

Analysis of Students' Mathematics Numeration Literacy In SPLDV Problems Viewed From Visual And Auditory Learning Styles

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ABSTRACT

Education has a vital role to face these challenges, education is a means of preventing risk, as well as a tool that can help improve the quality of human life in a sustainable manner. For this reason, current education is expected to be able to develop students to think creatively, be flexible, solve problems, collaborate, and innovative skills needed for success in work and life. This study aims to explore the abilities and factors that influence students' numeracy literacy in solving problem problems in terms of visual and auditory learning styles in the material of the Two-Variable Linear Equation System. The type of research used in this research is qualitative research. Meanwhile, the method used is a case study. The case study method was chosen in order to be able to answer the research questions posed, namely to explore numerical literacy abilities and the factors that influence students' numeracy literacy in the SPLDV problem in terms of visual and auditory learning styles. Based on the results of the study, it can be concluded that students' mathematical numeracy literacy skills in SPLDV problem problems in terms of visual and auditory learning styles in class X TKR students and class X TB students at SMK Al-Hikmah Bakalrejo are still unsatisfactory where students in class X TKR only achieve an average of 60.7% of the practice questions worked on, while class X TB students only achieved an average of 38.9% of the practice questions worked on. This shows that the level of numeracy literacy is still low at the Al-Hikmah Bakalrejo school.

Keywords: *Mathematical Numeracy Literacy, SPLDV, Visual, and Auditory Learning styles.*

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INTRODUCTION

In the current era of globalization, it takes people who have the skills to discover new concepts, open networks, and have the competence to meet high work standards. The people needed at this time are not just those who are able to understand certain knowledge, but deeper than that. Currently, people are required to make optimal use of their knowledge so that they are smarter and more critical in receiving and processing information. This is very important to support increasingly complex problem solving according to Rosalia (2015, 173).

Education has a vital role to face these challenges, education is a means of preventing risk, as well as a tool that can help improve the quality of human life in a sustainable manner. For this reason, current education is expected to be able to develop students to think creatively, be flexible, solve problems, collaborate, and innovative skills needed for success in work and life. Education is expected capable equip students, with the ability To apply knowledge in everyday life according to Rosalia (2015, 173).

According to the OECD (PISA 2012, p.37), mathematical literacy is an individual's ability to formulate, apply, and interpret mathematics in various contexts. Based on information from the teacher of SMK Al-Hikmah Bakalrejo, the level of student understanding can be seen from various fields, one of which is the level of numeracy literacy. Numerical literacy is the knowledge and skills to use various numbers and

symbols related to basic mathematics to solve practical problems in everyday life and then analyze the information presented in various forms and interpret the results of the analysis to predict and make decisions (Kemendikbud, 2017). Learning style or *learning style* is a characteristic of cognitive, affective, and psychomotor behavior, as an indicator that acts relatively stable for students to feel interconnected and react to the learning environment (NASSP in Ardhana and Wills, 1989:4). Based on the description above, the problem formulation of this study is (1) students' numeracy literacy skills in solving SPLDV problem problems in terms of visual and auditory learning styles (2) factors that influence students' mathematical numeracy literacy skills in solving SPLDV problem problems in terms of visual learning styles and auditory.

RESEARCH METHODS

The type of research used in this research is research qualitative. Qualitative research is research to understand the phenomenon of what is experienced by research subjects by means of descriptions in the form of words and language based on observations (Morgono, 2014). The research subjects here were students of SMK Al-Hikmah Bakalrejo consisting of 10 students in class X TKR and 10 students in class X TB. data collection procedures using test sheets, interview techniques, and document analysis. To test the validity of the data in the form of observations, interviews, and

documentation, the researchers plan to use the triangulation technique. Where research data is confirmed by theory, sources, methods, and research time.

The instruments that have been made have been validated by one mathematics lecturer and one mathematics teacher. This validation sheet is used to determine whether the instrument for testing mathematical numeracy skills and interviews is valid and feasible to use. From the validation results of the two mathematician validators, both of them provide an assessment where the results of the assessment are useful for improving test instruments and interviews before being used to carry out the research phase. The assessment is in the form of (1) work instructions formulated clearly and easily understood by students, (2) question sentences are more adapted to achieve the desired indicators.

RESULTS AND DISCUSSION

Based on the results of direct observations in class X TKR and class X TB, when students did exercises on students numeracy skills in the SPLDV problem in terms of visual and auditory learning styles, it was seen that the numeracy level of students in class X TKR and students in class X TB was good. from the visual learning style and auditory learning style are able to do well, it's just that they don't know the numeracy literacy abilities of each student with a visual learning style or students with an auditory learning style.

Table 1. Results of the numeracy literacy test for class X TKR

No.	Name	Total Score
1.	A1	65
2.	A2	60
3.	A3	47.5
4.	A4	65
5.	A5	57.5
6.	A6	77.5
7.	A7	85
8.	A8	55
9.	A9	45
10.	A10	67.5
Average		60.7%

Table 2. Results of the class X TB numeracy literacy skills test

No.	Name	Total Score
1.	B1	47.5
2.	B2	47.5
3.	B3	60
4.	B4	32.5
5.	B5	47.5
6.	B6	15
7.	B7	27.5
8.	B8	60
9.	B9	47.5
10.	B10	40
Average		38.9%

Students who have a visual learning style reach 8 students while students who have an auditory learning style reach 12 students, this can be seen from the indicators of visual and auditory learning styles and is supported by interviews between the teacher and students in class X TKR and X TB SMK Al-Hikmah Bakalrejo.

Table 3. Student learning outcomes at SMK Al-Hikmah Bakalrejo

Student	Visual	auditorial
TKR	4	6
TB	4	6
Total	8	12

One student with a visual learning style was selected as a research subject to choose the answer from the given numeracy literacy test. The selected students are students who have the highest scores on the numeracy literacy test. A10 students are among the students who have the highest scores in the visual learning style.

Table 4. Student work results A10

Question	Question Score
1.	8
2.	8
3.	5
4.	6
5.	0
Total score	67.5

One student with an auditory learning style was selected as a research subject to choose the answer from the given numeracy literacy test. The selected students are students who have the highest scores in the numeracy literacy test. A7 students are among the students who have the highest scores in the auditory learning style.

Table 5. Student work results A7

Question	question score
1.	8
2.	8
3.	6
4.	6
5.	6
Total Score	85

Judging from the results above, it can be concluded that the level of mathematical numeracy literacy in terms of visual and auditory learning styles is quite good, but they are not fully aware of their numeracy literacy, this is supported by the results of interviews between teachers and

students of SMK Al-Hikmah Bakalrejo. The teacher explains the factors that influence students' numeracy literacy skills, namely (1) Lack of interest in reading from students related to mathematical numeracy literacy, for example at the beginning of a meeting in a certain chapter, students are given assignments by the teacher to read the material first before being explained by the teacher then students understand the material as best they can, (2) literacy habituation that is not often done so that when students encounter math literacy questions they still feel unfamiliar with these questions because they are not used to it, (3) facilities that are less supportive to help students understand literacy.

In connection with the understanding of numeracy literacy above, the teacher also explained that differences in learning styles greatly affect the understanding of each student. This can be seen when the teacher explains without writing on the blackboard about SPLDV material, there are still many students who don't understand, so the teacher must continue to give scribbles on the blackboard later students will understand again. After conducting interviews with students, most of the students in class X TKR and students in class X TB said that the questions given during the observation in the form of test sheets were difficult questions because there had to be an understanding of reading the story model questions first before doing them. Coupled with the different learning

styles of each student, they still complain when they encounter problems in the form of stories that involve everyday life and do not know the first steps that must be taken and what formulas or concepts should be used to be able to solve these contextual problems, because of all the students feel that questions like those in SPLDV material are very difficult.

With a different way of learning for each student, it will certainly affect the level of understanding in learning, especially in mathematics. Most of the students in class X TKR and class X TB students listened to the teacher's explanation, this means that many students are included students with an auditory learning style, from this habit, students when explained by the mathematics teacher are very influential in the way the teacher delivers and also the conditions in the class. They admit that the situation in the class is often noisy so with an auditory learning style they find it difficult to understand the material provided, especially mathematics.

CONCLUSION

Based on the research conducted, it can be concluded that (1) after going through an interview test with the teacher and seeing from the indicators of visual learning styles and indicators of auditory learning styles, students with visual learning styles reached 8 students while students with auditory learning styles reached 12 students. It can be concluded that from the two classes students are more dominant in having an auditory learning style, (2)

after testing the students' numeracy literacy skills in the SPLDV questions, they are still unsatisfactory where students in class X TKR only achieve an average of 60.7% of the exercise questions done, while students in class X TB only achieved an average of 38.9% of the practice questions they worked on. However, from these results students with an auditory learning style are superior in the analysis of students' mathematical numeracy literacy skills. This can be seen in the results of students' numeracy literacy test work from the upper group and the results of interviews with teachers and students of class X TKR and students of class X TB, (3) factors that influence mathematical numeracy literacy skills in SPLDV problem questions in terms of visual learning styles and auditory learning at Al-Hikmah Bakalrejo Vocational School, including the lack of interest from students to study mathematical numeracy literacy in the material of the Two-Variable Linear Equation System (SPLDV). Facilities from the school environment are also inadequate to support literacy activities, including mathematical numeracy literacy in the material on the System of Two Variable Linear Equations.

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