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Types of Oral Questions Used by Teachers in Mathematical Problem Solving Teaching in Primary School Mathematics Teaching

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ABSTRACT--- *This study aimed to identify the types of oral questions commonly used by primary school mathematics teachers in their teaching. Data from the qualitative case study was collected through semi-structured interviews, document analysis and field notes. Six mathematics teachers from six different primary schools were selected as participants of the study using purposive sampling method. The data were then analyzed using a constant comparative method to identify the patterns and themes that emerged from the data obtained. The study found that, in implementing teaching of mathematical problem solving, four types of oral questions are often used by teachers to guide students' understanding of mathematical problems. The findings showed that mathematics teachers used text-based questions, multi-mode questions, operational comprehension questions and question-based operation. As a conclusion, the results of the study revealed the importance of oral questioning in the teaching of mathematical problem solving. By using all types of questions identified, students were actually stimulated to understand the mathematical problem and were helped to plan various strategic ways to solve the given mathematical problem.*

Keywords--- *Oral Questions, Mathematical Problem Solving, Primary School, Mathematics Teaching.*

I. INTRODUCTION

The oral questioning process is an important element in ensuring effective mathematics teaching (Mahmud et al., 2019). Oral questioning plays an essential role in improving students' thinking skills as well as their ability to apply mathematical reasoning. Thus, oral questioning is often used by teachers as one of the methods to aid students' understanding and thinking in solving various mathematical problems discussed in the class. As posited by Norulbiah and Effandi (2016), problem solving activities provide opportunities for students to think creatively and systematically. When solving a problem, a problem solver will experience active experience, which involves cognitive strategies and metacognition (Mahmud, 2019; Yunus, 2015). Therefore, students' exposure to problem-solving activities can instill curiosity, train them to persevere, be confident and persevere in solving their problems (Wong, 2015). In addition, the use of various oral questioning techniques in mathematical problem solving can enhance students' interest as well as develop their metacognitive skills in solving mathematical problems (Desli & Galanopoulou, 2017). This is because through oral questioning, students' minds are constantly stimulated to

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explore and constantly build connections to the various information available to plan and implement solutions to a mathematical problem.

Acquisition of mathematical problem solving skills is important in order to produce students who are truly proficient in mathematics (Surif, Hidayah, Ghafar, Ibrahim, & Abdullah, 2014). Several perspectives are related to ability in problem solving, including acquiring 'mathematical thinking', and attaining the methods 'as a heuristic' and also 'as a process for achieving goals'. However, the process of getting students to acquire problem solving skills is not an easy task as they need to be trained to think critically in solving mathematical problems. In this context, oral questioning plays a role in providing the motivation to train students to sharpen various skills needed to solve mathematical problems. Therefore, teachers need to be aware of students' different needs to equip them with problem solving skills.

A number of researchers have presented their own models of mathematical problem solving heuristics including Polya (1957), Schoenfeld (1985; 2013), Goldin (1998), Krulik and Rudnick (1996). But the most commonly referred is the problem solving model posed by Polya (1957). Polya emphasizes on the four essential aspects of solving a mathematical problem, which are understanding the problem, planning a strategy, implementing the strategy and looking back.

Problem solving can be categorized into two aspects; which are i) how the problem is conveyed-linguistically (using words) or non-linguistically (using graphics or problem-based) and ii) the lighting of problem structures-information, objectives and action plans (Zhining et al., 1995). According to Tambychik dan Meerah (2010), there are two major steps in problem solving: i) turning problems into mathematical sentences; and ii) the calculation of operations involved in mathematical sentences.

However, in helping to build students' understanding of mathematical problems, teachers often use oral questions to stimulate their understanding and to plan solutions to the problems (Wong, 2015). Thus, many previous studies have discussed various types of oral questions used by teachers to aid students' understanding of mathematical problems in the process of mathematics teaching and learning. For example, McAninch's (2015) study discussed five types of oral questions adapted from Chin (2007) which are oral questioning framework, Socratic Questioning, Verbal Jigsaw Questioning, Semantic Tapestry Questioning, Framing Questioning and Question-based summary, used in helping students to improve their understanding in mathematics. This questioning framework was used by McAninch (2015) in her study of oral questioning in high school mathematics teachers. However, this questioning framework can provide an initial insight into the types of oral questions used to stimulate student thinking.

Table 1: Questioning Frameworks to Stimulate Students' Thinking

Approach and Strategy of Questions Used	Features	Time Used
Socratic Questioning	Use a series of questions to guide students' thinking.	To encourage students to come up with new ideas based on existing reasoning and knowledge.
i. Pumping	Encourage students to provide more information with clear request.	To encourage students to talk.

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ii. Reflective Toss	Ask questions in response to students' previous remarks.	Instruct students to think again.
iii. Constructive Challenge	Ask questions that stimulate students' thinking rather than provide direct corrective feedback.	To encourage the student to reflect on his or her answer if he or she does not provide the correct answer.
Verbal Jigsaw Questioning	Focuses on using mathematical terminology, keywords and phrases to build understanding.	For titles with mathematical technical terms especially for students who are weak in language skills.
i. Association of keywords and phrases	Guide students to formulate a series of recommendations to form a coherent mental framework.	To introduce factual or descriptive facts and strengthen mathematical vocabulary.
ii. Verbal cloze	Pause in the middle of the sentence to allow students to fill in the blank verbally to complete the sentence.	To find or emphasize keywords and phrases; for students who do not express or express themselves.
Semantic Tapestry Questioning	Help students come up with different ideas together within a conceptual framework.	To focus on abstract ideas and concepts; for concepts not associated with many mathematical technical terms.
i. Multi-pronged questioning	Ask questions from different angles that address various aspects of the problem.	To help students see problems from different angles.
ii. Stimulating multimodal thinking	Raises questions involving the use of various thoughts (e.g., verbal, visual, symbolic, mathematical logic) using diagrams, visual images, symbols, formulas, and calculations.	To encourage students to think in different modes and to understand concepts from multiple perspectives.
iii. Focusing and Zooming	Guide students to think at both the macro and micro levels.	To help students understand concepts at both the macro level, the whole level and the micro level, in depth.
Framing Questioning	Use questions to limit problems, issues, or topics and to structure the discussions that occur.	To help students understand the relationship between the questions and the information presented.
i. Question-based prelude	Use the suggestions for answers; the question acts as a precursor to the organizer and leads to the information presented later.	The beginning of a conversation to focus on the students' thinking.
ii. Question-based outline	Ask big/broad questions and subordinate questions or visually related questions.	Used to visually focus on students' thinking and help students see the relationship between questions.

Question-based summary	Provide an overview of the question format and answers to integrate the main content.	At the end of the lesson activities to briefly outline the main concepts.

In addition, Andrews et al. (2005) also proposed seven types of formative questions in the teaching of mathematics to promote mathematical thinking and higher-level thinking skills. The types of questions based on Andrews et al. (2005) are shown in Table 2.

Table 2: Types of Formative Questions in Mathematics Teaching

Question Type	*Description of Question Types*
Conceptual	Teachers emphasize or encourage the conceptual development of their students.
Derivation	Teachers emphasize or encourage the process of developing new mathematical entities from existing knowledge.
Structural	Teachers emphasize or encourage relationships or relationships between different mathematical entities; concepts, features and more.
Procedural	Teachers emphasize or encourage the acquisition of skills, procedures, techniques or algorithms
Efficiency	Teachers emphasize or encourage students' understanding or acquisition of processes or techniques that build flexibility, elegance or critical working perspective.
Problem Solving	Teachers emphasize or encourage student engagement with the completion of trivial or irregular tasks.
Reasoning	Teachers emphasize or encourage student development and articulation of justification and argument .

Although many previous studies have described various types of oral questions that teachers can use to improve students' thinking in mathematics teaching, the vast practice is still on the use of oral questioning and focus more on informative teaching. In addition, there have been previous studies such as in Tengku Zawawi et al. (2009) study which had showed that some teachers preferred to implement teaching that emphasized on procedural knowledge rather than the use of various types of oral questions to stimulate students' thinking. Thus, it indirectly raises questions on how teachers use oral questioning to help students solve mathematical problems. In addition, although there have been several studies that have examined the about the oral questioning, the findings of the study have focused more on the implementation of oral questioning in the teaching process in general and have not focused on the aspect of oral questioning in solving mathematical problems in particular. In addition, there is a lack of research on oral questioning conducted in primary schools, thus the knowledge on the practice of oral questioning is not fully explored. Thus, one area of study which is still lacking is on the practice of oral questioning in mathematical problem solving process, particularly in the form of oral questions posed by teachers in mathematics teaching in primary schools.

II. METHODOLOGY

The method adopted in this qualitative study was the case study method. Six primary school mathematics teachers from six different schools in a district in Malaysia were selected as participants of the study using purposive sampling method when? Data were collected using semi-structured observations, semi-structured interviews and field notes. The evaluation and review of the instrument is only done on the interview protocol and observation protocol. The interview protocol for this study was reviewed and validated by six experts in the field of mathematics education. A total of 4 observations and 4 stimulated-recall interviews were conducted for each study participant. This resulted in a total of 24 observations and 24 interviews conducted during the data collection process. During the observation process, the researcher took brief field notes that provided sensitive information about the classroom that was not visible through audio recordings and transcripts. The use of various data collection techniques has helped the researchers to triangulate the data at the data analysis level while also reinforcing the results obtained.

In this study, data were analyzed using the constant comparative analysis which involved combining data collection with analysis to identify patterns and themes that emerged from the primary data collected (Merriam & Tisdell, 2016). The initial analysis of the data began as soon as the field work began, thus, the processes of data analysis and data collection were done simultaneously and ongoing. The data collected in this study were analyzed using Atlas.ti 8 software to determine the themes and sub-themes.

Nik Pa (2014) stated that the validity and reliability of a qualitative study referred to the extent to which the study findings could accurately and consistently represent the phenomenon under study. Therefore, in this study, the researchers used several methods to enhance the validity and reliability of the study including triangulation method, member check, peer review, audit trail, researcher bias, and long term in the field.

III. RESULTS AND ANALYSIS

The findings showed that there were four types of oral questions used by teachers in teaching mathematical problem solving which were text-based questions, multi-mode questions, operational comprehension questions and operating results questions.

1) Text-Based Questions

Text-based questions are questions that teachers ask after students have read the questions in the textbook or printed questions they are discussing, whose purpose are to help students understand the content of written questions and to help students to identify the important contents of the text being discussed. The following are examples of text-based questions that teachers use in their mathematics teaching:

Teacher R : Alright. First question, please read the question, Adib.
Student : How much… .. (* student reads the question *)
Teacher R : Ok, how much is a diagram?
Student : There are 4 tickets ..
Teacher R : So how tall is he?
Student : 4.9 cm ..
Teacher R : So what does he want?

Student : Total length ..

[Roza, P2/4219-4481]

Teacher A : Yes .. So the question is .. What is the story about? what is color of the lace?

Student : Red and blue..

Teacher A : Red and blue . The keyword given is that red lace is less than blue.

Student : Less ..

Teacher A : So if the red is less, will the red lace be bigger or smaller in size?

Student : Small ..

Teacher A : Small .. So how do you know?

Student : * responds in a slow tone

[Ana, P2/22429-22793]

Based on the above excerpts, Teacher Roza and Teacher Ana asked questions based on the questions in the textbook to help students understand the information in the question. Students' understanding of the ongoing discussion can be enhanced by asking questions related to the text. Thus, students' understanding of the questions being discussed will help them to answer the questions better. Students were also exposed on how to understand and extract the important contents in the question before answering. In addition, text-based questions are also used by teachers as a means of knowing how well students have understood the questions. This was stated by Teacher Roza in the stimulated-recall interview session "… its purpose was to see if they understood the questions in the book" [Roza, SRI 1/2783-2867]. In the same interview, Teacher Roza also explained that "… students read questions. Then they will understand the question. Only then, can they do it." [Roza, SRI 3/4110-4207]. This indirectly indicates that students' understanding of the contents of the questions in the text is crucial to help them solve the problems better.

In addition, participants were also asked questions on mathematical terms, phrases and keywords to help students understand the need to answer questions found in a text [Ana, NL/09082018]. In this context, questions of mathematical terms or phrases and keywords are introduced and emphasized to students as factual or descriptive information as well as reinforcement of mathematical vocabulary. This can be seen based on the verbatim transcription of the teaching as follows:

Teacher A : Ok, fractions. Where is this shape? A whole number combined with proper fraction, what does it mean? What is that number?

Student : *No one answer the question*

Teacher A : Mixed numbers .. Please remember.

[Ana, P1/10745-10844]

Teacher N : Who knows what volume is?
What do we mean by volume ?

[Nadia, P3/300-396]

Based on the communication of Teacher Ana during her teaching, she asked the students questions about the term of fraction. This was emphasized because fraction is an important topic and it needs to be well-mastered by students as it is included in almost every topic in the mathematics syllabus. Thus, questions related to such terms allow teachers to reinforce the understanding and vocabulary of students' mathematics. Teacher Nadia, in turn, asked questions about volume [Nadia, NL/25092018]. These questions are examples of conceptual term that teachers often refer to in their teaching. Terms related to the term are often repeated by the teachers to help the student's subsequent understanding to form a coherent mental framework based on their understanding. In addition, the question also serves as a way of helping teachers to master students' understanding of the terms used in the subject being studied. The participants also explained that questioning on terms related to the concept in the question are basic terms that students must understand before learning the next concept. This is explained by Teacher Azah and Teacher Ada in their passages of teaching:

Teacher D : Yes, the reason is, I want to help students to understand the mathematical terms. So in this context, student has to really understand the meaning of perimeter before moving to the next teaching process.

Researcher: Oh, ok .. So in Year 4 that student didn't know what the perimeter meant?

Teacher D : They should know, but usually it's been a year since (they learn it) no one can remember.

Researcher: Means the purpose is to ask again? ..

Teacher D : Stimulate their thinking and refresh their memory ..

[Ada, SRI 1/10419-10532]

2) Multiple-Mode Questions

The topic taught by Teacher Ada and Teacher Nadia on Shape and Space require them to explain on the concepts of perimeter, area and volume. This requires them to use diagrams to help students better understand the concepts they are teaching. The following excerpt shows how the multiple-mode questions were used by Teacher Nadia in her mathematics teaching:

Teacher N : This one is easy. You had learned it since year four. What is this shape?

Student : Square

Teacher N : Alright. How many squares are here?

Student : 2 squares.

Teacher N : So there are 2 squares. I will label this rectangle A and another B. Now Teacher wants to find the perimeter of the joint shapes. Who knows what size or sides that we should consider to find a perimeter?

Student : (indicates the side to be taken to find the perimeter on the white board.)

Teacher N : Great. Really what does Ain mark for this size?

Student : That's right.

[Nadia, P1/2659-3345]

Based on the above excerpt, it was found that Teacher Nadia asked students using rectangular diagrams to help students understand the concepts and the procedure for solving questions related to the perimeter of two joint shapes. Questions given by teachers using diagrams had helped students to better understand the concept of perimeter. In this context, the teacher was trying to connect the visuals that students see with the concepts learned. Teacher Nadia said in an interview session that students could relate their existing knowledge to new things they are going to learn. Hence, it was easier for students to learn the new concepts. This is demonstrated in the excerpt below:

"… When we want to teach the concept of perimeter to students, it is difficult for us to teach it without showing the diagrams to the students. Students may not be able to connect with the knowledge they have. So, in this context, diagrams are used to help students visualize what teachers are asking and teaching"

[Nadia, SRI3/514-851]

Teacher Raha also uses multi-mode oral questions to help students better understand the information in the questions as shown in the excerpt below:

Teacher R : So now, what is the shape of the paper that I'm holding?

Student : Square.

Teacher R : Ok, square. How long is this shape?

Student : 4 cm.

[Raha, P3/6548-6698]

Based on the above dialogue, Teacher Raha questioned students using rectangular shape object? papers? This indirectly helps students to better understand the discussions that take place. Teacher Raha stated that students can better understand the content of the lesson, especially the mathematical concepts when the explanations and questions were given.

Teacher Ada stated that various modes of questioning helped students to think from different angles as well as helped students to create mental representations to help them understand the concepts of mathematics being studied.

“I think it's a good idea for teachers to use a variety of supporting materials such as diagrams, tables or anything else that students can see to make it easier for students to understand. Besides that, students can also imagine in their minds information that is so easy for them to remember.”

[Ada, SRI3/325-729]

In addition, Teacher Azah expressed the view that the use of oral questions using visual or concrete materials could help stimulate students' interest, especially for primary school students. Additionally, oral questioning activities will be more fun and enjoyable:

“When asking students questions using pictures or concrete materials, students will be more interested and interested in what we teach, especially to primary school children. They are also easier to understand. So the teaching process will be more exciting."

[Azah, SRI3/1047-1380]

3) Operational-Comprehension Questions

The analysis of the observations of the teaching and the verbatim transcriptions of the teaching, the researchers found that there were participants who asked students' operating questions during the teaching process. These kinds of questions are used in building students' understanding of the operations that are needed in solving the given mathematical problems. In this context, students' thinking is guided to help them develop the relationship between the information contained in a question and the mathematical concepts learned in order to solve the mathematical problem being discussed. The following excerpt shows how the operational-comprehension questions were raised during the lesson.

Teacher N : But this is a cube that has been cut The question was how much volume is left. If we want to find the one left, how is it?

Student : minus ...

Teacher N : What to minus?

Student : The whole minus the cube.

Teacher N : Yes, so we can find the rest.

[Nadia, P3/7436-7743]

Teacher D : Ok, 8 .. So the answer is 8 centimeters squared. Okay, so how do we find this whole diagram?

Student : Add all ...

Teacher D : Ok, add all .. Good, Sufiya. Why do we add it all?

Student : Because I want to look around measuring

[Ada, P1/14489-14549]

The above examples are part of the operational-comprehension questions posed by Teacher Nadia and Teacher Ada. These questions were used by the teachers to help students relate the operations needed to solve the problems based on the information given in the problem. This was stated by Teacher Ada, Teacher Azah and Teacher Raha in the initial interviews conducted:

"So that students can relate what operations they understand, to what we teach, to the questions we ask."

[Ada, II/3416-3526]

“Teachers need to guide students by asking students questions to help their understanding of the questions and operations they should use to answer questions. Especially for the low-achieving students because they are sometimes lazy to think."

[Azah, SRI3/2314-2577]

“In answering the problem solving questions, the teacher should guide the students to understand what operations are needed to solve the mathematical questions they answer. So teacher needs to ask questions to help students understand. Sometimes students do not understand and do not know what to do to solve the question”

[Raha, SRI3/2725-3052]

Based on the above discussion, it was found that the use of operational-comprehension questions was practiced by all participants when discussing mathematical problem solving questions. Besides, it also guides students in understanding and selecting the correct operations to answer the questions discussed.

4) Question-Based Operation

Analysis of the verbatim transcriptions show that the participants also frequently asked for the results of the mathematical operations. This question is called the question-based operation, where the teacher uses the question to elicit answers to a question that involved operations, which is part of the steps in solving given problems. Frequently, these types of questions are applied after the teacher asks the students about their understanding of the operations. The following is an example of how the question-based operation are applied to the teaching of mathematics:

Teacher R : Okay. Let's add it all. 20 + 10 + 10 + 8 + 5 + 4 + 5 +8, equals?

Student : 70 cm.

[Nadia, P1/7493-7617]

Teacher R : Next, 56.1 cm divide by 3. Answer in mm.

Student : 187 mm

Teacher R : That's right. You will get 18.7 cm then convert it to mm by dividing with 10.

[Roza, P3/5381-5449]

Teacher D : 5 centimeters. So 5 times 5?

Student : 25.

Teacher D : 25 times 5?

Student : Hmm, 30 .. 100 .. 125.

Teacher D : 25 times 5, you get 30?!

Student : No..125 ..

Teacher D : Haa? 100?

Student : 125 ..

Teacher D : 125 .. Really?Try to make a typical shape 25 by 5 .. 5 by 5?

Student : 25.

Teacher D : 2 times 5?

Student : 10 ..

Teacher D : Add 2? 12 .. So 125 cubic cm.

[Ada, P3/5626-6186]

Teacher Z : 9 plus 5? You think so already .

Student : Fourteen.

Teacher Z : Four here, one near the top.One plus six?

Student : Seven.

Teacher Z : Two plus eight?

Student : Ten.

Teacher Z : One plus one plus two?

Student : Four.

Teacher Z : Alright done this one. Then, what is the answer?

[Azah, P2/9791-10059]

Based on the excerpts above, it was found that students were asked to calculate for each calculation step performed. In this context, for steps of problem solving that require calculations, teachers get the students involved by getting them to think together until every steps in the problem solving process is completed [Azah, NL/18102018]. In addition, it also plays a role in ensuring the continuity of the teaching process whereby students remain focused and remain attentive to every detail of their teachings. In addition, this question also serves to maintain student engagement and interaction while discussions are in progress [Raha, NL/13112018]. This was stated by Teacher Azah and Teacher Raha in the follow-up interview sessions:

"Yes, to make their thinking more focused on the teacher's teaching"

[Azah, SRI1/4468-4563]

"For me, questions like these are very important to get the attention of the students."

[Raha , II/2862-2942]

In addition, question-based operation serves as stimulating questions to train students' to calculate fast, thus improving their skills in mental arithmetic, as stated by Teacher Ana in the following excerpt:

"Hmm, we are aware that in this mathematical teaching, the speed in which calculations are performed is very much emphasized. For example, if this kind of student still says "7 + 5?" Hmm "8..9..10 ..". It is slow so when we always train people to think this way, InshaAllah gradually he will become a habit of doing his own mental processes or activities."

[Ana, II/5970-6559]

Teacher Ada was questioned about the question-based operation used as mind training and practicing mental arithmetic which is very helpful to students when answering mathematics examination questions, especially in Math Paper 1 where students need to quickly calculate to get answers within the time given. She explained this in the interview excerpt below:

Teacher D :	For this student to quickly answer simple math calculations, we need to constantly train students with simple addition questions, simple subtraction, and easy multiplication exercises. They will be trained and skilled to perform calculations. At the same time practice their mental arithmetic.
Researcher:	Oh, so what's so important? Is it necessary for use then?
Teacher D :	Yes , especially during the Paper 1 mathematics exam .

[Ada, SRI 1/1193-1358]

Researcher:	Does this train students' minds to answer in the exam?
Teacher D :	Yes, it can really help students to calculate quickly.

[Ada, SRI 3/1019-1105]

IV. DISCUSSION

The study has found that, in implementing the mathematical problem solving process, there were four types of oral questions that teachers often used to aid students' understanding of the problems which are text-based questions, multi-mode questions, operational-comprehension questions and question-based operation. In this context, text-based oral questions were found to be in line with the findings of Scardamalia and Bereiter (1992), while findings on multi-mode oral questions were in line with the findings by Chin (2007) and McAninch (2015). However, the use of the operational comprehension questions and the question-based operation has not been highlighted in the literature. These questions had helped the researchers to better understand the use of questioning in guiding problem solving.

Problem solving questions play a major role in developing students' skills and competencies in answering and solving mathematical problems, especially in examinations (Norulbiah & Effandi, 2016). In addition, problem solving questions are also used by teachers to help students understand and explore the 'meaning' of a mathematical problem before deciding on the strategies to solve the problem. In this way, students will be able to better understand mathematical ideas and increase their confidence in solving mathematical problems. It is also explained by (Yunus, 2015) that teachers should provide students with the opportunity to explore the meaning of mathematics through problems they are solving. Thus, the problem-solving questions posed by the teacher will help students to connect the mathematical concepts that have been learned, thus improving their ability to solve various mathematical problems.

The study found that text-based questions were asked by the teacher after the students have read the questions in the textbook or printed questions related to the topic being discussed. In this context, text-based questions are posed to help students understand the content of written questions such as the questions in the textbook. This guides students through the first phase of Polya's (1957) model of problem solving. This is an important phase in which the students need to understand the mathematical problem given, hence the text-based questions given serve as a stimulus to help the students extract the relevant information in the question. It is also supported by Tambychik and Meerah (2010) that the phase in understanding mathematics questions is an important first step and needs to be supported through a variety of stimuli, especially oral questions from teachers.

For high-achieving students, it may be easy for them to understand and extract all the important information in the written question. However, it is may be quite challenging for the low-achieving ones. Students lack of understanding of the mathematical problem, may it be the mathematics contents or the language used, will create difficulty for them in identifying the strategy to solve the problem. Kanapathy (2016) also noted that students' misunderstanding of mathematical questions indirectly made it difficult for students to answer the TIMSS and PISA mathematics questions and this contributed to Malaysia's decline in global assessments. Thus, text-based questions clearly provide the stimulus to help students, especially students who are weak in a solving mathematical problems, as well as to help students to answer the questions better (Mahmud et al., 2019).

In addition, the study also found that text-based questions included questions about mathematical terms, phrases and keywords to help students understand information given in the problem. This is in line with the studies by Chin (2007) and McAninch (2015) who also found that teachers asked questions related to mathematical terms and terminology to help students understand a given problem. In the context of this study, the questions related to the terms contained in the mathematical questions emphasize on two skills, namely emphasizing on the correct pronunciation of the terms as well as the meaning and significance of the terms in mathematics. Thus, by understanding the meaning of the terms, it indirectly assists students' understanding of the topic being discussed and helps students to form a coherent mental framework based on their understanding. Not only that, by emphasizing on the mathematical terms in the text-based questions, it means that teachers are trying to emphasize on mathematical language to students. This is supported by a study by Mohamad et al. (2009) and Riccomini et al. (2015) which stated that the application of mathematical language is a very important matter where proper use of language could facilitate students' communication with mathematics and correct students' misunderstanding of the mathematical concepts used in the classroom. In addition, repetition-related questions can help students to remember mathematical terms more easily and help students understand new topics that they learn better.

In addition, a study by Riccomini et al. (2015) also stated that questions related to mathematical terms posed by teachers could help students to better understand a given concept. A good understanding of the mathematical terms in the teaching of mathematics enables students to build connection between mathematical concepts. Oral questions related to mathematical terms are important in mathematics teaching, especially in helping to improve students' understanding of mathematical language (Zhang & Lin, 2015). In addition, a good understanding of mathematical terms can help improve students' performance in solving mathematical problems as well as strengthen students' mathematical thinking. In this context, it is very important that teachers emphasize on mathematical terms through oral questions during the mathematics teaching process.

However, in helping students to develop fluency in mathematical language and mathematical reasoning, teachers should use standard mathematics or mathematical terms in a more dynamic, flexible and creative way so as not to confuse students' understanding. Sabri Ahmad et al. (2006) explained that confusion in mathematical terms was a problem faced by students and that made it difficult for them to understand and use the mathematical terms. This is because the terms in mathematics are the standard terms used in the mathematics curriculum standards. This should be taken seriously because students are exposed to global mathematics assessments such as TIMSS and PISA which use standard language and mathematical terms. that may make it difficult for students to understand the mathematical terms used and may result in a decline in mathematics performance of Malaysian students in global assessment.

In turn, it was found that teachers also asked operational-comprehension questions to build students' understanding of the operations that should be used in solving mathematics problems. In this context, students' thinking is guided to help them develop the relationship between the information given in the problem and the mathematical concepts being learned, in order for them to understand and solve the mathematical problems being discussed. Operational understanding questions are an important form of oral questions to help students understand the operations needed to solve a mathematical problem. In addition, students' thinking will be stimulated to clarify the understanding of the mathematical concept being learned and to help improve students' understanding of the mathematical operations needed to solve mathematical problems. Thus, in this context, it is important for teachers to increase the use of operational-comprehension questions, so that students can make connections between the concepts that are needed in solving mathematical problems without having to memorize specific steps in solving the problems. This is in line with the findings of Norulbiah and Effandi (2016) who found that most students thought that solving mathematical problems accurately can only be done by memorizing specific formulas and calculation procedures. This should be taken seriously in order for students to develop a sense of and to nurture mathematical thinking. It also impedes the teaching creativity of teachers (Mukhtar, 2016).

The oral questions related to the understanding of operations need to be nurtured by teachers as they can keep students thinking why the strategies that were designed are appropriate to enable them to solve the mathematical problems correctly. This is because the operational understanding questions posed by the teacher in the problem-solving process indirectly train the students to process all the information given in the problem and enable them to devise a strategy or procedure for solving the problem. This is also supported by Tambychik and Meerah (2010) who stated that students would be able to better plan their mathematics problems if they really understood the problems. It also indirectly enhances students' attitudes in terms of perseverance, willingness and confidence in solving mathematical problems (Aguilar & Telese, 2018).

Furthermore, it was found that teachers also asked questions about the results of operations in solving mathematical problems. This question is used by teachers to get results or answers from the operations they are performed as part of the steps in solving the problems. Based on the observations made, it can be argued that the questions related to the results of the operations play an important role in training students' mental arithmetic skills. This is consistent with a study conducted by Tambychik and Meerah (2010) which explained that arithmetic mental skills are very important elements in training students to enhance problem solving skills, as well as number fact skills, information communication skills, mathematical language skills and spatial visualization skills. In addition, Naukushu (2011) pointed out that mental arithmetic skills were important element as they are one of the factors contributing to the development of the number concept. Repeated questions about the results of the operations can train students to think faster and especially in strengthening students' knowledge of basic mathematical facts. This is seen as important as it has great impact on helping students to do calculations faster, especially in answering exam questions.

V. CONCLUSION

In conclusion, the results of the study showed the importance of oral questioning in helping teachers in their mathematics teaching of problem solving. By using all types of questions discussed, students were actually stimulated to understand mathematical problems and helped them to plan various strategies to solve those mathematical problems. So, it is important for mathematics teachers to consistently stimulate students' thinking by providing them with suitable types of oral questions, especially in the teaching of mathematical problem solving. However, the result of the study illustrated the phenomenon only happened in the context of this study and thus, cannot be generalized to other population. So, the researchers suggest that further studies need to be done to understand more about how mathematics teachers can help students develop their skills in problem solving by using oral questioning.

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