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Mathematics Learning Activities and the Role of Parents in the Covid-19 Pandemic

Halistin[1]✉, Tandri Patih[2], Hepi Fitriyanti[3]
Tadris Matematika IAIN Kendari, Kota Kendari, Indonesia(1,2,3)

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✉ Corresponding author:
[halistin@iainkendari.ac.id]

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Abstract

This study aimed (1) to determine the students' mathematics learning activities during the Covid-19 pandemic at Rarowatu Utara State Junior High School. (2) knowing the role of parents of students during the Covid-19 pandemic at SMP Negeri Rarowatu Utara. The research method used is descriptive qualitative. The results showed that: 1) students' mathematical learning activities were carried out using the WhatsApp application of online learning. The highest students' mathematics learning activities are in the Writing Activities with a percentage of 22.20%, and the lowest activity is the Emotional Activities, which is 16.39%. 2) The role of parents during the Covid-19 pandemic at SMP Negeri Rarowatu Utara is that the majority of parents act as teachers at home, providing facilities and a comfortable home environment. However, it has not been able to increase knowledge in mathematics subjects.

1. INTRODUCTION

The Covid-19 pandemic that is endemic in Indonesia has forced the Indonesian government to limit face-to-face activities and replace them with online *learning*. The application of online mathematics learning is quite difficult for students and teachers during the Covid-19 pandemic. It can also impact changes in the learning process and student learning activities. Tarigan & Simbolon (2015) stated that student activities are an important part that should not be missed in the learning process. Jamaluddin D. et al. (2020) explained that the nature of learning is currently experiencing difficulties due to the outbreak of Covid-19. Covid-19 is a worldwide pandemic whose spread is exceptionally stressful. Furthermore, public authorities must work together to stem the spread of Covid-19 by providing an approach to allow all citizens to practice *social distancing*. Such a situation requires an instructive institution to improve the learning system. One type of progress is to do internet or *online* (in an educational institution). Suitable student learning activities can also affect the effective running of the learning process. (Sumartono, S., & Normalina, 2015). In addition, online learning also impacts the role of parents in guiding children to learn. As Cahyati, Nika & Kusumah (2020) explained, parents should be able to pay attention to their children's learning at home during online learning. Therefore, the role of parents in this Covid-19 pandemic situation has an absolute position.

Several previous studies conducted by Sari, L. W., Cawang, C., & Kurniawan (2017) have described student learning activities that have not been optimal and aim to see the big picture of the intensity of student learning activities. The difference between the research of Sari, L. W., Cawang, C., & Kurniawan (2017) with this study is that it was conducted before the implementation of online learning during the Covid-19 pandemic and only focused on the intensity of student learning activities. While this study, in addition to knowing student learning activities, also explains more deeply the constraints experienced by students during online learning and understands the role of parents in guiding students to learn online. In addition, previous research was conducted by Hasanah, A. et al. (2020), who described student online learning activities during the Covid-19 pandemic. The difference between the research of Hasanah, A. et al. (2020) with this research lies in the research subject and the addition of the parental role variable. Hasanah, A. et al. (2020) research subjects are students with higher learning independence than students because students are more mature in age. Thoha (2018) explained that one factor that influences learning independence is age maturity. In addition, this study does not discuss the role of parents during the Covid-19 pandemic.

Based on a preliminary study that has been carried out by researchers at SMP Negeri Rarowatu Utara, through initial interviews with several students. . In the interview, it was found that several problems faced by students in students mathematics learning activities during online learning, including that students were less enthusiastic and felt bored when the online learning process took place. Then students find it challenging to understand the material taught by the teacher because they do not get a direct explanation of the material. In addition, online mathematics learning makes students ask their parents about the material they do not understand. This certainly impacts parents, who must provide mathematics learning to their children at home. As explained by (Asmuni, 2020) that current learning feels less effective when compared to direct face-to-face learning because the material contained in the form of files or videos provided by the teacher can make it difficult for students to understand the fabric if it is not explained due to the limitations of the teacher in presenting the material to students.

By looking at the urgency of knowing mathematics learning activities and the role of parents during the Covid-19 pandemic described previously, the researcher intends to examine **"Mathematics Learning Activities and the Role of Students' Parents During the Covid-19 Pandemic Period at SMP Negeri Rarowatu Utara".** This research is expected to get an overview of math learning activities and an idea of the role of parents in guiding their children to learn during online learning during the Covid-19 pandemic.

2. METHODS

This research is a qualitative descriptive study. This research was conducted at SMP Negeri Rarowatu Utara, District Rarowatu Utara, Bombana Regency. This research was conducted in January-February 2021. The population in this study were all students at SMP Negeri Rarowatu Utara. The sample selection was carried out using *Accidental Sampling* to make the research easier. Researchers will distribute questionnaires on students' mathematics learning activities to all SMP Negeri Rarowatu Utara students.

Furthermore, a minimum of 20% was selected from the questionnaire results in each category, namely the high, medium, and low categories to be interviewed. The selection number of students interviewed is at least 20% for a relatively small population. The data collection technique used in this study used a questionnaire (questionnaire). Data analysis techniques include data collection, reduction, presentation, and concluding. The research instruments in this study include a questionnaire on mathematics learning activities, guidelines for interviews with students, guidelines for discussions with teachers, procedures for interviews with students' parents, and documentation.

The grid for the questionnaire instrument for learning mathematics in research can be seen in Table 1.

Table 1. Grid for the Questionnaire Instrument for Mathematics Learning Activities

No	Indicator	Description	Total
1	*Visual Activities*	● Pay attention to the teacher's explanation when giving the material. ● Reading materials	6
2	*Oral Activities*	● Asking the teacher for material that has not been understood ● Students' ability to respond/answer questions	6
3	*Writing Activities*	● Copying/recording subject matter ● Doing assignments	6
4	*Mental Activities*	● Students' ability to solve/answer problems ● Student's ability to understand mathematics	6
5	*Emotional Activities*	● Students' interest and enthusiasm when learning online ● Difficulties of students during online learning	6
	Total		**30**

The scoring scale guidelines used in learning activity questionnaires using the Likert scale can be seen in Table 2.

Table.2. Scoring Rubric of Student Mathematics Learning Activities Questionnaire

Category	Score Item	
	Negative	**Statement Positive Statement**
Strongly Agree (SS)	1	5
Agree (S)	2	4
Hesitating (R)	3	3
Disagree (TS)	4	2
Strongly Disagree (STS)	5	1

The score of the mathematics learning activity questionnaire in this study was categorized using a score of high, medium, and low. The categorization of students' math learning activity scores can be seen in Table 3.

Table 3. Categorization of Students' Mathematics Learning Activity Scores

No	Interval	Category
1	$x > M_i + 1{,}5\ Sb_i$	High
2	$M_i + 0{,}5\ Sb_i < x \leq M_i + 1{,}5\ Sb_i$	Medium
3	$x \leq M_i + 0{,}5\ Sb_i$	Low

Source : (Azwar, 2012)

Description:

$M_i = M_i =$ Mean Ideal Ideal

$Sb_i = Sb_i =$ Standard Deviation

$x = x =$ Score obtained

3. RESULT AND DISCUSSION

3.1 Mathematics Learning Activities

Description of Mathematics Learning Activity Questionnaire

After testing the instrument, the researcher distributed a questionnaire to all SMP Negeri Rarowatu Utara students, totalling 160 students using *Google Forms*. Of 160 students given a questionnaire, 72 returned the questionnaire on their mathematics learning activities. The 72 students were categorized by categorizing scores, namely high, medium, and low. Based on the results of data analysis carried out using software, the results of the data analysis are then presented in Table 4, a description of the student's mathematics learning activity questionnaire.

Table 4. Description of Student Mathematics Learning Activity Questionnaire

No.	Statistics	Value
1	Total (N)	72
2	Lowest Score (Min)	74
3	Highest Score (Max)	120
4	Mode (Mo)	82

Table 1 shows that students' mathematics learning activities have the highest score of 120, while the lowest score is equal to 74. The mode value is 82, while the number of samples is 72. Questionnaire data on students' mathematics learning activities in this study were categorized using high, medium, and low scores. The categorization of these scores can be seen in Table 5.

Table 5. Student Mathematics Learning Activities Based on Category

No	Category	Interval	F	Percentage (%)
1	High	$x > 116$	3	4
2	Medium	$97 < x \leq 116$	40	56
3	Low	$x \leq 97$	29	40
	Total		72	100

Based on Table 5, the high category at the interval $x > 116x > 116$ has a frequency of 3, and the percentage is 4%. The medium category, namely $97 < x \leq 116\ 97 < x \leq 116$, has a frequency of 40, and the percentage is 56%. The low category $x \leq 97x \leq 97$ has a frequency of 29, and the percentage is 40%. The table above shows that most participants have mathematics learning activities in the medium category with a percentage of 56%. Furthermore, the percentage of mathematics learning activities in each category is presented in Figure 1.

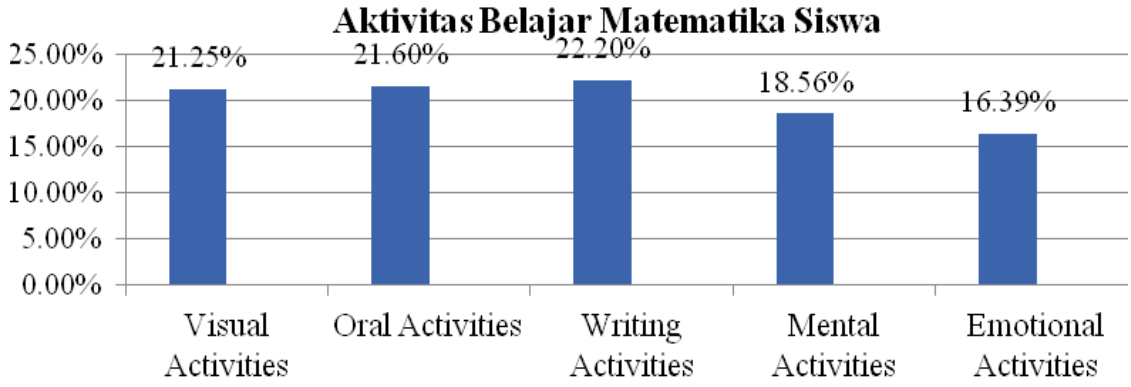

Figure 1. Students' Mathematics Learning Activities

Based on Figure 1, it can be seen that the highest percentage of mathematics learning activities is found in the Writing Activities, with a percentage of 22.20% of the total percentage of 100%. Meanwhile, the lowest percentage of mathematics learning activities is found in the Emotional Activities, with 16.39% of the total percentage of 100%.

Based on Figure 1, it can be seen that the highest percentage of mathematics learning activities is found in the Writing Activities with a percentage of 22.20% of the total percentage of 100%, where writing activities are related to noting math material and doing math assignments. Meanwhile, the lowest percentage of mathematics learning activities is found in Emotional Activities, with a percentage of 16.39% of the total percentage of 100%, where emotional activity is related to feelings of pleasure, boredom, and students' difficulties when learning mathematics online.

Based on the results of observations in the learning process, the cause of indicator of writing activities getting the highest percentage is because when learning mathematics online, students do more of their learning activities by doing the assignments given by the teacher at each meeting. In line with the teacher's presentation when conducting interviews, the online is dominated by providing material in the form of files and sending math assignments through the *WhatsApp* application. This is in line with Rochimah's (2020)

research that students have many tasks during online learning and spend more time at home studying. Thus, students' mathematics learning activities during online learning are mostly done to do the tasks given by the teacher.

Indicators Emotional Activities have the lowest percentage compared to other learning activity indicators because students are not happy and feel bored. This is in line with research by Asmuni (2020) that students feel bored and lazy due to online learning that has been carried out for too long. In addition to being lazy and bored, students also experience difficulties. One of the difficulties for students when learning online is an unstable network. This is in line with research by Ningsih, L. K., & Djumali (2020) that one of the difficulties experienced by students during online learning is the difficulty of the internet network in some areas, especially those who live in remote areas. The results of questionnaires and interviews with students also show that most students are more happy and enthusiastic about participating in face-to-face learning than online learning. This is in line with Arifin's (2020) research, which explains that online/online learning is no more fun than offline/classroom learning. The research results of Mustakim (2020) also stated that students prefer face-to-face learning to online learning. Thus, it is hoped that educators will create more enjoyable online learning so that students are more interested in participating in the learning process.

Results of Interviews with Mathematics Teachers

Data from interviews regarding students' mathematics learning activities were obtained from interviews with mathematics teachers and 17 students. Data from interviews with teachers were obtained by interviewing one of the mathematics teachers at SMP Negeri Rarowatu Utara. Based on the results of interviews with mathematics teachers, it can be seen that mathematics's teaching and learning process is still not running optimally. This is based on the teacher's answers at the time of the interview. There are several difficulties experienced by students when studying online, including not getting an explanation directly from the teacher and the difficulty of networking in the area. At the same time, the difficulties experienced by teachers are the difficulty of providing explanations, understanding and supervision to students while studying. As explained by Asmuni (2020) regarding the constraints of online learning during the Covid-19 pandemic, online learning that is currently applied is less effective when compared to direct learning because the material provided by educators is in the form of files or learning recordings is difficult to understand by students. Combined with educator barriers in providing control during learning. Furthermore, it was observed that the problems experienced by students are that some students live in areas that do not have internet access, which limits the learning applications used. This makes students less active, learning interest decreases, and they experience problems understanding the subject matter.

Results of Interviews with Students

Data from interviews with students regarding mathematics learning activities were obtained by interviewing several students representing each category, namely high, medium and low categories. Descriptions of interviews with students relating to mathematics learning activities can be seen in Table 6.

Table 6. Description of Interviews with Students

No	Category	Number of	Number of	Percentage

		Students	Students Interviewed	(%)
1	High	3	2	67
2	Medium	40	9	23
3	Low	29	6	21
Total		**72**	**17**	

From the table above, the researcher interviewed the students with 10 question items. The results of the interviews are described as follows. Based on the results of interviews with students, whether or not students are focused is more dominated by answers that sometimes focus on the number of participants, as many as 11 participants. My answer reading with 10 participants dominates the question item regarding reading the material. Furthermore, the third question item regarding asking the teacher about the material is more dominated by the answers, sometimes asking with a number of participants as many as 8 participants.

Furthermore, the fourth question item regarding note-taking material was dominated by answers to note-taking material with a total of 15 participants. Then the fifth question regarding always doing assignments was more dominated by the solutions, sometimes working with a total of 11 participants. Then, the sixth question item regarding solving questions is sometimes overlooked by answers with 11 participants.

The seventh question item regarding understanding the material is dominated by the answer I do not understand with a total of 9 participants. Then on the eighth question item regarding feeling happy when learning mathematics online, it was dominated by the answer that I did not feel happy with the number of participants, as many as 8 participants. Furthermore, the ninth question item regarding feelings of boredom and laziness was dominated by the answer I feel bored with the number of participants, as many as 14 participants. Then, the last question item about feeling difficult was dominated by the answer that I found it difficult to learn mathematics online with 16 participants.

The interviews above show that the most prominent question items are student learning activities in doing assignments, feeling bored and lazy in learning, and difficulty understanding the subject matter. This is in line with Jamaluddin D. et al. (2020) research that student activities involve taking notes and doing assignments during online learning. Research Utami, Y. P., & Cahyono (2020) also explained that learning mathematics online has many shortcomings, namely the lack of interaction between teachers and students so that students are hampered in reasoning and understanding mathematics lessons. In addition, in this study, most students felt lazy and bored when learning mathematics online. This is in line with research by Asmuni (2020) that students feel lazy and bored when learning mathematics online because the learning is monotonous and has been applied for too long.

3.2 The Role of Parents

Interview Results from the Role of Parents

Data from parents regarding the role of parents were obtained by interviewing the parents of 17 students who had been previously interviewed, representing all categories. Description of interviews with parents regarding the part of parents of students can be seen in Table 7.

Table 7. Description of Interviews with Parents of Students

No	Category	Number of Students	Number of Parents of Students Interviewed	Percentage (%)
1	High	3	2	67
2	Medium	40	9	23
3	Low	29	6	21
	Total	**72**	**17**	

From the table above, the researcher interviewed the parents of students with 12 questions. The results of the interviews are described as follows. The first question item, related to guiding children to learn, was dominated by answers, sometimes guiding and accompanying by 11 participants. Furthermore, the second question item, regarding giving advice, was dominated by answers that always gave advice and motivation, with 16 participants. Furthermore, the third question item, regarding adding insight, was dominated by solutions that did not add insight and knowledge with 11 participants. Again, the fourth question, regarding creating a comfortable home environment, was more dominated by the answer I tried with the number of participants, as many as 14 participants. Furthermore, the fifth question item, regarding parents' educational background, is dominated by answers that can affect the number of participants, as many as 16. Furthermore, in the sixth question item, regarding learning needs, all 17 participants answered with answers that met the children's learning needs.

Furthermore, regarding the type of work of parents, dominated by the answer can affect the number of participants, as many as 16 participants. Furthermore, in the eighth question item, regarding spending time for children, the answer is dominated by I always try with 9 participants. Again, on the question item, they found it difficult. All participants answered this question with an answer that I found challenging. Furthermore, in the tenth question item regarding the economic level of parents, all participants responded to this question with answers that could influence. Furthermore, regarding the number of family members, the eleventh question item was dominated by answers that could affect as many as 16 participants. Furthermore, in the last question item, regarding the importance of the role of parents, all 17 participants answered this question with an indispensable answer.

In general, the role of parents in guiding children during online learning is fourfold, namely the role of parents as teachers at home, parents as facilitators, parents as motivators and parents as influence/*director.* Concerning the role of parents during online learning described above, it can be seen that the role of parents is necessary for the current online. Based on the results of interviews with parents of students, parents revealed that the role of parents when learning mathematics is very necessary. Parents have a huge role in this online learning. In addition to guiding and assisting in learning, parents must always provide motivation, advice, and attention to their children. This is in line with research conducted by Haerudin H. et al. (2020), which explains that the role of parents toward children has many obligations and responsibilities, one of which is in the field of education. Wherewith education, children get an achievement or even become human beings ready to face challenges in the future.

Based on interviews with parents regarding the difficulties in guiding children to learn mathematics online, parents explained that they found it difficult in several ways. Among them, the parents did not understand the mathematical material asked by the child. Then several parents revealed that they did not know how to operate a *mobile phone.* In addition, parents must also be good at dividing their time between work and accompanying children to study. The difficulty of parents in guiding their children is in line with research by Khalimah

(2020), which explains that, in general, the obstacles of parents in accompanying children to study at home during childhood are: the Covid-19 pandemic is the lack of understanding of the material, the difficulty of parents in cultivating children's interest in learning, not having enough time to accompany their children because they have to work, being impatient, parents' lack of understanding of technology. In this study, the less optimal aspect of the role of parents is related to the element of parents trying to add insight to mathematics subjects. However, parents still have awareness in guiding, accompanying, motivating, meeting learning needs, creating a comfortable home environment, and taking time for children so that children can directly feel the role of parents during online learning.

4. CONCLUSION

Based on the results of the study, it can be concluded that: Students' mathematics learning activities during the Covid-19 pandemic at Rarowatu Utara State Junior High School implemented online learning using the WhatsApp application. The Indicator Writing Activities percentage is 22.20%, while the lowest percentage of mathematics learning activities is found in the Emotional Activities indicator with 16.39%. On the indicators of Visual Activities, most students tend to be less focused when learning takes place and desire to read/study mathematics material when learning mathematics online. Indicator Oral Activities, most students tend to have the initiative to ask the teacher when they do not understand the material. Indicator Writing Activities, most students tend to take down math material often and do math assignments when learning math online. On the indicator of Mental Activities, most students tend to have difficulty understanding math material and have difficulty solving math problems given by the teacher when learning mathematics online. On the indicator of Emotional Activity, most students tend to feel unhappy. They are less enthusiastic about learning mathematics online, feel bored and lazy, and find it difficult to learn mathematics online.

The role of parents during the Covid-19 pandemic at SMP Negeri Rarowatu Utara, on the indicator of parents as teachers at home, most parents tend to guide and accompany children while learning mathematics online. On the indicator of parents as facilitators, most parents try to create a comfortable home environment so that children feel comfortable while learning mathematics online and fulfil their children's learning needs to learn mathematics online. On the indicator of parents as motivators, most parents always provide advice and motivation to children to keep their enthusiasm for learning mathematics online. In the indicator of parents as influences or *directors*, most parents tend to have difficulty adding insight and knowledge in mathematics lessons to guide children to learn mathematics online. Then on the indicator of parents' educational background, the majority of parents think that the educational experience of parents can influence parents in guiding their children to learn mathematics online. Then on the indicators for the type of parental worker, most parents stated that the type of parental occupation could influence parents in guiding their children to learn mathematics online.

Furthermore, on the indicator of the parents' economic level, most parents revealed that the level of parents could influence parents in guiding their children to learn mathematics online. Furthermore, on the available time indicator, most parents think that the available time can affect parents teaching their children to learn mathematics online. Then, regarding the number of family members, most parents stated that the number of family members could influence parents in guiding their children to learn mathematics online.

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