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How is the Mathematical Connection Ability of Post-pandemic Class IV Elementary School Students in Whole Numbers Material?

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ABSTRACT

This study aims to analyze the mathematical connection ability of elementary school students in the material as whole counting numbers, and categories and based on indicators of mathematical connection ability. The subjects were students from Class IV as many as 114 elementary school students. This research is qualitative descriptive research using a purposive sampling technique. The research instruments used were a mathematical connection ability test and an interview. The indicators of the ability of mathematical connections measured include the relationship of mathematics with mathematics, the relationship of mathematics with other sciences, and the relationship of mathematics with everyday life. The results showed: (1) an overall mathematical connection ability of 24% including the category of less; (2) based on the category of mathematical connection ability showed that 49% of students are very less, 37% less Category, 7% Category enough, 7% Good category and 0% very good category; (3) the ability of mathematical connections based on indicators a) the relationship of mathematics with mathematics by 18% (very less Category), b) the relationship of mathematics with other sciences by 35% (less category), and c) the relationship of mathematics with everyday life by 17% (very less category). This shows that the ability of mathematical connections is still not owned by the fourth-grade students of elementary school and requires attention and further development by teachers and the school.

Penelitian ini bertujuan unruk menganalisis kemampuan koneksi matematis siswa sekolah dasar pada materi bilangan cacah secara keseluruhan, kategori dan berdasarkan indikator kemampuan koneksi matematis. Subjek penelitian adalah siswa dari kelas IV sebanyak 114 siswa sekolah dasar. Penelitian ini merupakan jenis penelitian deskriptif kualitatif dengan menggunakan teknik purposive sampling. Instrumen penelitian yang digunakan adalah tes kemampuan koneksi matematis dan wawancara. Indikator kemampuan koneksi matematis yang diukur meliputi: hubungan matematika dengan matematika, hubungan matematika dengan ilmu lain dan hubungan matematika dengan kehidupan sehari-hari. Hasil penelitian menunjukan: (1) secara keseluruhan kemampuan koneksi matematis sebesar 24% termasuk kategori kurang; (2) berdasararkan kategori kemampuan koneksi matematis menunjukan bahwa 49% siswa berkemampuan sangat kurang, 37% kategori kurang, 7% kategori cukup, 7% kategori baik dan 0% kategori sangat baik; (3) Kemampuan koneksi matematis berdasarkan indikator a) hubungan matematika dengan matematika sebesar 18% (kategori sangat kurang), b) hubungan matematika dengan ilmu lain sebesar 35% (kategori kurang), dan c) hubungan matematika dengan kehidupan sehari-hari sebesar 17% (kategori sangat kurang). Hal ini menunjukan bahwa kemampuan koneksi matematis masih belum dimiliki oleh siswa kelas IV sekolah dasar dan memerlukan perhatian serta pengembangan lebih lanjut oleh guru maupun pemangku kebijakan lainnya.

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INTRODUCTION

The Covid-19 pandemic has had an impact on all lines, especially in the education sector at various levels, including the elementary education level (SD) (Tampubolon et al., 2021). This situation forced the entire learning system in elementary schools to change. Learning at this time uses online learning or distance learning which has the principle that learning is done from home (Irfan et al., 2020; Kemendikbud, 2022). In the process, the teacher must supervise every student's development in terms of various aspects such as cognitive, affective, and psychomotor (Aswat et al., 2021). Teachers had to adjust to the current pandemic situation in all subjects including mathematics. In its implementation, online learning poses problems, especially with various mathematical abilities that students must have perfectly (Reich et al., 2020; Zaharah et al., 2020; Sakiah & Effendi, 2021).

Submission of mathematics learning material during the pandemic was delivered through videos made by the teacher, learning through google meet or zoom meetings, and individual assignments (Jamaluddin et al., 2020). It can be concluded that learning is done in a limited way. In practice, online mathematics learning is not as maximal as learning that is done face-to-face in class. Meanwhile, learning mathematics requires learning that is optimally designed. Because mathematics is a fundamental science in the life of every individual. Mathematics has the characteristics to train students to be able to think logically, systematically, and critically and be able to solve mathematical problems in everyday life.

In online learning, the delivery of material is only limited to concepts in general without being associated with other concepts or with everyday life. Field facts show that after the pandemic period ended, the learning carried out by teachers had not yet led to solving problems related to everyday life. As well as the connection between mathematical concepts and the connection with other concepts has not yet appeared. This is because the teacher is still focusing on students' conceptual and procedural understanding in solving simple math problems. The habit that exists in schools is still focused on understanding concepts, namely memorizing multiplication. This is in line with Utami and Cahyono (2020) which stated that multiplication material was the material that students considered the most difficult, especially during a pandemic with all the limitations in teaching. Limitations of learning during the pandemic forced teachers to repeat basic math material because students' level of understanding of this material was still low (Amran et al., 2021). Teachers also play an extra role in teaching post-pandemic mathematics to students. They have various roles in the classroom which are a particular challenge in teaching mathematics. So that the development of mathematical abilities is still ignored.

Meanwhile, after the pandemic, elementary school students were required to have various mathematical abilities. This is stated in the rationale and objectives of learning mathematics at the basic education level in the independent curriculum, namely facilitating students to develop skills in understanding every mathematical concept (Kemendikbud, 2022). In the early stages, the independent curriculum was only implemented in grades I and IV. Field facts state that in mathematics lessons in grade IV, the material that is most difficult for students to understand based on teacher and student interviews is whole number operations. Whole numbers are the basis for other numbers in mathematics. So that when students can master whole numbers, it will be easier to understand other numbers or other mathematical material.

The material in mathematics is conveyed by the teacher through the learning process in the classroom. Through the process of learning mathematics students can develop various abilities that must be possessed. There are five abilities in learning mathematics that students must have according to the independent curriculum, namely mathematical problem solving, proof and mathematical reasoning, mathematical connections, mathematical representations, and mathematical communication. One of these capabilities is the ability of mathematical connections. Mathematical connection is the student's ability to link between mathematical concepts, connecting mathematical concepts with other concepts (across other fields) and with everyday life, and presenting mathematical concepts into various mathematical representations (Kemendikbud, 2022).

Mathematical connection when viewed from the perspective of constructivism theory describes that in learning mathematics this ability is the ability to " connect ". Linking or linkage here is defined as a link between new knowledge and old knowledge of students. This is used by students to strengthen their understanding of the relationship between an idea, concept, or various mathematical representations. In line with this, Rohendi and Dulpaja (2013) stated that mathematical connections originate from the connection between various mathematical concepts, mathematical topics, and the use of mathematics in various fields and everyday life.

Mathematical connection ability is very important for students to achieve their understanding (García-García & Dolores-Flores, 2018). Students will have competent abilities and will assume that learning mathematics is a fun activity when the teacher has been able to create learning based on mathematical connections in the form of relationships between mathematical concepts, relationships between mathematical concepts and other concepts, and with students' daily lives experience (Arthur et al., 2018).

Other concepts here can be defined with other materials or everyday life. In this regard, the elements of mathematics are closely related to everyday life. For example in preparing financial budgets, buying and selling, and other daily activities (Hennessey et al., 2021). Mathematical connection skills can make students understand the usefulness of mathematical ideas and concepts connected to their everyday experiences. Students can connect mathematical ideas and concepts to real experiences and enabling students to solve various problems in context of mathematics and outside the context of mathematics. Based on this statement, shows that the ability to connect is an ability that must be possessed by students, especially in elementary schools. In addition, mathematical connections are students' ability to apply mathematical concepts to other fields or in everyday life (Afifah, 2017). The existing concepts in mathematics will become relevant and make students motivated to learn and more interested in the learning process because it digs students want to know the relevance of mathematics to everyday life (Bernard & Senjayawati, 2019).

Referring to the indicator the mathematical connection is detailed in three indicators namely linking between mathematical concepts, linking between other concepts outside of mathematics, and linking it to everyday life (Agustini et al., 2017). In addition, the mathematical connection indicators consist of: looking for relationships between various representative concepts and procedures, understanding the interrelationships between mathematical topics, using mathematics in other fields or everyday life, understanding equivalent representations of the same concept, and looking for connections with one another procedure in different representations. equivalent and use connections between math topics and between math topics and other topics (Maulida et al., 2019).

Based on the description above, the indicators examined in this study are indicators of mathematical connection ability which consist of recognizing and utilizing the relationships between ideas in mathematics, understanding how ideas in mathematics relate to and underlie one another to produce a coherent whole, and recognize and apply mathematics in contexts outside of mathematics. Simplified The purpose of this study was to analyze the mathematical connection ability of elementary school students based on indicators of mathematical connection ability. The thing that underlies this research is the demands of elementary school students for the abilities that must be possessed after the pandemic in the independent curriculum as the curriculum used at this time. So it is important to analyze this ability as a study, reference, and recommendation for developing student abilities in the future.

METHOD

This research is research that focuses on quantitative descriptive research. The data collection technique uses a mathematical connection ability test instrument. The sample in this study was selected based on criteria, namely students who had received learning on whole numbers material which was selected using a purposive sampling technique. On this basis, it was determined that there were 114 research subjects from class IV of elementary school. In addition to ability tests, interviews were also conducted with students and teachers. The instrument used in this study used test questions describing the ability of mathematical connections as many as 8 questions which were divided into three indicators of mathematical connection. After that, percentages were calculated to describe the level of students' mathematical connection abilities in solving questions on whole number material.

Data processing on questions includes a) Determining the score of student test answers b) Determining and changing scores the results of student answers become percentage values c) Categorizing students based on category scores d) Determining the average score of student answers based on indicators of mathematical connection ability. The score categories in calculating the percentage of test scores are divided into 5 categories, namely very high, high, medium, low, and very low are shown in Table 1.

Table1. Category P percentage achieving mathematical connection ability

Mastery Level	Criteria
81 % - 100 %	Very good
61 % - 80 %	Good
41 % - 60 %	Enough
21 % - 40 %	Not enough
0 % - 20 %	Very less

The scoring procedure in this study was in the form of a score of 1 for the correct answer and a score of 0 for the wrong answer. Then the test scores are categorized based on the 3 mathematical connection indicators and the scores for each indicator are obtained. Data will be analyzed using quantitative so that the mean, median and standard deviation results are obtained. The components of the mathematical connection test and their indicators are described in Table 2.

Table 2. Mathematical connection test components

Material Components	Indicator	Question Number
Addition, subtraction, multiplication, and division of numbers. Count	Recognize and utilize the relationship between mathematical ideas	1,5,8
	Connect mathematical ideas with other concepts	2,6,3
The value and equivalence of currency fractions	Recognize math problems and apply them in everyday life	4,7

RESEARCH RESULT

The results of this study are in the form of data obtained from the results of the mathematical connection ability test as many as 8 questions. The data is used as a description or depiction of mathematical connection abilities in whole number material which is then analyzed based on mathematical connection indicators. The questions have been developed based on mathematical connection indicators. The overall mathematical connection ability test results are in Table 3.

Table 3. Description of mathematical connection ability tes

Category	Top rated	Lowest value	Average	Percentage Value	Standard Deviation
Not enough	75	0	23.9	24%	18.33

Based on Table 3, statistical data is obtained with the highest score of 75 and the lowest score of 0. The average value of students' mathematical connection abilities is 23.9 with a percentage of 24% and a standard deviation of 18.33. The acquisition of the percentage value is included in the less category. If broken down based on the categorization of mathematical connection abilities, the following results are obtained: first, there are as many as 56 students who fall into the very poor category. This is broken down by 16 students obtaining a correct score of 0 (0%) and 40 students obtaining a correct score of 1 (12.5%) in the very poor category. Second, as many as 42 students fall into the less category. In detail, 24 students got a correct score of 2 (25%) and 18 students got a correct score of 3 (37%) in the less category. Third, only 8 students with a correct score of 4 (50%) fall into the sufficient category. And fourth, 8 students fall into the good category with details, as many as 5 students get a correct score of 5 (62.5%) and 3 students get a correct score of 6 (75.0%). Fifth, there are no students who fall into the very good category. This is obtained from the total score of the ability of mathematical connections in all indicators.

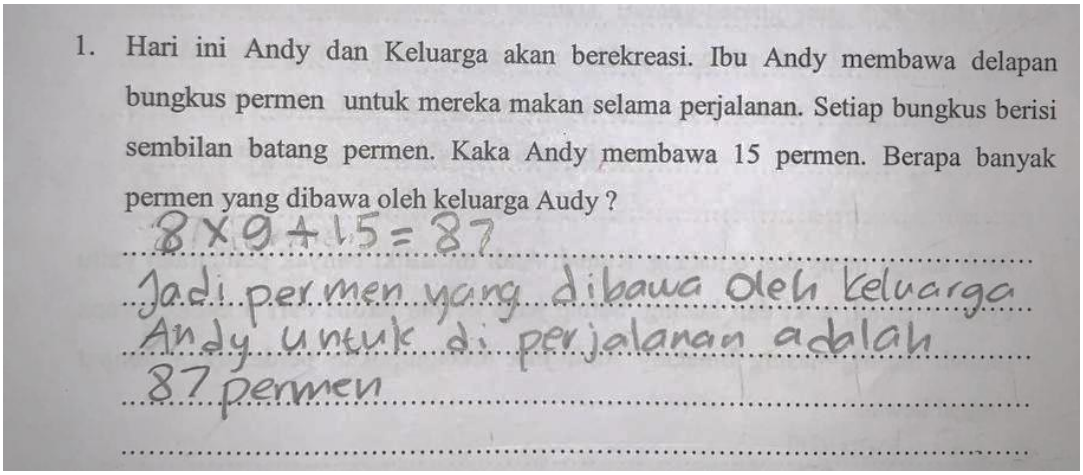
If viewed based on the indicators, the mathematical connection has three indicators, namely recognizing the relationship between mathematical concepts, the relationship between mathematical concepts and other sciences, and the relationship between mathematical concepts and everyday life. The first indicator of

mathematical connection ability, namely the ability to recognize and utilize relationships between mathematical ideas in whole number material, shows the results shown in Table 4.

Table 4. Description of connection test results on indicator 1

$\bar{X}$ question item	$\bar{X}$ Mark	SD	Percentage Value	Category	$\bar{X}$ + SD	$\bar{X}$ – SD
0.54	18.1	23.52	18 %	Very less	41.7	−5.4

Based on Table 4, it is known that students' mathematical connection abilities in the first indicator, namely recognizing the relationship between mathematical ideas in terms of solving whole number questions, obtained an average result of question items of 0.54. In the first indicator, the development of mathematical connection questions includes 3 questions. The average score based on the acquisition of student answers is 18.1. In addition, based on the calculation of the standard deviation on indicator one, the result is 23.52 with a percentage value of 18%. It can be concluded that this score falls into the category of very low or less mathematical connection ability. The questions and the results of student answers on the first mathematical connection indicator, namely recognizing the relationship between mathematical ideas in solving questions on whole number material for grade IV elementary school, can be seen in Figure 1.


1. Hari ini Andy dan Keluarga akan berekreasi. Ibu Andy membawa delapan bungkus permen untuk mereka makan selama perjalanan. Setiap bungkus berisi sembilan batang permen. Kaka Andy membawa 15 permen. Berapa banyak permen yang dibawa oleh keluarga Audy ?

8 x 9 + 15 = 87

Jadi permen yang dibawa oleh keluarga Andy untuk di perjalanan adalah 87 permen

Figure 1. Student questions and answers on indicator 1

Note: Translation for Question and Answer Item 1
Today Andy and his family are going on vacation. Andy's mother brought eight packs of candy for them to eat on the way. Each pack contains nine candy bars. Kaka Andy brought 15 candies. How many candies did Andy's family bring?
Answer :
8 x 9 + 15 = 87
So the candies that Andy's family brought for the trip were 87 candies

Figure 1 shows the work of students with respondent number 89 on question number 1 indicator 1 related to the mathematical connection ability test in grade IV elementary school students on whole number material. The problem developed in number 1 is related to Andy and his family traveling to a creative place. On the way Mother brought 8 packs of candy. Each candy pack contains 9 candies. Then Andy's brother brought 15 more candies. So students were asked to total the number of candies that Andy's family had at that time. One of the student responses to problem number 1 as shown in the picture is that students have been able to solve the interrelationships between mathematical concepts, namely connecting the concepts between addition and multiplication so that the desired results are obtained. Figure 1 is an example of proper student work, namely connecting between mathematical concepts. Then, the mathematical connection ability in the second indicator,

namely connecting mathematical ideas with other concepts based on the development of whole number material questions, can be seen in Table 5.

Table 5. Description of indicator connection capability test results 2

$\bar{X}$ question item	$\bar{X}$ Mark	SD	Percentage Value	Category	$\bar{X}$ + SD	$\bar{X}$ – SD
1.03	34.5	23.01	35 %	Not enough	57.5	11.5

Table 5, it is known that students' mathematical connection abilities in the second indicator, namely connecting mathematical ideas with other concepts in terms of solving whole number questions, obtained an average result of 1.03 items. In the second indicator, the development of questions includes 3 questions. On average, based on the acquisition of student answers, a value of 23.01 was obtained. In addition, based on the standard deviation of the second indicator, the result is 23.01 with a percentage value of 35%. It can be concluded that this score is included in the category of poor mathematical connection abilities.

The questions and the results of student's answers on the second mathematical connection indicator, namely connecting mathematical ideas to other concepts in solving questions on whole number material for grade IV elementary school can be seen in Figure 2.

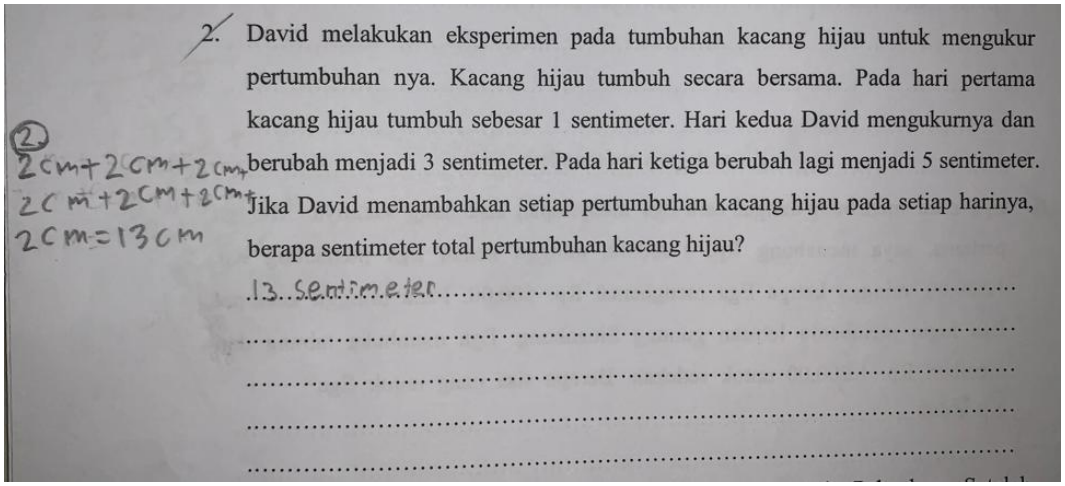


Figure 2. Questions and answers students on indicator 2

Note: Translation for Question and Answer Item 2
David conducted experiments on green bean plants to measure their growth. Green beans grow together. On the first day, the green beans grew by 1 centimeter. The second day, David measured it and it changed to 3 centimeters. On the third day, it changed again to 5 centimeters. If David added up each green bean growth for each day, how many centimeters would the green bean grow in total?
Answer :
2 cm + 2 cm +2 cm + 2 cm + 2 cm + 2 cm + 2 cm = 13 cm
So 13 centimeters

Figure 2 shows the work of students with respondent number 109 on question number 2 indicator 2 related to the mathematical connection ability test in grade IV elementary school students on whole number material. Problem number 2 relates to the concept of the science subject, namely growth in plants. David conducted an experiment on the growth of green beans which he had to measure every day. The problem that must be solved is the total growth of green beans. Figure 2 is one of the responses to student answers related to the problem in number 2. Students cannot look at every word on the growth of the green beans, causing the students' answers to be inaccurate. Furthermore, the third mathematical connection ability on the indicator, namely recognizing mathematical problems and applying them in everyday life by developing questions on whole number material can be seen in Table 6.

Table 6. Description of indicator connection capability test results 3

$\bar{X}$ question item	$\bar{X}$ Mark	SD	Percentage Value	Category	$\bar{X}$ + SD	$\bar{X}$ – SD
0.33	16.7	27.15	17 %	Very less	57.5	11.5

Based on Table 6, it is known that the ability of students' mathematical connections in the second indicator, namely recognizing mathematical problems and applying them in everyday life in terms of solving whole number questions, obtains an average result of items of 0.33. In the third indicator, the development of questions includes 2 questions. On average, based on the acquisition of student answers, a value of 16.7 was obtained. In addition, based on the standard deviation of the third indicator, the result is 27.15 with a percentage value of 17%. It can be concluded that this score falls into the category of very poor mathematical connection abilities.

The questions and results of students' answers on the third mathematical connection indicator, namely recognizing mathematical problems and applying them in everyday life in solving questions on whole number material for grade IV elementary school can be seen in Figure 3.

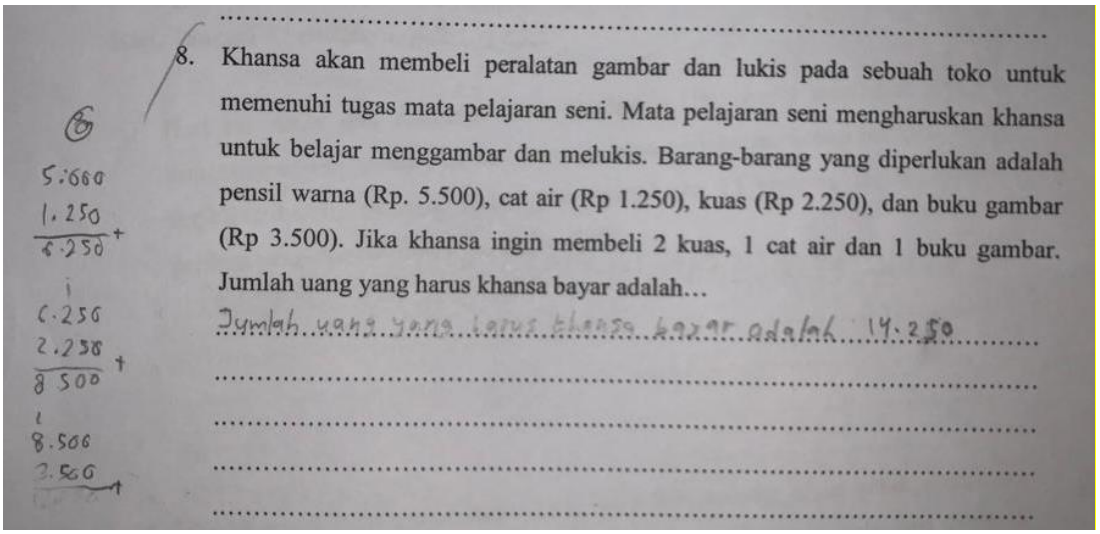


Figure 3. Questions and answers students on indicator 3

Note: Translation for Question and Answer Item 8
Khansa will buy drawing and painting equipment at a shop to fulfill an art subject assignment. Art subjects required Khansa to learn to draw and paint. The items needed are colored pencils (Rp. 5,500), watercolors (Rp. 1,250), brushes (Rp. 2,250), and drawing books (Rp. 3,500). If Khansa wants to buy 2 brushes, 1 watercolor, and 1 drawing book. The amount of money Khansa has to pay is...
Answer :
the amount of money that Khansa brought was 14,250

Problem number 8 in Figure 3 represents a connection indicator that mathematics is closely related to everyday life. The problem developed in this number is that Khansa buys painting and drawing equipment at a shop to fulfill an art subject assignment. Painting Equipment has various types of goods and prices so that, if Khansa students have to calculate Khansa's total purchases according to the number of items that Khansa bought. Then, one of the student responses or answers to this question is that students have not been able to operate addition in solving the problem.

DISCUSSION

Based on the results of the research that has been described, the mathematical connection ability of fourth-grade elementary school students in whole number material is generally in the low category. The results of this study are in line with a study that states that if 50% of students are not able to connect between mathematical

concepts and other concepts then it is said to be low (Prasetia et al., 2020). The ability of mathematical connections when viewed in general and based on the indicators of mathematical connections is as follows.

a. General Mathematical Connection Ability

If viewed in general based on the categorization of students' mathematical connection abilities on whole number material, it can be explained based on 5 categories. The categories consist of: very good, good, sufficient, less, and very fewer categories. This categorization is in line with a study that categorizes mathematical connection abilities into various categories in terms of obtaining a percentage score (Nazaretha et al., 2019). This categorization is intended to group mathematical connection abilities based on their level of ability.

The first category is "very poor" with a percentage term of 0% to 20%, it is found that 49% of the total students fall into this category. In this case, students have not been able to work on mathematical connection questions properly, as concluded from the results of obtaining low test scores. Analysis of student answers in this category shows that students have not been able to understand the meaning of the problem and it takes a long time to understand the meaning of the problem. Meanwhile, students' ability to understand questions, especially story questions, is very important in the initial steps of working on questions. This statement is in line with a study that states that students' ability to understand and interpret each sentence in the problem is very important in solving a problem or problem (Suratih & Pujiastuti, 2020; Kohen & Orenstein, 2021). In addition, it is also consistent with the statement given by the teacher which reveals that students' basic difficulties in mathematics consist of two things, namely difficulty translating the problem into mathematical language and difficulty analyzing the solution to the problem.

The second category, namely "less" with a percentage term of 21% to 40%, results in that reaching 37% of the total students falling into this category. The number of students in this categorization was identified because students had not been able to describe in detail the questions they were working on. Analysis of the answers in this category concluded that students only wrote down the problem-solving briefly with unclear discussion points in the answers. The research findings show that students are not careful in working on problems, giving relevant ideas, analyzing solutions to problems, making mistakes in the calculation process, and finding it difficult to identify the relationship between the meaning of the problem and mathematical concepts or others. Students have not been able to understand the information or the context of the problem in the questions given. This is in line with a study that states that one of the factors that cause students to be wrong in solving problems is that they do not write down in detail and understand the information in the problem properly and systematically (Pradana & Murtiyasa, 2020; Drijvers et al., 2019).

A third category, namely "enough" with a percentage term of 40% to 60%, only 8 students (7%) reached this category. This is because students only understand the material in a basic way. The field findings concluded that students always focused on the basic concepts that were usually explained by the teacher. Students have not been able to apply the concepts they already have to various problems and questions. Meanwhile, mathematical connections require students to be able to apply mathematical concepts and connect mathematical concepts with other concepts and with everyday life (Rohaeti & Bernard, 2018). So the need for habituation trains students to get used to being able to apply the concepts they already have in various contexts.

The fourth category, namely "good" with a percentage term of 61% to 80% results in only 8 students (7%) achieving the ability of that category. Field findings show that the cause of these problems is the lack of students mastering whole number material and the prerequisite material. Students seem to have difficulty connecting mathematical concepts (problems) with other disciplines. In addition, it is not accustomed to learning based on mathematical connections. The low ability of mathematical connections can also be caused by students' lack of curiosity about the material, learning that is always familiar with separate learning, and not linking mathematical concepts to real life.

Based on the level of categorization, there were no students or respondents who reached the very good category with a percentage score of 81% to 100%. The findings of this study indicate that learning in the classroom has not led to learning based on mathematical connection abilities. Post-pandemic mathematics learning still focuses on understanding mathematical concepts because students' basic abilities have not been maximized. Students will find it difficult when learning and questions are developed based on everyday life problems (HOTS questions in the form of stories). In addition, the students' paradigm of the difficulty of mathematics still survives. So it affects the motivation and interest in learning mathematics. This is in line with a study that revealed that good

motivation and interest in learning mathematics will affect students' ability to solve problems (Gazali & Atsman, 2017; Copur-Gencturk, 2021; Levenson, 2013).

b. Findings in the Mathematical Connection Ability Indicator

1) Relationship of Mathematics with Mathematics

The first indicator of the mathematical connection is the ability of students to connect mathematical concepts with other mathematical concepts. The ability of students on this indicator is included in the very low category. The results of students' answers to these indicators are contained in questions number 1.5 and 8 which conclude that students have not been able to connect between concepts in mathematics. This can be seen in students who only focus on one mathematical concept in solving problems. For example, in solving the problem in number 1 (Figure 1) students should associate the concept of addition with multiplication. However, students only focused on one solving concept, namely addition or multiplication. This is reinforced by the student's statement that they have not been able to explain the relationship between the concepts intended in the problem.

Mathematics is not a field of science that stands alone. Mathematics is a field of science that consists of a coherent and complex whole. When students can connect mathematical concepts, they will understand that mathematics is a coherent science. The relationship between concepts in mathematics cannot be separated from one another. In addition, mathematics is also a field of science in which the method of acquisition is carried out systematically (Syafitri et al., 2018). So that the acquisition of knowledge in mathematics is generated gradually and systematically starting from simple to complex knowledge. This indicates that the concepts of mathematics can be said to be interrelated. In learning mathematics, the connection between concepts and their regularity becomes demands that cannot be separated (Abidin et al., 2020).

2) Relations of Mathematics with Other Fields

Students' ability to associate mathematical concepts with other field concepts is the second indicator of mathematical connection ability. The ability of students in this indicator is included in the less category. The results of students' answers to these indicators are contained in questions numbers 2, 6, and 3 which conclude that students have not been able to relate mathematical concepts to other fields. This can be seen in students who only look at math problems from a mathematical point of view. The results of student answers in (Figure 2) show that students do not understand the relationship between mathematical concepts and other sciences. Students still have difficulty understanding the concept of mathematics without connecting it with other fields. It can be seen from the answers of students who have not been able to understand the concepts and intentions in the questions. The ability of students to understand the concept of mathematical material is still difficult, let alone its connection with other subjects. The relationship between mathematical concepts and other subject matter cannot be removed from mathematics. This connection is a mathematical connection where a mathematical connection is an ability to relate mathematical ideas related to topics in other fields (Dreher et al., 2018; Kenedi et al., 2019; Muharomi & Afriansyah, 2022).

The findings in the field state that the low ability of mathematical connections in this indicator is influenced by students' willingness to learn mathematics, especially its connectedness. This is in line with research (Rozi & Afriansyah, 2022) which states that there is a connection between the achievements of students' mathematical abilities and students' mathematical disposition (students' interest in learning mathematics). Students tend to be indifferent and less enthusiastic about learning mathematics because they always think that mathematics is a difficult and unpleasant subject. The low ability of mathematical connections can also be influenced by students' lack of persistence in solving math problems, as well as students' curiosity about math material (Rahayu et al., 2022).

3) Relationship between Mathematics and Everyday Life

Mathematics is a very important subject to study because it is closely related to everyday life (Akbar et al., 2018; Chotimah et al., 2018). On this indicator, the ability of students is still classified into the low category. The results of student answers show that students do not understand the function of mathematics in everyday life. Students only understand that mathematics is one of the subjects in school without understanding its function. The results of students' answers to these indicators are contained in questions number 4 and 7 which conclude that students have not been able to relate mathematical concepts to everyday life. This can be seen in students who have not been able to work on questions or problems properly. The results of students' answers in (Figure 3) show that students do not understand the relationship between mathematical concepts and everyday life. Students still see that mathematics is a lesson that only counts without any connection with everyday life.

Meanwhile, mathematics can be said to be a science that is closely related to humans and is the parent of other sciences. Therefore mathematics has a very important role and position in everyday life. (Effendi et al., 2019) tates that "In the matter of mathematics as a subject that is closely related to the daily lives of students" which means that everyday life is very closely related to mathematics subjects which of course are integrated into various mathematical materials inside it. Field findings found that some students had understood the relationship between mathematics and everyday life but it was still simple. This indicator is the most widely implemented in learning activities in the field. For example, giving questions about raising chickens and the habits that the teacher instills is like asking students to go to the canteen so they can understand the concept of buying and selling. Mathematical connection ability is an ability that can improve students' cognitive abilities such as recalling material that has been studied and its application in everyday life (Siregar & Surya, 2021). The importance of mathematical connection skills is developed in the learning process in the classroom so that students can compile and determine knowledge and skills as provisions for later life (Islamiah et al., 2018).

CONCLUSION

Based on the results and discussion in this study, it was concluded that the ability of mathematical connections in grade IV elementary school material in whole numbers is as follows: a) overall the ability of mathematical connections is in the poor category, b) based on the category of mathematical connection abilities, it shows that there are 56 students including very high categories. lacking, 42 students are in the poor category, 7 students are in the sufficient category, 7 students are in a good category and there are no students who are in the very good category, c) based on indicators of mathematical connection ability, namely the ability of students on the relationship indicator between mathematical topics is included in the very poor category, indicators of the relationship between mathematics and other sciences are included in the poor category and indicators of the relationship between mathematics and everyday life is included in the very poor category.

This research is expected to be able to describe the ability of mathematical connections in general and its indicators so that it can be used as initial information for teachers and principals related to students' mathematical connection abilities. Besides that, it can be used as an initial basis for teachers in developing learning that can improve mathematical connection abilities. This is because the mathematical connection ability is one of the most important mathematical abilities possessed by elementary school students.

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