P., Hamid, A., Bernard, M., & Sugandi, AI (2017). Analysis of Problem-Solving Abilities and Mathematical Disposition of Class Xi Students of Sma Putra Juang in Opportunity Material. *Scholar's Journal: Journal of Mathematics Education*, *2* (1), 144–153. https://doi.org/10.31004/cendekia.v2i1.62

Arifin, M. (2020). Numbered Head Together (NHT) Learning Strategy in Increasing Student Interest in Learning Statistics Material. *Didactical Mathematics*, *2* (2), 10. https://doi.org/10.31949/dmj.v2i2.2074

Basir, MA (2015). Students' Reasoning Ability in Mathematical Problem Solving Viewed from Cognitive Style. *Unissula FKIP Mathematics Education Journal*, *3* (1), 106–114.

Basri, H., Kurnadi, B., Tafriliyanto, CF, Bayu, P., Madura, U., & Kotabumi, UM (2021). Investigation of Numeracy Ability. *Proximal: Journal of Mathematics Research and Mathematics Education*, 4, 72–79.

Fadlilah, C., & Siswono, TYE (2022). Students' Creative Thinking Ability to Assimilate and Converge in Solving Numeracy Problems. *MATHEdunesa*, *11* (2), 548–561. https://doi.org/10.26740/mathedunesa.v11n2.p548-561

Fauziah, N., Roza, Y., & Maimunah, M. (2022). Students' Mathematical Problem Solving Ability in Solving AKM Numeracy Type Questions. *Scholar's Journal: Journal of Mathematics Education*, 6 (3), 3241–3250. https://doi.org/10.31004/cendekia.v6i3.1471

Han, W., Susanto, D., Dewayani, S., Pandora, P., Hanifah, N., Miftahussururi., Nento, MN, & Akbari, QS (2017). Numeracy Literacy Support Material. *Ministry of Education and Culture, Ministry of Education and Culture GLN Team. , 8* (9), 1–58.

Heryani, Y., & Ramadani, R. (2019). Analysis of Students' Mathematical Problem-Solving Abilities Based on the Honey-Mumford Model Learning Style. *Journal of Metaeducation; Journal of Educational Sciences, 1* (2), 66–71.

Honey, P., & Mumford, A. (2012). Mumford and Honey Learning Styles questionnaire. *The Institute of Legal Finance and Management*, 10. https://www.mint-hr.com/mumford.html

Islamiyati, I., Nugroho, AA, & Ariyanto, L. (2019). Profile of Mathematical Problem Solving Ability on SPLDV Material Seen from Reflective Cognitive Style. *Imaginaries: Journal of Mathematics and Mathematics Education*, *1* (6), 300–305. https://doi.org/10.26877/imaginer.v1i6.4857

Kurniawati, I., & Kurniasari, I. (2019). Students' Mathematical Literacy in Solving Pisa Questions on Space and Shape Content Seen from Multiple Intelligences. *MATHEdunesa*, *8* (2), 441–448.

Latifah, T., & Afriansyah, EA (2021). Difficulties in Students' Mathematical Problem Solving Ability in Statistics Material. *Journal of Authentic Research on Mathematics Education (JARME), 3* (2), 134–150.

Nurlaili, N., Fauzan, A., Yerizon, Y., Musdi, E., & Syarifuddin, H. (2022). Analysis of

Students' Mathematical Literacy in the Integral Calculus Course. *Scholar's Journal: Journal of Mathematics Education*, 6 (3), 3228–3240. https://doi.org/10.31004/cendekia.v6i3.1734

Pangesti, FTP (2018). Developing Literacy. *Indonesian Digital Journal of Mathematics and Education*, 5 (9), 566–575.

Putri, FE, Amelia, F., & Gusmania, Y. (2019). The Relationship Between Learning Style and Active Learning in Mathematics on Student Learning Outcomes. *Education: Journal of Mathematics Education Research*, 2 (2), 83. https://doi.org/10.32939/ejrpm.v2i2.406

Rahmi, L., & Yulianti, K. (2022). Learning Obstacles Faced by Students in Understanding Relationship and Function Topics. *Journal of Innovative Mathematics Learning*, 5 (4), 929–940. https://doi.org/10.22460/jpmi.v5i4.929-940

Riana, & Fitrianna, AY (2021). Analysis of difficulties in solving opportunity questions for class IX junior high school students in terms of Bloom's taxonomy. *Journal of Innovative Mathematics Learning*, 4 (4), 1019–1032. https://doi.org/10.22460/jpmi.v4i4.1019-1032

Risywandha, I., & Khabibah, S. (2018). Literacy Mathematics Class X high school students in solving PISA model questions were reviewed of Gender Differences. *Scientific Journal of Mathematics Education*, 2 (7), 248-255.

Rosydiana, A.-. (2017). Analysis of Students' Ability to Solve Story Problems Based on Polya's Problem Solving Steps. *Mathematics Education Journal*, 1 (1), 54. https://doi.org/10.22219/mej.v1i1.4550

Sanvi, AH, & Diana, HA (2022). Analysis of Numeracy Ability in Matrix Material. *Journal of Mathematics Education*, 3 (2), 129–145.

Susanti, E., P, NC, Susanti, E., P, NC, Susanti, E., & P, NC (2021). *Students' Mathematical Problem-Solving Ability Judging from Honey Mumford's theoretical Learning Style STKIP Singkawang (Mathematics Education, STKIP Singkawang) STKIP Singkawang (Mathematics Education, STKIP Singkawang) Corresponding Author: evisusanti2806@gm.* 7, 1–8.

Suwardi. (2022). Analysis of Mathematical Connection Ability in Transformation Material for Class Xi Students of SMK Negeri 1 Lahusa, *Journal of Mathematics Education.* 44 (01), 4–6.

Talantu, E.G., Monoarfa, J.F., & Regar, V.E. (2023). Analysis of Problem-Solving Ability According to Polya for Class VIII Students of SMP Negeri 3 Kombi on the Material of Building a Flat Side Room. *Scholar's Journal: Journal of Mathematics Education*, 7 (3), 3292–3303. https://doi.org/10.31004/cendekia.v7i3.2726

Wijaya, A., & Dewaani, S. (2021). Minimum Competency Assessment Framework (AKM). *Research and Development and Books Agency, Ministry of Education and Culture*, 1–108.

Winata, A., Widiyanti, ISR, & Sri Cacik. (2021). Analysis of Numeracy Ability in Developing Minimum Ability Assessment Questions for Class XI High School Students to Solve Science Problems. *Journal of Education FKIP UNMA*, 7 (2), 498–508. https://doi.org/10.31949/educatio.v7i2.1090

Yulianci, S., & Nurjumiati. (2020). Analysis of the Characteristics of Students' VAK (Visual, Auditory, Kinesthetic) Learning Styles in Physics Learning. *Journal of Mathematics Education*, 10 (1), 40–44. https://doi.org/10.37630/jpm.v10i1.328