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The Role and Perception of Parents in Guiding Students' Mathematics Learning During the Covid-19 Pandemic

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Abstract*. The Covid-19 pandemic has compelled a shift to online learning, thereby necessitating parental involvement in their children's education at home. In this study, we aim to explore the perceptions and roles of parents in guiding their children's mathematics education during the pandemic. Our research comprises a sample of 67 participants who are parents of junior high school students with diverse occupational backgrounds in Jambi, Riau, and West Sumatra. We adopted an accidental sampling technique to select our research sample. The primary instrument for our study is a questionnaire that consists of closed questions that probe parents' emotions, knowledge, and perceptions regarding their responsibility in supporting their children's learning at home. Our survey was conducted in two phases: the initial phase spanning six months at the onset of the pandemic, and the second phase occurring several months later. Our findings indicate that during the first phase, parents were generally unaware of their roles and held negative perceptions of the online learning process. However, in the second phase, parents demonstrated a more proactive and mentoring role in supporting their children's online learning. Our study highlights the vital role of parents in facilitating their children's education during the pandemic and suggests that parental involvement is essential for optimizing online learning outcomes.*
Keywords*: Covid-19 Pandemic, Mathematics Learning, Parents' Role and Perception, Remote Learning*

INTRODUCTION

Coronavirus disease (COVID-19) is a pandemic that has been occurred around the world. The pandemic was identified in December 2019 in Wuhan City, in one of the provinces in China called Hubei (Sohrabi et al., 2020; Wan et al., 2020). After China, the virus spreads to other countries. It is from a human carrier around the world. Cases reported by COVID-19 increase rapidly every month. It is not only in China but also in every country. As a result, WHO (2005) postulated in Practical recommendations for critical care and anaesthesiology teams caring for novel coronavirus (2019-nCoV) patients, declared COVID-19 as a global health emergency (Wax & Christian, 2020).

COVID-19 is dangerous. Even though a vaccine has been found, the effectiveness of the vaccine has not been fully proven, and the fear of the corona virus is still imprinted on the minds of the world community. But some suggestions can be followed by people to stop and to slow the spread of COVID-19 by World Health Organization (2020) are: (a) Washing hand regularly with soap and water, or clean them with alcohol-based hand rub; (b) Maintain at least 1-meter distance between you and people coughing or sneezing; (c) Avoid touching your face; (d) Cover your mouth and nose when coughing or sneezing; (e) Stay home if you feel unwell; (f) Refrain from smoking and other activities that weaken the lungs; (g) Practice physical distancing by avoiding unnecessary travel and staying away from large groups of people.

Therefore, the country infected by Coronavirus suggests people do quarantine. For instance, to limit the spread of a tour group is also done by isolation and quarantine in Australia

because of coronavirus. Although there are many things done by the government based on WHO suggestions against COVID-19, but quarantine is one of them. Moreover, Corona Virus Disease (COVID-19) also spreads in Indonesia. Hence, quarantine is also one of the government choices and it influences most of the sectors in people's life such as education, economics, transportations, trades, tourism, etc. But one of the sectors that gets a big influence from this pandemic is education. UNESCO (2019) stated students' population get an impact over 90% (School Closures Caused by Coronavirus (COVID-19), n.d.). Most governments close educational institutions caused by COVID-19 included Indonesia. As a result, it affects the learning process (Ortiz, 2020).

The learning process will be done through remote learning. Remote Learning is something done via technology for the learner and instructor that they cannot meet, or a process that is done in a distance and involves time. Remote Learning becomes the only way of school to maintain education balance during the pandemic. It is not only for Elementary School but also for all school levels such as Junior High School, Senior High School, and University.

In short, it can be concluded that COVID-19 is a pandemic in the world, and it has no specific vaccine yet. It is a world problem that impacts the learning process. It cannot be ignored by the government because all students are threatened that caused by the closure of all institutions nationally. But a learning process must still be done. This situation challenged the education system around the world and forced schools and educators to switch an online learning (Dhawan, 2020). As a result, remote learning becomes the only better way that is chosen by most of the institutions in Indonesia.

Based on the researcher's observation results towards students and parents of Junior High School were COVID-19 impacts the way of study. Despite, remote learning is not a new thing for students completely. However, the forms of remote learning become assortment. Before the closure is decided, remote learning has been applied by the educators indirectly. But it is in a simple form such as making simple short videos only by a group and it has no complicated editing. So, it is easy for them. On the other hand, the learning process is forced to use remote learning (Online) during COVID-19. So, there are a lot of forms of remote learning used by teachers. It is not only a simple video but also other forms such as photos, voice notes (recording), online tests by google, video call, etc. Where they are new things for students. Especially for Elementary School, and Junior High School students.

Besides, studying through online learning makes some subjects being more difficult because there are subjects that need more explanation directly between students and teachers like math, English, science (physics or chemistry), Arabic, etc. From all the subjects, math is the main subject that needs explanation from teachers and has difficult forms of remote learning in getting the achievement. A mathematics teacher from America came to students' houses and taught the students through a window because of COVID-19. It proves math is difficult to be understood by students from online learning.

Students usually study directly or face to face. But the closure forces them to study at home. It means family such as father, mother, sisters, brothers, uncles, etc. have a significant contribution to guide students to study (Erduran, 2020). Especially parents who in charge of help in the learning process. Then, parents have full responsibility for students' education (Eliyawati & Meiyuntariningsih, 2018). Further, when children study or learn at home, parents can control children's homework, recognize their shortcomings, and help them (Sahin, 2019).

Parental involvement is an important factor for student achievement in traditional school settings. The role and support of parents have shown a significant contribution to the success of students in a virtual learning environment (Borup et al., 2014; Liu & Cavanaugh, 2012; Makrooni, 2019). However, parents must take on new and unfamiliar roles and responsibilities when their children participate in online education while experiencing increased instructional responsibility for their child's learning (Liu et al., 2010). As a result, parents often have difficulty understanding the role they should play in their children's online learning (Boulton, 2008).

However, the success of students in the school does not always increase because of the parents' role (Eş et al., 2019). It occurs because of parents' different backgrounds. Sometimes, the children's academic work at school is not paid attention to parents (Kiral, 2020). But remote learning still must be applied because of the pandemic forces school and teachers. So, collaboration is needed between parents and teachers to be an important step for student's achievement (Can, 2016). Further, parents have an essential role of students succeed and teachers have an educator's competence to teach the students.

School closures caused by the outbreak of the Covid-19 virus presented serious problems for the world of education (Agaton & Cueto, 2021; Mukuka et al., 2021). Between 2019 and 2022, several studies have documented the occurrence of loss learning at almost all levels of education and in all countries (Agaton & Cueto, 2021; Garbe et al., 2020; Guillaume et al., 2022; Jurs & Kulberga, 2021; Mukuka et al., 2021; Thomas & Rogers, 2020). This is a problem that requires a quick solution so that the learning conditions of students can be improved immediately along with the improvement in the spread of the Covid-19 virus.

Differences in Terms

The definition of non-face-to-face learning is often referred to differently between researchers, including remote learning, distance learning, e-learning, and online learning. *Remote learning* is something that is done through technology for students and instructors they cannot see, or processes that are done remotely and involve time. Remote Learning is the only way for schools to maintain a balance of education during a pandemic (Can et al., 2016).

Meanwhile, for the same purpose, there is also the term *distance learning* which in terms is interpreted as an effort to provide access to learning for those who are geographically far away. This description is used the most when defining distance learning. Over the last two decades, the relevant literature indicates that various authors and researchers use inconsistent definitions of distance education and distance learning (Moore et al., 2011). If you look at the use of learning resources that use access to certain technologies, non-face-to-face learning can also be interpreted as e-learning. Nichols (2003) defines e-Learning as something that can be accessed using web-based, web-distributed technology tools. E-Learning includes not only instructional content and methods delivered via video, the Internet or Intranets (Benson et al., 2002; Clark, 2002) but also includes audio and videotapes, satellite broadcasts and interactive TV (Nichols, 2003).

Online learning is access to experiential learning through the use of multiple technologies. Newer versions of online learning that increase access to educational opportunities for learners are described as non-traditional and disenfranchised. Other authors have discussed not only the accessibility of online learning but also its connectivity, flexibility and ability to promote varied interactions (Benson, 2002). Some of these terms related to online learning are basically the same, but in this study the researcher chose the term *online learning*.

Based on the background above, the researcher would like to know about the parent's role in guiding students or children's learning process through remote learning during the COVID-19 pandemic in Jambi Province, Indonesia. Further, the research question was what are parents' roles in students' learning process during the COVID-19 pandemic? In this study, the researcher tried to find out the parents' role in filling several points such as what parents know, what parents do, what parents' opinions, and what parents feel. To describe the points, the researcher asked some questions to parents. Furthermore, it was important to know how far parents contribute to students learning process so that parents could be more aware of their role in student achievement.

METHOD

This study used qualitative research. It is an approach that is good to find a central phenomenon (Courtis & Packer, 1920). The qualitative research used descriptive qualitative. This type of research describes the experienced of humans as social subjects and it has a natural setting (Mudra, 2018).

The purpose of descriptive research is to explain a relevant phenomenon of research from perspectives. It can be concluded that this research explained real events or phenomena into the description.

This study conducted in Jambi province, Riau and West Sumatera, Indonesia. The participants in this study were selected by accidental sampling technique. Followed by 67 parents of junior high school students who can be contacted via the instant messaging application by using colleagues, respondents came from various occupations. The distribution is shown in the following Figure 1.

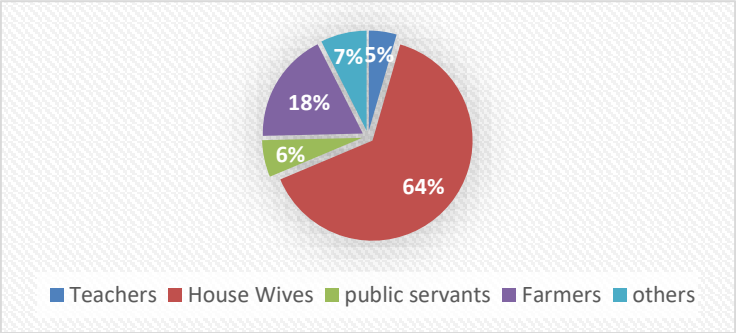

Figure 1. Distribution of the Respondent's Occupation

Then given a questionnaire of 24 items with a 'yes' or 'no' and doubtful question. It is a question that needs an answer 'yes' or 'no', and 'doubtful' 26 pieces and as many as 4 open questions that have been developed and validated by experts. The semi-structured interview protocol was used for this study. Moreover, the researcher asked parents with some questions that aim to know about parents' role in guiding children learning process about remote learning did by teachers during covid-19.

Table 1. The Interview Guide

No	Indicator	Questions
1.	Introduction	1. Is online learning done by School?
		2. Whether the school provides special services for online learning?
		3. Is there daring for math before COVID-19?
		4. Did online learning during the Covid-19 pandemic improve the quality of learning mathematics?
		5. Can children's learning progress be seen during online learning?
		6. Do you agree with online learning during the Covid-19 pandemic?
2.	Parent Guide	7. Do you understand the math material that children will learn?
		8. Do you direct your child when they have difficulty learning mathematics?
		9. Do you fully guide children when learning mathematics online?
		10. Do you bridge the communication between the child and the teacher?
3.	Supervision	11. Do you pay attention to children when learning mathematics online?
		12. Do you accompany your child when studying online?
		13. Do you feel safe when your child is studying?
		14. Do you check children's learning outcomes when the learning session ends?
4.	General Welfare	15. Do you provide a comfortable place specifically for online learning?
		16. Does online learning cost you more?
		17. Do you provide facilities such as wifi, cellphone, laptop and other things that are relevant to the task?

No	Indicator	Questions
		18. Do you provide vitamins (supplements) so that children can learn optimally?
5.	Time	19. Do you set a time limit for your child's study?
		20. Does online learning allow you to spend more time with your children?
		21. Do you make a study time agreement with your child?
		22. Do you have enough time to accompany your child to learn mathematics at home?
6.	Support	23. Do you give praise when your child finishes online learning?
		24. Do you condition the tranquility of the house when your child learns online?
		25. Did you notice that the child was in good condition before studying?
		26. Did you ask about the child's feelings after completing online learning?
7.	Open questions	27. What are the differences in guiding students to learn before and during COVID-19?
		28. What are the assignment forms given by the math teacher?
		29. What are the difficulties in guiding children to learn math?
		30. How is the quality of your relationship with your child during online learning?

The researchers used a questionnaire and interview in collecting data. After the participants or parents were selected, the researcher informed parents directly. The forms of an interview were decided by parents and researchers by used instant messaging applications. It could be from a video recorded, video call, call, voice note, or directly. But parents choose to text and/or voice noted because they felt nervous when the researcher used a video call recorder. Besides, the interview was conducted in April 2020 but to observe the change in parents' perceptions about the role of parents in guiding the child's learning process in online learning carried out by teachers during COVID-19, data were collected again in March 2022.

FINDINGS

A total of parents as participants was 67. The occupation of respondents was 64% housewives, 18% farmers, 7% teachers, 6% public servants, and 5% others. Findings from the interview of the parent's role the researchers used code 'P'. The parent's names as the respondents are not mentioned. It is decided to protect parents' identities. There were 11 questions divided into two parts. The findings of the two parts were presented as some sub-parts represented by three parents that have been chosen by the researcher Yes, No, or Doubtful questions.

The Term

The term is an introduction or can also be interpreted as an introductory element, preface, foreword, and others. The purpose of the form itself is to first check the situation in the field regarding the existence of basic matters related to online learning during the Covid-19 pandemic which include; implementation of learning during the initial period of covid-19; general effectiveness; and parental approval of the implementation of online learning.

The distribution of respondents' answers to the first indicator, which consists of six items, is shown in Table 2.

Table 2. Distribution of Answer toward Introduction Part of Questionnaire

Item	Pashe 1			Phase II		
	Yes (%)	No (%)	Doubt (%)	Yes (%)	No (%)	Doubt (%)
Is daring (online learning) done by School?	68,65	17,91	13,44	100	0	0
Whether the school provides special services for online learning?	10,44	80,59	8,97	86,56	13,42	0
Is there daring for math before COVID-19?	3	97	0	3	97	0
Did online learning during the Covid-19 pandemic improve the quality of learning mathematics?	19,64	70,34	10,02	17,86	74,14	8
Can children's learning progress be seen when learning online?	17,86	82,14	0	25	75	0
Do you agree with online learning during the Covid-19 pandemic?	66,96	33,04	0	71,43	28,57	0

(n=67)

Was online learning carried out in schools during the Covid-19 pandemic?

Parents' answers showed that 69.64% knew about online learning being carried out at school, and 17.86% did not know about online learning being carried out at school during COVID-19 and 12.5% said they were unsure. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers show that 100% of schools do it, 0% don't do it. Online learning is done or not by schools during COVID-19.

Whether the school provides special services for online learning?

Parents' answers were in the opinion that 9.97% of schools provided services in online learning, and 80.03% did not provide services in online learning and 10% said they were unsure. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers show that 20% of schools provide services in online learning, 80% of schools do not provide services in online learning.

Was there online for math before COVID-19?

Parents' answers were in the opinion that 3% of schools studied online before Covid-19, and 97% of schools did not study online before Covid-19. However, when asked again about the same thing in stage II, there was no change in answer.

Does online learning during the Covid-19 pandemic improve the quality of mathematics learning?

Parents' answers showed that 19.64% of online learning could improve the quality of learning mathematics at school, while 70.34% did not improve the quality of learning mathematics in online learning conducted at school during COVID-19 and 10.02 were in doubt. However, when asked again about the same thing in stage II, there was a change in answer. This can be seen in the change in the proportion of parents' answers. Parents' answers showed that 17.86% (yes) in the second phase with the same questions, and 82.14% (no) in the second phase with the same questions.

Can children's learning progress be seen when learning online?

Parents' answers indicated that 17.86% of children's learning progress could be seen through online learning conducted at school, and 82.14% of children's learning development could not be seen

through online learning conducted at school during COVID-19. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers show that 25% of children's development is visible, and 75% of children's development is not visible through online learning carried out by schools during COVID-19

Do you agree with online learning during the Covid-19 pandemic?

Parents' answers showed that 66.95% of parents agreed that online learning was carried out at school, and 33.04% of parents did not agree that online learning was carried out at school during COVID-19. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers showed that 71.43% of parents agreed to do online learning, and 28.57% did not agree if online learning was done during COVID-19

Parent Guide

Parents are the basic educators for children, because children's education begins with parental education (Kelty & Wakabayashi, 2020). Therefore the first form of education is in the family. Even though not all parents understand learning material well, based on affection for children, parental guidance for their children should be able to help children deal with difficulties when children are faced with difficulties when undergoing online learning.

The distribution of respondents' answers on the second indicator which consists of four items is shown in Table 3.

Table 3. Distribution of Answer toward Parent Guide Part of the Questionnaire

Item	Pashe 1			Phase II		
	Yes (%)	No (%)	Doub (%)	Yes (%)	No (%)	Doubt (%)
Do you understand the math material that your child will learn?	26,79	66,96	6,25	62,5	33,5	4
Do you direct children when they have difficulty learning mathematics?	16,96	73,94	9,11	67,86	31,14	0
Do you fully guide your child when learning mathematics online?	23,21	76,79	0	38,39	61,61	0
Do you bridge the communication between the child and the teacher?	46,43	50,00	3,57	67,86	32,14	0

(n=67)

Do you understand the math material that children will learn?

Parents' answers showed that 26.79% understood the math material to be studied, and 66.96% did not understand the math material to be studied. And 6.25 expressed doubt. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers show that 62.5% understand the math material to be studied and 33.5% do not understand the math material to be studied and 4% are unsure

Is do you direct children when they have difficulty learning math?

Parents' answers showed 16.96% that they directed their children when they had difficulties in learning mathematics, while 73.94% of parents did not direct their children when they had difficulties in learning mathematics and 9.11 expressed doubt. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers showed that 67.86% *directed their children when they*

had difficulty learning mathematics, and 32.14% did not. Directing children when they have difficulties in learning mathematics.

Do you fully guide children when learning mathematics online?

Parents' answers indicated that 23.21% of children's learning progress could be seen through online learning conducted by schools, and 76.79% of children's learning progress could not be seen in online learning conducted by schools during COVID-19. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers showed that 38.39% of the child's development was visible, and 61.61% of the child's development was not visible through online learning carried out by schools during COVID-19.

Do you bridge the communication between the child and the teacher?

Parents' answers showed 46.43% that parents bridged children's communication with teachers in online learning conducted at school, and 50.00% of parents did not bridge children's communication with teachers in online learning conducted in schools during COVID-19 and 3, 57 expressed doubt. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers show that 67.86% of parents bridge communication between children and teachers when online learning, and 32.18% do not bridge communication between children and teachers when online learning during COVID-19.

Supervision

Parents act as supervisors or supervisors for their children and pay great attention to their children's activities at school (Martín-Criado et al., 2021). Supervision should be accompanied by setting an example and being consistent including being personal, humane, with a variety of disciplinary activities, social, respecting time, patience, controlling emotions, prioritizing rational considerations and so on which is at the same time oriented towards pedagogical values as a substitute for the main function of the teacher (Jurs & Kulberga, 2021). As parents, on the other hand, they are also obliged to provide learning facilities for their children such as books, stationery. Even if possible, provide a special room for each child.

The distribution of respondents' answers on the third indicator which consists of four items, is shown in Table 4.

Table 4. Distribution of Answer toward Supervision Part of the Questionnaire

Item	Pashe 1			Phase II		
	Yes (%)	No (%)	Doubt (%)	Yes (%)	No (%)	Doubt (%)
Do you pay attention to children when learning mathematics online?	23,21	70,34	6,44	67,86	31,04	1,12
Do you accompany your child when studying online?	28,57	70,00	1,43	53,57	46,34	0
Do you feel safe when your child is studying?	33,93	61,00	5,07	59,82	44,64	0
Do you check children's learning outcomes when the learning session ends?	25,89	74,11	0	56,25	43,75	0

(n=67)

Do you pay attention to children when learning math online?

Parents' answers showed that 23.21% paid attention to their children when learning mathematics, and 70.34% did not pay attention to children's learning when learning was carried out during

COVID-19 and 6.44 were hesitant. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers showed that 67.86% paid attention to children learning mathematics and 31.04% did not pay attention to children when learning mathematics online during COVID-19 and 1.12 were hesitant.

Do you accompany your child when studying online?

Parents' answers showed 28.57% that they accompanied their children during the learning process, while 70.00% of parents did not accompany their children in online learning conducted at school during COVID-19 and 1.43. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers showed that 53.57% of parents accompanied the learning process in the second phase with the same questions, and 46.43% of parents did not accompany their children when learning mathematics online.

Do you provide a sense of security in a certain way when children learn?

Parents' answers showed that 33.93% of parents answered "yes", and 61.00% of parents answered "no" and 5.07. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers showed that 59.82% of parents answered "yes:, and 44.64% answered "no"

Do you check your child's learning outcomes when the learning session ends?

Parents' answers showed that 25.89% of parents always checked their children's learning outcomes when learning was finished, and 74.11% of parents did not check their children's learning outcomes during online learning conducted at school during COVID-19. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers showed that 56.25% of parents checked their children's learning outcomes when online learning, and 43.75% of parents answered they did not check their students' learning outcomes.

General Welfare

In the learning process 'economic stability' or in the form of adequate facilities is also something that must be considered in learning. Why is that? Because welfare itself has the meaning of pointing to a good condition, a human condition where people are in a prosperous state, in a healthy state (related to nutritional intake or supplements) and peaceful (Tamborini, 2021), thus when students study with these conditions it is assumed students more easily understand learning material and determine student learning success in the future (Tamborini, 2021). One of the things related to welfare in the learning process is learning facilities. The importance of learning facilities that must be owned by students because it is one of the factors for the implementation of learning efficiently and effectively besides that, whether or not learning equipment is complete or not, is the next factor that determines student learning outcomes.

The distribution of respondents' answers on the third indicator which consists of four items, is shown in Table 5.

Table 5. Distribution of Answer toward General Welfare Part of the Questionnaire

Item	Pashe 1			Phase II		
	Yes (%)	No (%)	Doubt (%)	Yes (%)	No (%)	Doubt (%)
Do you provide a comfortable place specifically for online learning?	10,71	89,29	0	31,25	68,75	0

Item	Pashe 1			Phase II		
	Yes (%)	No (%)	Doubt (%)	Yes (%)	No (%)	Doubt (%)
Does online learning cost you more?	87,50	7,38	5,12	84,82	15,18	0
Do you provide facilities such as wifi, cell phones, laptops and other things that are relevant to the task?	16,07	83,93	0	34,82	65,18	0
Do you provide vitamins (supplements) so that children can learn optimally?	8,93	91,07	0	17,86	82,14	0

(n=67)

Do you provide a comfortable place specifically for online learning?

Parents' answers showed that 10.71% provided a comfortable place to study mathematics, and 89.29% did not provide a comfortable place during the learning process during COVID-19. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers showed that 31.25% provided children with a place to learn mathematics and 68.75% did not provide a place for children to study when learning mathematics online during COVID-19.

Does online learning cost you more?

Parents' answers showed that 87.50% of parents answered yes, while 7.38% answered no and 5.12 answered doubtfully. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers showed that 84.82% of parents admitted to spending quite a lot when learning in the second phase with the same questions, and 15.18% of parents answered no in the second phase with the same questions.

Do you provide facilities such as wifi, cellphone, laptop and other things that are relevant to the task?

Parents' answers showed that 16.07% of parents answered yes, and 83.93% answered no. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers showed that 34.82% of parents answered yes, and 65.18% of parents answered that they did not provide the facilities needed in the online learning process carried out by schools during COVID-19.

Do you provide vitamins so that children can think optimally?

Parents' answers showed that 8.93% answered yes, and 91.07% of parents answered that they did not provide vitamins for online learning in schools during COVID-19. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers showed that 17.86% of parents answered yes and 82.14% of parents answered no.

Time

Time is the whole series of moments when processes, actions, or conditions exist or take place. In this case, the time scale is the interval between two states/events, or it can be the duration of an event. Although it is not easy to provide special time due to the crisis caused by Covid-19 affecting almost all aspects of life (Agaton & Cueto, 2021). The time allotted by parents to accompany children when studying at home is an important factor for students to achieve because they spend more time studying at home than at school. Therefore, the time to study at home must be utilized as well as possible. So that learning achievement can increase (Bangun, 2012).

The distribution of respondents' answers on the third indicator which consists of four items, is shown in Table 6.

Table 6. Distribution of Answer toward Time Part of the Questionnaire

Item	Pashe 1			Phase II		
	Yes (%)	No (%)	Doubt (%)	Yes (%)	No (%)	Doubt (%)
Do you set limits on the hours of study for children?	37,50	62,50	0	37,50	62,50	0
Does online learning make you have a lot of time with your children?	61,61	38,39	0	73,21	26,79	0
Did you make a study time agreement with your children?	35,71	64,29	0	54,46	45,54	0
Do you have enough time to accompany your child to learn mathematics at home?	37,50	17,86	0	59,82	40,18	0

(n=67)

Do you provide limits on children's study hours?

Parents' answers showed that 37.50% of parents answered yes, and 62.50% of parents answered that they did not place limits on their children's study hours during the COVID-19 period. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers show that 37.50% yes and 37.50% of parents answer no.

Do you think online learning allows you to have a lot of time with your children?

Parents' answers showed 61.61% that online learning allows you to have a lot of time with your children, while 38.39% online learning does not allow parents to have much time with their children during COVID-19. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers show that 73.21% of online learning allows you to have a lot of time with your children, and 26.79% of online learning does not make you have much time with your children in the second phase with the same questions.

Do you make study time agreements with children?

Parents' answers show that 35.71% of your parents made an agreement for study time with their children, and 64.29% of your parents did not make an agreement for study time with their children during COVID-19. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers show that 54.46% of your parents made an agreement for study time with their children, and 45.54% of your parents did not make an agreement for study time with their children during COVID-19.

Do you have enough time to accompany your child to learn math at home?

Parents' answers showed that 37.50% of your parents had enough time to accompany their child to learn mathematics at home, and 17.86% of your parents did not have enough time to accompany their child to study mathematics at home during COVID-19. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers show that 59.82% of your parents have enough time to accompany their children to learn mathematics at home, and 32.18% do not you have enough time to accompany their children to study mathematics at home during COVID-19.

Support

Support is an effort given to someone, both moral and material, to motivate others in carrying out an activity, even including helping students manage stress (Acs International Schools, 2021; Agaton & Cueto, 2021). The role of motivation is very important in the success of the learning process, students who do not have enough motivation certainly have a low interest in learning the subject matter, because students will not be motivated to find the information needed and make efforts to deepen the subject matter.

The distribution of respondents' answers on the third indicator which consists of four items, is shown in Table 6.

Table 7. Distribution of Answer toward Support Part of the Questionnaire

Item	Pashe 1			Phase II		
	Yes (%)	No (%)	Doubt (%)	Yes (%)	No (%)	Doubt (%)
Do you give praise when your child finishes online learning?	26,79	63,69	9,25	53,57	46,43	0
Do you condition the peace of the house when children study online?	31,25	60,00	8,75	59,82	44,64	0
Did you notice that the child was in good condition before studying?	20,00	70,54	9,46	61,61	38,39	0
Did you ask about children's feelings when they finished online learning	33,04	66,96	0	61,61	38,39	0

(n=67)

Do you give praise when your child finishes online learning?

Parents' answers showed that 26.79% gave praise when their child finished learning online, and 63.69% did not give praise when their child finished studying online during COVID-19 and 9.25 were hesitant. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers showed that 53.57% gave praise when the child finished learning online and 46.43% gave praise when the child finished learning online during COVID-19.

Do you condition the calmness of the house when the child learns online?

Parents' answers showed 31.25% that they conditioned the calm of the house when their children studied online, while 60.00% did not condition the calm of the house when their children studied online during COVID-19 and 8.75 expressed doubts. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers showed that 59.82% conditioned the calm of the house when the child studied online in the second phase with the same questions, and 44.64% conditioned the calm of the house when the child studied online.

Did you notice that the child was in good condition before learning?

Parents' answers showed that 20.00% of people noticed that the child was well before learning, and 70.54% of parents did not pay attention to the child being well before learning during COVID-19 and 9.46 were unsure. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers show that 61.61% of parents pay attention to their child's welfare before studying, and 38.39% of parents do not pay attention to their child's condition before studying during school. COVID-19 Parents' answers showed that 20.00% of people noticed that children were in good condition before studying, and 70.54% of parents did not pay attention to children in good

condition before studying during COVID-19 and 9.46 were hesitant. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers showed that 61.61% of parents noticed that their children were in good condition before learning, and 38.39% of parents did not pay attention to their children's condition before studying during COVID-19

Do you ask about how children feel when they finish studying online?

Parents' answers showed 33.04% that parents asked about their children's feelings when they finished learning online, and 66.96% of parents did not ask about their children's feelings when they finished learning online during COVID-19. However, when asked again about the same thing in stage II, there was a change in answer. And this can be seen in the change in the proportion of parents' answers. Parents' answers showed that 61.61% of parents asked about their children's feelings when they finished learning online, and 38.39% did not ask about their children's feelings when they finished learning online during COVID-19.

The Open Questions

After collecting, data were grouped based on the frequency of emergence. This process produces three groups of data. From every single data, the group is chosen one representative person to show in the discussion. The answer of parents regarding the question about "What are the differences of guiding students to learn before and after COVID-19 ?"

P1: Due to school policy, I have to accompany my children in learning maths at home during COVID-19 when I never do that before COVID-19.
P2: I totally participate in guiding children to learn math at home before Covid-19. It's different before Covid-19.
P3: I never involve in guiding children to learn maths before and after Covid-19 then I can not compare the differences of guiding children to learn maths before and after Covid-19.

Generally, most parents do not involve in guiding children to learn maths at home before COVID-19 so that they do not give a clear description of the comparison of guiding children to learn maths before and after Covid-19. But other parents show that they involve in guiding children to learn maths at home before COVID-19 whereas they never do that before.

The answer of parents regarding the question about "What are the differences of guiding students to learn before and after COVID-19 ?" changes in pase II.

P1: Since COVID-19, I have been accompanying children to study more often. Which I rarely did before COVID-19 or in the early days of C OVID-19 happened.
P2: I spent a lot of time guiding children in learning since the implementation of online learning during C OVID-19. Whereas before C OVID-19 I never guided children to learn. In my opinion, online learning is not as effective as classroom learning, therefore I provide guidance.
P3: School policy expects parents to accompany children during online learning. And I did. Even though before C OVID-19 schools had never made such a policy.

Based on data in phase II, it can be observed that most parents guide their children during COVID-19. Even though before or during the early days of COVID-19, most parents did not do that.

Furthermore' when parents regarding the question about "What are assignment forms given by math teacher?"

P1: It is an assignment like knowing the materials and answering the question. Maybe it has been learned before.

P2: I don't know the forms of math assignment.
P3: I don't know absolutely.

From the second question, most parents do not know exactly the forms of the assignments given by math teachers. Whereas other parents know the form of math assignments, it is knowing the materials and answering the question.

In phase II, the answer of parents regarding the question about "What are assignment forms given by math teacher?" changes.

P1: the task is in the form of questions that confirm students' understanding of the material that has been delivered.
P2: the assignment is in the form of multiple-choice questions that must be answered by students
P3: a problem-solving task formatted in the form of a problem or case

From the data collected in the second phase, it generally shows that parents know the forms of assignments that teachers give students in online learning.

The answer of parents regarding the question about "What are difficulties in guiding children to learn math?"

P1: The biggest problem in guiding children to learn is my minimal experience in mathematics.
P2: I don't understand the material, so this makes it difficult for me to provide guidance.
P3: I don't have good math skills so that's a problem for me.

P1 stated that there were difficulties especially in understanding materials and sparing time to accompany the students. But the others could not answer the question because they did not focus on helping students doing math. So, they didn't find any significant difficulties.

In the second phase, the answer of parent regarding the question "What are the difficulties in guiding children to learn mathematics?" have not undergone significant changes.

P1: except I have to try to understand the materials about maths, i must spare time to accompany my children in learning maths
P2: it is hard to guide children in learning math at home due to I don't have experience in math
P3: Guiding children in learning math is difficult because I've no math abilities well

Lack of mastery of math material remains a major problem for parents in guiding children in online learning.

The answer of parents regarding the question about "How is the quality of your relationship with your child during online learning?"

P1: I had more time with my child
P2: I still find it difficult to spend time with children
P3: I pay more attention to them

In the second phase, the answer of parent regarding the question "How is the quality of your relationship with your child during online learning?"

P1: I spend more time with my children, often pay attention to them, when learning, playing, and the quality of our interactions
P2: In our spare time, we talk more often. so I feel more familiar with my child
P3: I pay more attention to them, and spend more time with my children

DISCUSSION

The objective of this research was to know about parents' role and perception in guiding students learning process during the COVID-19 pandemic. The learning process focused on Mathematics subjects. The results showed that in the early days of the pandemic, parents did not have a significant role in guiding the student learning process. It is not only for math but also for other subjects. It was proved by some parts that showed parents who have a responsibility in the family to guide or handle children when studying at home. The parts are divided into twenty six questions. It was consisted of eight yes or no questions and three open questions. It was related to what the parents know, what the parents do, parents' opinions, and what the parents feel during guiding students at home.

Online Learning was applied in most schools. The researcher found some parents agreed that schools did Daring during the closure. It was begun in April 2020 and followed by the schools overall. The policy of applying Online Learning becomes the only way that can be chosen by schools. Online learning can help students to continue the learning process and also foster good study habits by involving many parts such as the schools involving, the identification of platform, scheduling, or the planning (Zayapragassarazan, 2020). Almost oll of parents in this study agreed the school closure policy. The parent may have thought that the safety and health of their childrent as a priority during the Covid-19 pandemic.

Phase I

The percentage of the schools did Daring before COVID-19 pandemic for math was nearly none, 69% of parents stated schools did not apply Online Learning. Only 31% of parents who sent their child to favorite school stated there ever did before the pandemic. As a result, online learning was a new thing for most students and parents. In this case, it also proved by the findings that 73% of parents stated that children got difficulties in doing math online learning. Consequently, 50% of parents helped more to solve students' problems doing Daring. Many parents are demanded to do other alternatives and being creative. Whereas parents' expectations for children's academic success greatly affect their children's intrinsic motivation (Fan & Williams, 2010), and then achievement (Kirk et al., 2011a).

In contrast, only 37,50% of parents helped students to learn math directly. In other words, parents also got a limitation on teaching mathematics to the children as students' teachers at home. 28,57% of parents did not accompany their child learning math because parents expected students did the homework by themselves (Reaburn et al., 2018). Whereas, in fact, parents should help students learn math at home, this is in line with the research of (Bempechat, 1992) that the effectiveness of the learning process can be helped with comprehending what students learned to real-life through example or practices by parents.

Moreover, Online Learning became the only way of school to maintain students' learning process. It was completely involving parents . The outbreak of COVID-19 came to Indonesia and spread fast without any preparation of all sectors including education. But education is forced to face the pandemic. It makes education sectors did not prepare. As a result, 90% of schools did not give special services for parents or students to do Daring. Instead, parents should have information and contribution during students' study at home because it is not only teacher obligation (Bempechat, 1992). Whereas the relationship between parents and schools in children's learning success is one of the supporting factors (Hill & Tyson, 2009). It caused there were many deficiencies in applying it. Since the pandemic was so sudden and unsuspected, parents were unprepared for this shift. That's why they would have difficulties balancing their work, home, and teaching responsibilities. Although the parents did not understand enough, only 19,64 % of parents still thaught and believed that Daring gave an effective result. One of the research found parents gave teachers full responsibility without realizing their role (Bempechat, 1992).

While the teacher and parents have to have a collaboration to make it being a success. If parents ask teachers and have collaboration and they make a good arrangement about students'

assignment, it will motivate students to hard-working enough in learning (Javier & Jubay Jr, 2019) Refers to parents' belief, 37,50% admitted that they sometimes took a specific time as teachers to guide their child to learn math It can also be said that parents have enough time to accompany their children. Generally, It was only during the pandemic. Due to the result, four factors cause the lack of parents' role in children's education like busy at work, broken home, low economic, less awareness of parents (Kirk et al., 2011b).

On the contrary, 70,34% of parents stated that Daring is not effective because parents believed the teacher not only give the material but also has to explain it clearly. The study of (Jijun Yao, Jialong Rao, Tao Jiang, 2020) suggests that teachers can use appropriate teaching methods such as live broadcasting to get effective communication between teachers and students so the teacher not only becomes a transmitting knowledge but also becomes a leader and an accompanier of students. More explanations can help students understand the material of math that usually uses formulas. So, the purpose of the material can be gotten for the students. This is in line with the study of (Zhou et al., n.d.) that shows online learning reflects teachers ignoring the guidance, lacking the interaction, and poor teaching results and students got lacking self-control and self-learning ability so it makes unsatisfied results.

Also, the open questions gave more information. Parents recognized there were significant differences in their role in guiding students learning process before and after the closure caused by COVID-19. Then, parents also know the forms of Daring math assignments when others did not know clearly about the assignments. Parents also realize that the form of the assignment is knowing the materials and answering the question while others do not know absolutely. It was related to the difficulties of parents in guiding students to learn math. Parents got difficulties if they don't have any good background in math knowledge.

Phase II

This section will describe the data obtained during the second phase of data collection. However, the explanation will focus on items whose answer variations change significantly from the first phase data. All the indicator whose answer variations have changed. In the second phase of data collection, it is known that parents admit that schools provide special services for parents. This is done by the school to support the efficiency of online learning for students. This also resulted in an increase in the percentage of parents who took the time to accompany their children in online learning during the COVID-19 pandemic. The percentage of parents who claim to provide time to accompany their children in online learning is 53,57%. This figure is an increase of 25% when compared to the percentage rate in phase I.

With increasing parental concern for their children, which is marked by the increase in parents who claim to provide time to accompany their children in online learning, this is in line with the decreasing number of students who have difficulty understanding math material. The 54% decrease in the percentage of students who experience difficulties in online learning is the impact of increased awareness of schools and parents in responding to online learning. This can be seen from changes in the variation of parents' answers on items 3 and 4.

Based on the focus of this research, it can be concluded that parents especially those who have more responsibility in guiding students during study at home still do not realize and use well their role and perception in students' learning process during COVID-19 pandemic (phase I) (Cheng & Donnelly, 2019; Daniela et al., 2021; Jurs & Kulberga, 2021), However, there has been a change after a long time of implementing online learning as research findings. this is due to the demands and concerns of their children who have lost access to uncertain learning.

The parents' roles and perceptions are not also different from before the closure. The first evidence is parents know that there is no remote learning before the pandemic for math and there are no services for students or parents from school. As a result, most parents show their effort in knowing the way of the learning process. The second evidence is there still parents do not care about Daring that is done by their children. There are still parents who do not care both about the

difficulties faced by students and the effectiveness obtained even though it affects student's learning results. The findings of this study indicate that remote learning makes difficult for students and has an unsatisfactory impact on student learning outcomes. The next evidence is parents still do the same thing such as before the closure. Hence, students are threatened by getting less knowledge of math if parents still ignore their roles and perceptions.

In other side, Parents do not have significant roles at home during the closure of the schools in early period, some researchers state same thing when apply remote learning during covid-19 (Cheng & Donnelly, 2019; Daniela et al., 2021). But there are significant changed after a few months of being in a pandemic. Although some studies report negative impacts pessimistically (Guillaume et al., 2022), this study found a change in 'intimacy' between parents and students who showed optimism during distance learning. It is admitted that some research is rushed without considering the time period and the habits of students and parents, so that they reach conclusions that are still very tied to the time period.

CONCLUSSION

In conclusion, school closure caused some issues regarding remote learning at home among parents even though parents supported the school closure policy. In addition, school closure policy also has some negative impacts on student learning outcomes. Although we cannot deny that there are also positive impacts that occur (support, care, provision of facilities, supervision, time with parents and children, intimacy) that are getting better. In terms of educational implications, the effects of the parent involvement highlight the need for them to be considered key for inclusion as contextual variables in educational models. For this reason, parents should also be considered important educators who should pay attention to different learning procedures to ensure that all students are given opportunities to succeed in academic outcomes. Parent mentoring function for children during online learning influences student's readiness, understanding, and learning quality, so that the role of parents cannot be separated from the online learning system.

Besides, based on the result of the research it is hoped that the government, school, or teacher can make sure that parents' involvement in Remote Learning or Online Learning (Daring) application well because paying attention to parents as the first teacher at home has a big impact on students' success in Daring during the pandemic and parents also need to be more focus on students' learning process with having any efforts such as asking the students or the teachers to make them know what to do to be a teacher for their children.

Finally, the limitation of the present study must be addressed. Since our survey was conducted by inviting volunteer participant through social media, our sample may not be representative of the technology struggles experienced by family during Covid-19 school closure. Thus, future studies would consider the use of different mothods, including face to face interview techhniques. This study was conducted just after the first school closure to analyze the immediate effect of remote learning during pandemic among parents. The long-term impact on education yet to be seen. The future study needs toinvestigate the long-term effect of remote learning during pandemic among parents.

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