

PARENTAL GUIDANCE ON MATHEMATICS LEARNING FOR LOW-GRADES STUDENTS DURING THE COVID-19 PANDEMIC

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Abstract: Elementary school students in low grades are classified as early childhood with strong sensitivity during their development. This period expects parents to optimize guidance and provide appropriate direction for children's learning activities. Based on mathematics importance in life, the subject's skills need to be developed from an early stage through proper guidance. Since the Covid-19 pandemic, all learning activities are carried out from home, therefore parents have a bigger role in guiding the children. Parental guidance implementation is important for maximum learning achievement and success. Therefore, this research's objectives were to (1) provide an overview of mathematics learning guidance implementation in the low grades during the pandemic, and (2) knowing parents' needs, constraints and obstacles in carrying out the learning process. The method used was descriptive analysis with quantitative and qualitative approaches. The data were obtained through questionnaires, documentation and interviews. Also, the results showed that parental guidance in mathematics learning during the pandemic had not been implemented properly. Parents also experienced various obstacles in guiding the children.

Keywords: Parental Guidance, Mathematics Learning, Covid-19 Pandemic

INTRODUCTION

The Covid-19 outbreak had various impacts on human life. Furthermore, a study explains that this pandemic affected all fields, including the industrial, tourism, health, social, economic, and educational sectors (Jasmine, 2020; Driggin et al., 2020; Li et al., 2020; Cullinane & Montacute, 2020; Machado et al., 2020; Bartik et al., 2020; Laing, 2020; Shadmi et al., 2020; Pandey, 2020). Strategies are carried out by the government to suppress the virus growth because the death cases in several countries have increased (Mehta et al., 2020; Zhou et al., 2020; Rubino et al., 2020; Woolf et al., 2020; Weinberger et al., 2020; Zhang et al., 2020; Fauci et al., 2020).

One of the strategies includes social distancing, avoiding crowds, and working from home. Therefore, each government chooses the WFH (Work from Home) option for its workers, including in Indonesia (Bick et al., 2020; Jones, 2020; Alipour et al., 2020; Pandey, 2020; Bonacini et al., 2020; Setyawan & Lestari, 2020). The WFH implementation has certainly brought up a new term, namely SFH (School From Home), as an online learning activity during the Covid-19 pandemic (Van Lancker & Parolin, 2020; Ahmed et al., 2020; Nicola et al., 2020). SFH is mandatory because education and learning should be carried out in any condition. This is certainly based on helping students increase their potentials, including in mathematics.

The learning process in elementary schools, which was originally face-to-face, had to be carried out at home and online by relying on internet technology during the pandemic (Mailizaret al., 2020; Mulenga & Marbán, 2020; Marpa, 2020; Awofala et al., 2020). Furthermore, many platforms are used, including edmodo, lesson sketch, zoom, web blogs, etc. (Arifin & Herman, 2018; Ariani et al., 2018; Llorens et al., 2015; Chazan et al., 2018). The Indonesian government also provides several platforms as facilities for SFH, namely learning houses, icando, indonesiastax, our desks, google for education, smart classes, Microsoft office, quipperscholl, teacher room, and others. With this platform or model, children are expected to continue learning optimally.

Changes in the online learning process at the elementary school level during the Covid-19 pandemic are felt by students and teachers, including parents that assist the children. Parents' involvement in learning activities is needed because their support and assistance provide a high contribution to the children's abilities (Pezdek et al., 2002; Rasmitadila et al., 2020; Owusu-Fordjour et al., 2020; Muir, 2012). They should also realize that mathematical abilities' development needs to be stimulated by various activities such as learning through proper guidance. Moreover, this is an important educational goal to ensure children solve problems with various strategies (Razzouk & Shute, 2012; Nugraha & Suryadi, 2016; Jacob et al., 2010).

Previous research has reviewed parental guidance and assistance in mathematics learning, such as Baranovich et al., 2019; Silinskas & Kikas, 2019; Vandermaas-Peeler et al., 2018; Maloney et al., 2015; and Jamaluddin et al., 2018. Some parents do not understand how to provide proper mathematics tutoring. They guide children, but inadequate or rigid tutoring skills using strategies contrary to those used by classroom teachers certainly confuse children, hence causing a negative impact on learning (Maloney et al., 2015). Other results include the lack of parental understanding related to mathematics

basic concepts, inadequate learning media utilization, and parents' desire for children to get instantaneous good grades (Jamaluddin et al., 2018). However, no research has examined mathematics guidance implementation in low grades, especially during a pandemic, because the Covid-19 situation is new.

Parental involvement in form of interest and support 'at home' majorly influence children's mathematics learning outcomes and abilities. However, many parents feel ignorant about current educational practices and how they can be more involved in the process. Several initiatives have been implemented internationally to promote home-school relations, but the documentation is limited, particularly in the field of mathematics education (Maloney et al., 2015; Shumow, 1998; Sonnenschein & Sun, 2017). Given the important parents' role in providing learning and guidance for their children during the Covid-19 pandemic, the implementation was examined.

The need to explore the challenges and obstacles in carrying out the math tutorial at home was felt. Therefore, this research aims to investigate the tutoring implementation's description during the Covid-19 pandemic in Indonesia, especially Lampung Province. It can be used as a reference and solution for parents in dealing with online mathematics learning conducted by teachers and children through internet technology.

Based on the above background, the objectives are (1) to provide an overview of the mathematics learning guidance implementation in the low grades by parents during the Covid-19 pandemic, and (2) knowing the needs, constraints and obstacles of tutoring the children.

METHOD

A descriptive analysis method was used to provide an overview and explanation of the math tutoring implementation in children. The quantitative and qualitative approaches were utilized. The quantitative was used to show the percentage of parental guidance in mathematics learning for children during the Covid-19 pandemic. Meanwhile, the qualitative was used to analyze the guidance implementation through interviews with parents, which was oriented towards the needs, challenges, and difficulties or obstacles encountered.

The research was conducted in Metro (Lampung) with 196 parents as samples, while the instruments used were questionnaires and interviews. The questionnaire was a Likert scale consisting of four answer choices which were the guidance implementation aspects in children's mathematics learning during the Covid-19 pandemic. This consisted of 25 statement items, where each had 4 options (never, sometimes, often, and always). The items were obtained from mathematical guidance implementation by following Piaget's theory (1976), and the learning concept was from Freudenthal (1991), a skill set in understanding children's thinking (Jacobs et al., 2010) as well as the guiding principles of Beuce (2008). The interview questions led to the parent's identity items, needs, challenges, as well as difficulties and constraints experienced. Then, the data were subjected to quantitative descriptive analysis with percentages and a qualitative that described the implementability and obstacles in parental guidance on mathematics learning for low grades.

RESULTS AND DISCUSSION

According to the research in early December 2020, the following results were obtained.

Implementation of Parental Guidance in Mathematics Learning

No	Aspects of Guidance Implementation in Mathematics Learning	Never	Sometimes	Often	Always
		In Percentage			
1	The contextual implementation of learning and games in guiding mathematics learning	1.65	42.65	40.00	15.70
2	Media utilization in guiding mathematics learning	11.50	30.80	34.60	23.10
3	Attention to the use of children's strategies in performing math tasks	0.00	21.15	42.30	36.55
4	Investigating children's understanding in providing mathematical answers	3.70	15.25	41.35	39.70

5	Decisions in responding to children's mathematical understanding	0.00	60.88	15.44	23.68
6	Integration of mathematics with other subjects	6.60	56.70	26.70	10.00
7	Discipline and motivation in mathematics learning	3.08	12.32	37.87	46.73
	Average	3.79	34.25	34.04	27.92

Based on the table above, the highest average percentage was 34.25% found in the "sometimes" answer. This showed that the parental guidance implementation in mathematics learning for children in low grades is not good enough, but each aspect's detailed explanation is as follows.

In the contextual and games utilization aspect, the highest percentage is in the "sometimes" answers, which means meaningful learning with pleasant situations in children tends to be neglected. These need to be presented in the early grades of elementary school. Mathematics learning essentially involves reading activities from the reality of the child's life (Benefits, 2010: 9). Frudenthal (1991) stated that mathematics is a human activity and according to Einstein, *as far as the laws of mathematics refer to reality, they are not certain; and as far as they are certain, they do not refer to reality*. These statements show that learning mathematics requires real context.

Mathematics learning involves children in building knowledge with real and close situations to achieve the objectives as well as solve logical problem. Furthermore, with a contextual situation, their mathematical thinking skills become more critical (Kusumah et al., 2016). Concrete experiences close to the child's daily life and games should be provided by parents that play an important role in determining the learning quality at home. According to the National Association for the Education of Young Children, students in the low grades are classified as early childhood, therefore they like games in their developmental years. Children learn easily through play activities which provide meaningful experiences in fun situations that will develop their abilities (Amalina, 2020; Cohnsen et al., 2015; Nathaniel Bryan & Christopher C. Jett, 2013; Schuler, 2011; Vogt et al., 2018; Yelland, 2002). Therefore, parents' willingness to accompany children in learning mathematics through plays is needed.

In the media utilization aspect, most parents often answered with the highest percentage. Hence, this shows that in guiding activities, parents are aware of media utilization's importance which include using objects around the house as a learning medium. Piaget (1976) stated that primary school age is at a concrete operational stage during development, which requires real or concrete objects to form children's knowledge. Bruner (1977) also emphasized that in the learning process, students should be allowed to manipulate objects or teaching aids, therefore they can easily find and understand mathematical concepts well. Furthermore, children interact directly with the learning object by using all of their sense organs. Moreover, Dale (1969) estimated that ability acquisition through the visual sense is around 75%, hearing is 13%, and other senses is 12%. Therefore, when children carry out something by direct involvement in objects manipulation, then the maximum mathematical ability will be obtained.

In the aspect of paying attention to the use of children's strategies and investigating their mathematics understanding, the highest percentage was found in the "often" answer, which means that the parental guidance implementation was good enough. Parents know the importance of exploring children's mathematical understanding through various questions, and their attention to strategies used in math will give children the strength to solve a problem in various ways. In developing math skills, there are 3 sets of interrelated skills including (a) paying attention to children's strategies, (b) interpreting their understanding, and (c) deciding how to respond based on the understanding (Jacobs et al., 2010). In learning mathematics, it is not only about children being able to answer questions or solve problems but also how they performing thinking and understandings.

Furthermore, on the decision in responding to children's mathematical understanding and integration of the subject with others, most parents answered "sometimes", meaning in this aspect, the guidance implementation was not good. A small proportion answered "often" and "always", while some answered "never" in terms of integration. In fact, in low-grade, students need to be faced with thematic learning, meaning mathematics integration with other subjects. This needs to be understood and carried out by parents considering the early school-age development period. Thematic learning has several characteristics, namely experiences and activities relevant to the children's developmental level and needs. Furthermore, the activities are chosen based on their interests and needs, learning activities are more meaningful and memorable making the outcomes last long, and this help to develop 'thinking and social skills, as well as present learning activities according to problems often encountered (Muslich, 2008).

The last aspect was discipline and motivation in mathematics learning, where "sometimes" had the highest percentage, and some parents even answered "never", showing a poor guidance implementation. Some guiding principles that should be considered by parents include 1) All aspects of a child are very important, 2) Learning is not separate because everything is interrelated, 3) Intrinsic motivation from within is important, and 4) Self-discipline is very important (Beuce, 2008). Furthermore, motivating children before confronting a problem is an effective early stage for fostering positive attitudes during the learning process (Herman,2007).

Parents' Needs, Challenges, and Obstacles in Mathematics Guidance Implementation for Children

Based on parents' interviews in Lampung Province via the internet, some information was obtained about the needs, challenges, difficulties, or obstacles experienced in guiding children's mathematics learning during the Covid-19 pandemic, as follows.

1. when the child is tired and the parents do not know what to do, then the child wants to complete the task.
2. It takes patience for the child to understand mathematical concepts.
3. Parents inability to teach mathematics causes difficulty in understanding.
4. Parents cannot give children the maximum possible way to solve mathematics according to teacher's guidance at school.
5. Parents find it difficult to provide an understanding according to their age.
6. When understanding logic in children, it takes patience and high commitment.
7. Children prefer to play than solve math.
8. Children sometimes do not want to learn because math is considered difficult.
9. Lack of lesson guides for parents makes it sometimes confusing to explain to children.
10. The material that should be given is sometimes not right because there is no explanation from the teacher.
11. At first, children find it difficult to accept their parents as current teacher. They listen more easily and respect their teachers in accepting lesson materials, as well as consider parents as a place for them to spoil, laze around and play. During a pandemic, children are not easily adaptable to listen and pay attention to their parents when giving lessons. They tend to be relaxed and have no motivation to focus, therefore, parents should be more creative in seeking their attention. Sometimes parents are impatient and scold their children for not focusing and just want to play. However, with clear rules, discipline and reward-punishment, children begin to adjust and slowly focus on the lessons.
12. Parents expected that in the future, there will be separate guidance to ease the teaching of their children.
13. Parental assistance in mathematics learning requires extraordinary patience because children will feel relaxed or ignorant/indifferent/ careless when they are directed. It is preferable that during the Covid-19 pandemic, learning is supported by videos from teachers, therefore children can easily understand mathematics and its solutions.

Family, especially parents, is the first education foundation for children (Hayati, 2011). Parental involvement in learning offers many opportunities for children's success. This not only improves academic achievement but promotes better behavior and emotional social adjustment, meaning many positive bonuses are found in the process (Sapungan&Sapungan, 2014).

Studies have described an involvement capable of influencing children's development in the form of interactions with their parents (Dockrell et al 2004; Hart and Risley 2003; Leseman 2002). Their learning abilities' success will be more focused on understanding and interaction in the family context where they grow (Dockrell et al 2004; Guo and Harris 2000; Hart and Risley 2003; Gottfried et al 1998).

Therefore, to develop children's learning abilities perfectly, parents need a mature understanding of their development. Muir, 2012 stated that the effect of parental involvement on children's academic success cannot be underestimated. These results establish the importance of a support system obtained by children from home, showing they are better academically and have more positive school attitudes when having parents that are informed, knowledgeable and involved in learning. Furthermore, their brainpower, work ethic and genetics are equally important, which all work towards achieving life goals. Children with two parents that operate in a supportive role enjoy learning and get good grades than those with neglectful parents. Also, when accompanied by active and understanding parents, they have a higher tendency to succeed.

CONCLUSION

Overall, parental guidance implementation in mathematics learning for children in low grades has not been going well. Furthermore, many obstacles and difficulties were faced by parents while conducting math tutorials during the Covid-19 pandemic. Parents tend not to understand how to guide on mathematics learning, due to anxiety about the children's lack of understanding of the lessons. However, under any circumstances, tutorials need to be carried out, because parental guidance is one of the keys to successful learning.

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