STUDENTS NUMERACY SKILLS ON SOCIAL ARITHMETIC PROBLEMS IN CONTEXT OF OPI TOURISM

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Article info	Abstract
	This research uses descriptive technique and aims to determine student numeracy skills on Social Arithmetic Problems in Context of OPI Tourism. Students can more easily solve problems related to our daily lives if they have good numeracy skills, which is also important for students. The subjects have been taken from class VI students in Palembang, totaling 3 people from odd semester students in the 2022/2023 academic year. While the data collection techniques used by researchers are interview tests and written tests. The indicator that often appears is using various numbers and symbols related to basic mathematics to solve problems in various contexts of everyday life and interpreting the results of the analysis to predict and make decisions Then, the indicator that rarely appears is analyzing the information displayed in various form (graphs, tables, charts, diagrams, etc).

INTRODUCTION

Knowledge prepares all of them for the acquisition of conventional literacy and numeracy skills (Neumann, et al, 2013). Numerical abilities are needed to learn mathematics. Numeracy is an element of health literacy that refers to the ability to understand numbers (Peters, et al, 2007). In the use of learning mathematics in our daily lives, the skills, behaviors, and knowledge needed by a person are called numeracy abilities (OECD, 2019). For adults, numeracy skills are extremely important for all countries desired to be on the higher ranks of the global value scale (Grotlüschen, et al., 2019). This event usually occurs in students' mathematical skills in recognizing and understanding the role of mathematics in the world and having the disposition and capacity to do so (Han, et al., 2017). Students can more easily solve problems related to our daily lives, therefore if they have good numeracy skills and also important for students (Pangesti, 2018; Putri & Muzakki, 2019).

Numeracy is the student's ability to understand what symbols, numbers, and basic mathematics are and analyze real-life situations used in everyday life (Muta'ali, 2020). To develop numeracy skills in students correctly from an early age, teachers must be familiar with and understand the flow and development of numeracy skills (Anthony & Walshaw, 2009). Numeracy skills included in the intervention include numeracy skills such as verbal and counting skills, subitizing, adding and subtracting objects, comparison skills, and logical skills (Mononen, 2014). Numeracy skills are one of the most important things in current situation (OECD and Statistics Canada, 2000). It is important because related to problem solving in our daily lives (Pangesti, 2018). Students who have good numeracy and literacy skills will be able to get other knowledge more easily and quickly (Rakhmawati, 2022). In early childhood, letter identification and numerals are correlated, and some evidence shows a relationship between numeracy skills and letter identification (Neumann, et al, 2013). Numeracy skills play a key role in shaping the future of societies in the digitalizing world. It has been seen also that numeracy skills have also a higher effect on the development and growth of their countries (Atasoy, & G*üdü*, 2020). One of the determining factors for the success of the community through their work can be seen in their numeracy skills (Tyler, Murnane, & Willett, 2000; Green & Riddell, 2001). The human ability to use concepts, formulate, interpret, apply, explain events, describe procedures, and do reasoning is what can interpret a numeration (Ekowati et al., 2019). Learning that can show the existence of numeracy skills is called social arithmetic.

Students' knowledge of arithmetic material is still not really good (Fatmala, 2020). These students are still classified as lacking or low when working on questions on social arithmetic material because these students experience difficulties when working on the problem. Students consider that one of the difficult lessons is social arithmetic material. Some students still experience difficulties understanding the problem in social arithmetic Andayani (2019). The questions on social arithmetic material are in the form the relationship between mathematics and daily activities (Oktaviana, 2021). Social arithmetic learning in mathematics is material that must be mastered and is certainly important to learn. Social arithmetic related in everyday life, for example: profit and loss, interest rates, discounted, prices and tax calculations, transactions occur, regarding finance (Sari, Susanti, and Rahayu (2018); Ahmad (2020); Bela (2021)). Since the social arithmetic material is closely related to daily life, the students need to understand it (Rahayu, et al, 2021). But, even though social arithmetic relates to everyday life, most students do not understand social arithmetic material (discounts, net, selling prices, buying prices, tare, etc.), especially in buying and selling goods that one can do alone (Hasibuan, 2023).

Context is needed so that it can help students develop their abilities in numeracy. Using context to elevate the culture in society toward learning mathematics is something that is really needed at this time (Kurniawan, 2022). Model formation, skill practice, application, and concept formation are positive aspects of the using of context (Usdiyana, 2009). The existence of a learning with context can lead students to the mathematical concepts used (Febrian, 2019).

Based on the explanation described above, the researcher is interested in conducting research with the title "Students Numeracy Skills on Social Arithmetic Problems in Context of Opi Tourism".

RESEARCH METHODS

This study uses descriptive research and aims to determine students' numeracy skills used in social arithmetic math problems using the tourism context of OPI Palembang. As well as the research subjects used by researchers, taken from class VI students in the odd semester of the 2022–2023 academic year, totaling 3 people. These three students were selected from students with high, medium, and low abilities who had been recommended by the teacher. Data collection techniques used by researchers include test questions and interviews. Whereas in the data analysis technique in this study for the written test, the researcher will analyze the data using a descriptive method.

By outlining and describing the results of student answers based on existing indicators. In the analysis of interview data, researchers conducted interviews with research subjects to see how students answered the questions that had been given. The students' numeracy ability can be seen from the results of the test questions given.

The following are indicators used by researchers on numeracy skills, which are explained in the table below:

Tabel 1.
Indicator of Numeracy Skills

No	Indicator
1.	Using various numbers and symbols related to basic mathematics to solve problems in various contexts of everyday life.
2.	Analyze information presented in various forms (graphs, tables, charts, diagrams, etc.)
3.	Interpret the results of the analysis to predict and make decisions.

(Han, et al., 2017:3)

RESEARCH RESULTS AND DISCUSSION

This researcher describes the results of student answers that have been carried out through tests. Researchers used test questions with social arithmetic material as well as with the tourism context at OPI Waterfun. Here is the problem:
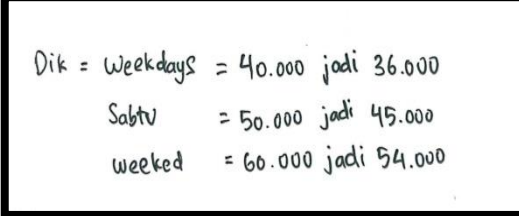

QUESTION 1

One day, OPI Waterfun held a promo via e-ticket and collaborated with Indomaret. Promo days are divided into three categories: weekdays (Monday–Friday), Saturdays, and weekends (Sundays and national holidays). If you look at the picture beside it, which day has the biggest discount? And explain how to find the discount!

QUESTION 2

If Tomo, Nira, Sena, and Intan swim on Tuesday, what percentage of the total discount do they get?
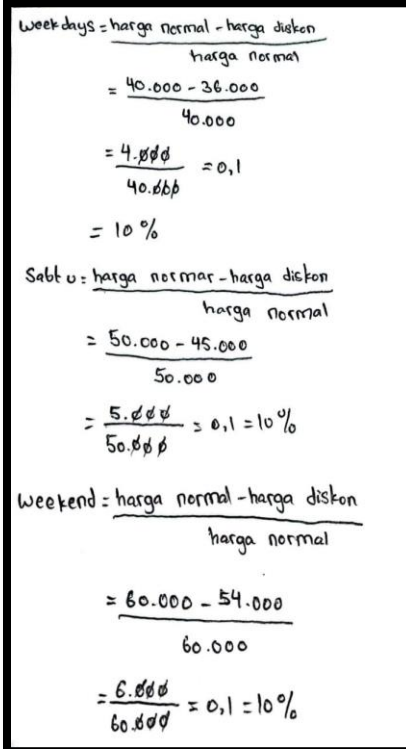
RESEARCH RESULT

Researchers used data collection techniques in the form of test questions. Researchers will see what the indicators are for emerging numeracy skills. It can be seen from the results of the students.

Figure 1. Answers to Question 1 DS

Based on Figure 1, the DS students can analyze information presented in the brochure. From these answers, it can be seen from the way DS students write down what is known about the information in the problem. For indicator 2, the DS student has answered the question correctly.

Figure 2. Answers to Question 1 DS

Based on Figure 2, the DS student can use various numbers and symbols related to basic mathematics to solve problems in this context. As seen from the student's answer, he uses a formula to solve the problem and has answered the question correctly.

Figure 3. Answers to Question 1 DS

Based on Figure 3, the DS students can interpret the results of the analysis to predict and make decisions. It is seen from the student's answer that the decision is made that the discount price is the same, namely 10%, DS students have also answered this question correctly.

Figure 4. Answers to Question 2 DS

Based on Figure 4, the DS student also writes down what he knows about the information from the problem, namely that a 20,000 discount is given if a minimum purchase of 100,000 is made. It is as form of analyzing information presented in the brochure DS students have answered the question correctly.

Figure 5. Answers to Question 2 DS

Figure 5, the DS students using the formula to find what percentage of the discount is to solve the problem and this student can also answer the question correctly. It is as form of using various numbers and symbols related to basic mathematics to solve problems in various contexts of everyday life.

Figure 6. Answers to Question 2 DS

In Figure 6, the DS can makes the decision that each child gets a discount of 25%. DS students have also answered this question correctly. It is indicator 3 as interpreting the results of the analysis to predict and make decisions.

Figure 7. Answers to Question 1 GA

In Figure 7, the GA students do not see the indicator that appears, namely indicator 2. In this answer, the indicator that does not appear is due to the absence of displaying information separately and regularly, for example, by not making up anything that is known. GA students have seen indicators that appear in GA students' answers, namely indicator 1 because the student has used the formula to solve the problem and has answered the question correctly. For the third indicator, the indicator has appeared because the student has decided that the biggest discount falls on Tuesday. But this answer is not quite right.

Figure 8. Answers to Question 2 GA

In Figure 8, it can be seen that there are two indicators that appear for GA students and one that is not visible. In the GA student's answer to question 2, it turned out that there was no indicator 2 because the student did not display information separately and regularly, for example, and did not make up anything that was known. The indicator that appears in the GA student's answer is indicator 1 because the student has used the formula to solve the problem, and the answer is correct. As well as in the answers of GA students, it has been

seen that there are three indicators for GA students. This is because the student has already decided that the discount is 25%. This student has answered correctly.

Figure 9. Answers to Question 1 FA

In Figure 9, the answers of FA students do not show indicator 2. This is because students do not present information separately and regularly FA students do not make up anything they know. It has been seen that there is indicator 1 in the answers of FA students because the student has used the formula to solve the problem and has answered the question correctly. Meanwhile, in the third indicator, FA students have seen their indicators. This is because these students have decided that the biggest discount falls on Tuesday. But this answer is not quite right.

Figure 10. Answers to Question 2 FA

In Figure 10 of FA students, indicator 2 is not visible because there is no display of information separately and regularly. There is an indicator from the FA student's answer that has emerged, namely indicator 1. From the student's answer, he has used the formula regarding discounts to solve the problem. But the student misunderstood the question, where the question described that a 20,000 discount was given when the minimum payment was 100,000. But GA students think that $20,000 is a discount per person, and there is no minimum purchase. Then, there is no visible indicator 3 in the answers of GA

students. This is because there is no conclusion from the questions he answered. Interviews with FA students were conducted, and when asked whether a discount of Rp. 20,000 is given per person without a minimum. He also back to reading the problem, and saw that to get a discount of Rp. 20,000, he must buy a minimum of Rp. 100,000.

From the description above, there are still students who do not understand and are not careful about the questions above. This is in line with Sari et al. (2018), who state that when students work on word problems, they are still lacking in terms of accuracy, misunderstandings in converting story problems into mathematical models, and a lack of understanding of the mathematical concepts given.

DISCUSSION

This research was conducted by giving students test questions regarding problems from social arithmetic material and using the OPI Paembang tourism context. After the students were given these questions, the researcher conducted interviews based on the results of their answers. Based on the descriptions of the answers of DS students, GA students, and FA students regarding "Students Numeracy Skills on Social Arithmetic Problems in Context of Opi Tourism", on high-ability subjects, namely, the DS is able to write answers correctly; this is in line with (Baharuddin, 2020). It has been seen that the above students rarely elicit, analyze, information presented in various forms (graphs, tables, charts, diagrams, etc.). Then, indicators that often appear include using various numbers and symbols related to basic mathematics to solve problems in various contexts of everyday life and interpreting the results of the analysis to predict and make decisions. Students are able to describe in their minds what a math problem is because it relates to their lives and is in a real-life situation (Baharuddin, 2020).

The researcher took three people for research data because the three students had given answers that varied and were not monotonous; therefore, the researcher felt that it was enough to collect data. This is also in line with Zakiah et al.'s (2019) finding that learning that connects material with everyday life can give students a lot of experience in interpreting problems and may also foster varied ideas for solving problems.

CONCLUSION

The conclusions from this study, "Students Numeracy Skills on Social Arithmetic Problems in Context of Opi Tourism," with indicators are that the indicators that appear most frequently are using various kinds of numbers and symbols related to basic mathematics to solve problems in various contexts of everyday life. But indicators that rarely appear involve analyzing information presented in various forms (graphs, tables, charts, diagrams, etc.). This indicator rarely appears because in social arithmetic, many students answer directly with mathematical models and not through pictures.

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