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Analysis of Numeracy Literacy Skills of Participants Students Class VIII SMPN 33 Makassar City

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Abstrak

Penelitian ini adalah penelitian deskriptif dengan pendekatan kuantitaif yang bertujuan untuk mendeskripsikan tingkat kemampuan literasi numerasi peserta didik kelas VIII SMPN 33 kota Makassar tahun pelajaran 2022/2023 pada aspek kompetensi numerasi. Populasi penelitian ini adalah peserta didik kelas VIII SMPN 33 Makassar. Teknik sampling yang digunakan adalah *purposive sampling* sehingga sampel dalam penelitian adalah 30 peserta didik. Instrumen penelitian berupa soal pilihan ganda sebanyak 20 butir. Teknik pengumpulan data yaitu dengan pemberian tes secara langsung di sekolah. Data dianalisis dengan analisis statistik deskriptif. Hasil penelitian yang diperoleh adalah tingkat kemampuan literasi numerasi peserta didik kelas VIII SMPN 33 Makassar berada pada kategori "sangat rendah" dengan nilai aspek level kognitif penerapan 30,32, dan nilai aspek konten bilangan 36,55.

Kata Kunci: *literasi numerasi, aspek kompetensi numerasi*

Abstract

This research is a descriptive study with a quantitative approach that aims to describe the level of numeracy literacy skills of class VIII students of SMPN 33 Makassar city in the 2022/2023 academic year in the numeracy competency aspect. The population of this study were students of grade VIII of SMPN 33 Makassar. The sampling technique used was purposive sampling so that the sample in the study was 30 students. The research instrument was in the form of multiple choice questions as many as 20 items. The data collection technique is by giving tests directly at school. Data were analyzed by descriptive statistical analysis. The results obtained are the level of numeracy literacy skills of class VIII students of SMPN 33 Makassar is in the "very low" category with the value of the cognitive level aspect of application 30.32, and the value of the number content aspect 36.55.

Keywords*: numeracy literacy, numeracy competency aspects*

Introduction

In reading literacy and numeracy, competency assessment involves logical-systematic thinking skills, the ability to reason using learned concepts and knowledge, and the skills to sort and process information (Puspendik, 2021). Achievement of scientific content, including scientific explanation (52.49%) and scientific inquiry (28.47%), ranked second with a percentage of 40.48%. Lack of understanding of human phenomena and

activities was identified as the cause of the low percentage in the content aspect (Nofiana, 2017). Improving students' skills in understanding natural phenomena is suggested by teachers' participation in science literacy development (Sari, 2015).Numerasi adalah kemampuan menerapkan konsep dan keterampilan matematika dalam memprediksi, memecahkan, dan mengambil keputusan terkait masalah dalam kehidupan sehari-hari, mendapat perhatian dalam kurikulum (Kemendikbud, 2017). Numerasi tidak hanya terbatas pada mata pelajaran matematika, tetapi juga dapat ditemukan dalam konteks lain dan diterapkan dalam situasi kehidupan sehari-hari (Han, 2017:3).

International surveys show that math literacy (numeracy) in Indonesia is still low. PISA 2027 gave a score of 379, placing Indonesia in the bottom 10 out of 79 countries. TIMSS 2015 results placed Indonesia 45th out of 50 countries with a score of 397 for math skills. The 2021 National Assessment shows that 2 out of 3 students have not achieved the minimum competency in numeracy literacy.Hasil penelitian menunjukkan bahwa kemampuan literasi sains siswa diukur dari aspek konteks ilmiah, konten ilmiah, dan kompetensi ilmiah. Rata-rata skor literasi sains siswa adalah 18,81 dari skor total 37, dengan persentase keseluruhan aspek konteks, konten, dan kompetensi literasi sains siswa sebesar 50,48%, yang tergolong rendah. Faktor-faktor seperti pemahaman konsep sains dalam kehidupan sehari-hari dan partisipasi guru dalam pengembangan literasi sains diidentifikasi sebagai pengaruh utama pada rendahnya pencapaian literasi sains.

Numeracy literacy research in class VIII students of SMPN 33 Makassar City is relevant considering the important role of numeracy in understanding and mastering learning materials and in problem solving. Data on numeracy literacy in grade VIII students of SMPN 33 Makassar City is still limited, and this research aims to fill the gap.

Method

The type of research used is descriptive research with a quantitative approach. In the research, data collection was carried out using a test of students' numeracy skills. The research was conducted at SMPN 33 Makassar City. The total number of samples used was 31 class VIII students. The research was conducted by collecting data using a test assessment instrument in the form of a test on numeracy literacy. The instrument used in the study was a test consisting of 20 statement items that had been analyzed so that the item factors were valid, reliable, and included in the good or high category. From these two aspects, namely the cognitive level aspect and also the content aspect, this research focuses on the application indicators at the cognitive level of students and also on the number indicators of the content aspect to know the numeracy literacy skills of students of SMPN 33 Makassar City. as for the classification of indicators of literacy and numeracy levels of students.

To calculate the level of students' science literacy skills, the following formula can be used:

$$NP = \frac{R}{SM} \times 100$$

(Sugiyono, 2019)

Description:

NP = Numeracy literacy score

R = Number of question scores answered correctly

SM = Maximum score of the test

SM = Maximum score of the test

The interpretation of the students' numeracy literacy achievement score is interpreted descriptively based on the categories according to Nofiana & Julianto (2017) in the following table:

Table 1. Interpretation of the Achievement of the Literacy and Numeracy Classification of Learners

Interval	Categories
18 – 20	Sangat Tinggi
15 – 17	Tinggi
12 – 14	Sedang
9 – 14	Rendah
0-8	Sangat Rendah

(Nofiana & Julianto, 2017)

Results and Discussion

1. Results

a. Table 2. Cognitive Aspects of "Applying"

Sample List	Applying					Total	Score
	1	2	3	4	5		
Sample 1	0	0	0	0	1	1	20
Sample 2	0	0	0	0	0	0	0
Sample 3	0	0	0	1	0	1	20
Sample 4	0	0	0	0	0	0	0
Sample 5	1	0	0	1	0	2	40
Sample 6	0	0	1	0	1	2	40
Sample 7	0	0	1	0	0	1	20
Sample 8	0	0	0	0	1	1	20
Sample 9	0	1	0	1	0	2	40
Sample 10	0	0	0	0	1	1	20
Sample 11	1	0	1	1	0	3	60
Sample 12	0	1	0	1	0	2	40
Sample 13	1	0	1	1	0	3	60
Sample 14	0	0	0	0	1	1	20
Sample 15	0	1	0	1	0	2	40
Sample 16	0	1	0	1	0	2	40
Sample 17	1	0	0	0	1	2	40
Sample 18	0	0	0	1	0	1	20
Sample 19	1	0	1	1	1	4	80
Sample 20	0	0	0	0	0	0	0
Sample 21	0	0	1	1	0	2	40
Sample 22	0	0	0	0	1	1	20
Sample 23	0	0	1	0	1	2	40
Sample 24	0	0	1	0	1	2	40
Sample 25	1	1	0	0	0	2	40
Sample 26	1	1	0	0	0	2	40
Sample 27	0	0	0	0	0	0	0
Sample 28	1	0	0	0	0	1	20
Sample 29	0	0	1	0	0	1	20
Sample 30	0	0	0	1	0	1	20
Sample 31	0	0	1	0	1	2	40

b. Table 3. Content aspect "Numbers"

Sample List	Numbers						Total	Score
	1	2	3	4	5	6		
Sample 1	0	0	0	0	0	1	1	16,66667
Sample 2	0	1	0	0	0	0	1	16,66667
Sample 3	0	0	0	0	1	0	1	16,66667
Sample 4	0	0	0	0	0	0	0	0
Sample 5	0	0	1	0	1	0	2	33,33333
Sample 6	0	0	1	1	0	1	3	50
Sample 7	0	1	0	1	0	0	2	33,33333
Sample 8	0	0	1	0	0	1	2	33,33333
Sample 9	1	0	0	0	1	0	2	33,33333
Sample 10	0	1	0	0	0	1	2	33,33333
Sample 11	0	1	0	1	1	0	3	50
Sample 12	1	0	0	0	1	0	2	33,33333
Sample 13	0	1	0	1	1	0	3	50
Sample 14	0	1	0	0	0	1	2	33,33333

Sample 15	1	1	0	0	1	0	3	50
Sample 16	1	1	0	0	1	0	3	50
Sample 17	0	1	0	0	0	1	2	33,33333
Sample 18	0	1	1	0	1	0	3	50
Sample 19	0	0	0	1	1	1	3	50
Sample 20	0	1	1	0	0	0	2	33,33333
Sample 21	0	0	0	1	1	0	2	33,33333
Sample 22	0	0	1	0	0	1	2	33,33333
Sample 23	0	1	1	1	0	1	4	66,66667
Sample 24	0	1	1	1	0	1	4	66,66667
Sample 25	1	1	1	0	0	0	3	50
Sample 26	1	1	1	0	0	0	3	50
Sample 27	0	1	0	0	0	0	1	16,66667
Sample 28	0	1	1	0	0	0	2	33,33333
Sample 29	0	0	0	1	0	0	1	16,66667
Sample 30	0	0	0	0	1	0	1	16,66667
Sample 31	0	1	0	1	0	1	3	50

This research was conducted at UPT SPF SMPN 33 Makassar with a sample size of 31 students in class VIII. Descriptive analysis data can be seen in Table 3.

c. Table 4. Descriptive Statistics of numeracy Literacy Skills on the Cognitive Aspect Indicator "Application"

	Statistic
N	31
Mean	30,32
Standard Deviation	18,25
Max	80
Min	0

Table 4. shows that the average score of students' numeracy literacy skills is 30.32 with a standard deviation of 18.25 The highest score obtained is 80 and the lowest score is 0 from the ideal score of 100.

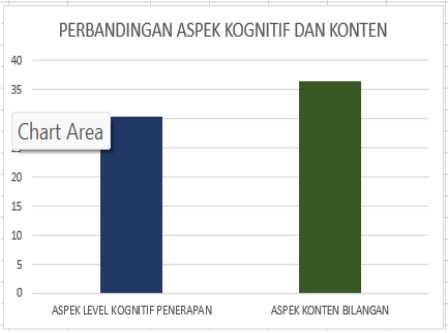
d. Table 5. Descriptive Statistics of Numeracy Literacy Skills on Indicators of the Content Aspect "Numbers"

	Statistic
N	31
Mean	35,42
Standard Deviation	16,8
Max	66,7
Min	0

Table 5. shows that the average score of students' numeracy literacy skills is 35.8 with a standard deviation of 16.8 The highest value obtained is 66.7 and the lowest value is 0 from the ideal score of 100.

In Table 1. shows that the interval of numeracy literacy results from low 0 to very high is 100. Where it can be seen from the data that in the cognitive level aspect there are 4 students who are in the interval 0 or very low, half of the sample gets medium and high categories and 1 person who is very high, while in the content aspect, namely numbers that 4 people get very low categories, most of the sample gets medium and high categories, and 8 people who are very high. So it can be said that this content aspect is easier for students to do than the cognitive level aspect, with an average of 30 for the cognitive level, and 35 for the content aspect.

Histogram 1.1 Bar Chart on Cognitive Level Aspects with Content Aspects



Judging from the histogram data above, the number indicator in the content aspect

is higher than the application indicator in the cognitive level aspect, namely with an average of 36 and 30.

2. Discussion

This research was conducted at UPT SPF SMPN 33 Makassar with a sample size of 29 students in class VIII. The purpose of this study was to determine the numerical literacy of students at SMPN 33 Makassar to evaluate students' attitudes towards science learning. Based on the research data obtained, we focus on two indicators, namely on the application indicator in the cognitive level aspect, and also the content aspect of the number indicator, where the results obtained from 29 students the average average obtained is 36 on the number indicator, while the application indicator is 30, which indicates that the numeracy literacy of students obtained from these two aspects and indicators is 'very low'. from these two aspects, it can be seen that the number indicator is higher than the application indicator which indicates that students find it easier to answer questions on the content aspect than the application indicator aspect. Cognitive level indicates the thinking process that is required or necessary to be able to solve a problem or problem. In math-numeracy literacy, the cognitive level is divided into three levels, namely knowing (knowledge and understanding), applying (application), and reasoning (reasoning). Meanwhile, the content aspect refers to the domain covered in the minimum competency assessment. In math-numeracy literacy, the content is divided into four groups, namely number, geometry, data and uncertainty, and algebra. So it can be said that the level of cognitive level of this C3 application is higher than the content aspect of numbers, so it is difficult for students to answer it even so the data is not too far in comparison, where we see the difference from the content aspect and the cognitive level itself. Higher order thinking skills are part of the cognitive domain of Bloom's taxonomy. In general, in Bloom's taxonomy, it is divided into two categories, namely lower order thinking and higher order thinking. The abilities included in LOT are the ability to remember, understand, and apply, while HOT includes the ability to analyze, evaluate, and create (Brookhart, 2010). Ashshaddiqah (2021) stated that the ability in this student context can only measure a topic, but various contexts, cognitive levels, and content.

1. Context indicates the aspect of life or situation for which the content is used. Context in numeracy literacy can be divided into three, namely personal, socio-cultural, and scientific.
2. Cognitive level indicates the thinking process that is required or necessary to be able to solve a problem or problem. In math-numeracy literacy, the cognitive level is divided into three levels, namely knowing (knowledge and understanding), applying (application), and reasoning (reasoning). The importance of having advanced thinking skills in education is an effort to prepare critical and creative human resources so that we can answer the challenges and demands of the 21st century. The better a person's higher-level thinking skills, the better his ability to develop strategies and tactics to win free competition in the global era. In addition, the development of advanced thinking talent is very important for students to develop skills and abilities of participants comprehensively students critically, systematically, logically, applied, analytically, evaluatively, creatively, problem solving and honest judgment and independent confidence, responsible and independent (Widihastuti, 2015: 83).

Conclusion

Numeracy Literacy Skills in Cognitive Level Aspects on application indicators and Numeracy Literacy Skills in Content Aspects in class VIII students of smpn 33 Makassar city are 30.32 and 36.55 in the category because most students do not answer questions correctly. We recommend that numeracy literacy skills at the cognitive level and content aspects be further improved by reading and working on questions.

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Profil Penulis

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