

# Mathematical Connection Ability of Elementary School Students During the Covid-19 Pandemic

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**Abstract**—The background of this research is the need to associate the mathematics mastery ability of elementary school students during the Covid 19 pandemic, including the mathematical connection ability. This study aims to determine the mathematical connection ability of elementary school students during the Covid 19 pandemic. This research is descriptive qualitative research by conducting interviews, observation, and documentation. Data analysis techniques consist of data reduction, data presentation, and data conclusion/verification. The results of the study concluded that the mathematical connection ability of elementary school students during the Covid 19 pandemic was low. The implication of this study is as a foundation in developing mathematics learning, which can enhance the mathematical connection abilities of elementary school students during the Covid-19 pandemic.

**Keywords**—*mathematical connection, elementary students, pandemic, covid-19*

## I. INTRODUCTION

The world is experiencing a covid 19 pandemic [1-2]. The covid 19 pandemic affects human life systems. This pandemic demands no direct physical contact between individuals [3]. This demand aims to prevent the Covid 19 virus from spreading quickly. These conditions have several impacts on human activities [4]. Individuals who used to carry out direct interactions must restrict it so that many human activities need adjustment.

Activity restrictions are applied in the education system, especially in the learning process [5]. The Indonesian government, through the instructions of the minister of national education, stated that the learning process in elementary schools is from home [6]. This learning process from home applies to all types of education, both formal and non-formal, at every level of education.

Elementary school is the first formal institution in Indonesia to develop basic knowledge and skills [7-11]. From this, elementary schools have a crucial role in developing knowledge and skills. Therefore, the learning process in

elementary schools must run well even during the Covid 19 pandemic.

Learning mathematics is the main learning in elementary schools [12-13]. Mathematics learning has a structured plan that involves thinking, problem-solving abilities, and delivery of information on ideas. Learning mathematics in elementary schools has objectives related to life processes. Learning mathematics will develop the ability of mathematical concepts that can be applied in everyday life [14]. Besides, mathematics learning can also develop students' reasoning skills to make decisions [15]. Learning mathematics can train students to communicate information orally and in writing [16]. Therefore, learning mathematics is necessary to be taught in primary schools during the Covid 19 pandemic.

Learning mathematics is not about understanding mathematical concepts. Many mathematical components need attention to focus on achieving the objectives of learning mathematics. This component is the mathematical connection capability. The mathematical connection is the ability to relate mathematical concepts to other fields, including the connection between mathematical topics, connection with other disciplines, and connections with everyday life [17]. This mathematical connection is crucial to develop to achieve the objectives of learning mathematics during the Covid 19 pandemic. In this case, concrete data is needed. The mathematics learning aims to have definite information about the mathematical connection abilities and to follow up on the development of this mathematical connection ability. Therefore, the purpose of this study is to determine the mathematical connection ability of elementary school students during the Covid 19 pandemic.

## II. RESEARCH METHODOLOGY

This type of research is descriptive research. Descriptive research aims to describe a situation or phenomenon without manipulating the object of research [18].

This research took place at Elementary School 26 Singkarak, Solok Regency. The research subjects were fifth-grade students with a sample of 30 students. The instruments

used in this study were questions about mathematical connection ability. The ability of mathematical connections consists of three indicators, namely the connection between mathematical topics, the connection between mathematics and other disciplines, and the connection between mathematics and daily life. The instrument consists of 15 description questions. The students' answers were then categorized into four categories, namely true (B), partially correct (C), partially incorrect (K), and incorrect (S).

### III. RESULTS AND DISCUSSION

The results showed that the 15 questions tested on students had varied categories in each aspect. Student answers are divided into four categories, namely categories B, C, K, and S. Analysis of student answers can be seen in Table 1.

TABLE I. ANALYSIS OF STUDENT ANSWERS

No	Mathematical Connection Indicator	Category			
		B (%)	C (%)	K (%)	S (%)
1	Connection between mathematical topics		24,1	65,5	10,4
2	Connection between mathematics and other disciplines		27,6	44,8	27,6
3	Connection between mathematics and daily life	10,3	24,1	41,4	24,2
Average		10,3	25,3	50,6	20,7

The answer category analysis from the mathematical connection ability in each aspect is very varied. The indicator of the connection between mathematical topics in category K is very high. This shows that students' ability to comprehend the relationship between mathematical topics is still lacking. The indicator of the connection between mathematics and other disciplines is also dominated by the K category. This shows that students' ability to comprehend the relationship between mathematics and other disciplines is still lacking. Furthermore, the indicator of the connection between mathematics and everyday life is also dominated by the K category. This indicator shows that students' ability to comprehend the relationship between mathematics and daily life is also lacking. In conclusion, the mathematical connection ability of elementary school students during the Covid 19 pandemic was in the poor category.

The mathematical connection ability of elementary school students can be categorized as low. The average percentage of category B is only 10.3%. This is in line with previous research which states that the mathematical connection ability of elementary school students is still in the low category [19-21]. The low ability of mathematical connections during the Covid 19 pandemic was because the mathematics learning process carried out only for the achievement of conceptual understanding. Learning mathematics during the Covid 19 pandemic was not optimal due to limited learning activities

[22-23]. Besides, many teachers do not strive for learning optimally and tend not to carry out the learning process [24].

The low ability of mathematical connections during the Covid 19 pandemic will impact on the achievement of mathematics learning goals. One of the objectives of learning mathematics in elementary school is that students can use mathematical concepts in the process of everyday life in problem-solving activities [25]. Students need to see the connection between topics well to make the right decisions. Therefore, teachers have a big responsibility for the development of mathematical connection abilities of elementary school students.

### IV. CONCLUSION

The results of the study concluded that the mathematical connection ability of elementary school students during the Covid 19 pandemic was low. The implication of this research can be used as a foundation in developing mathematics learning to improve the mathematical connection skills of elementary school students during the Covid 19 pandemic.

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