Resolving mathematical word problem using table guides and checks with video learning assisted

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Abstract. When students are faced with complicated word problems, primary school students need to use methods they can follow. The purpose of this research is to use table guides method and check the video-aided learning to solve the mathematical word problem. The method used in this study is a quasi-experimental method with the subject of research on third-grade students in elementary school. The research instruments used are tables guides and checks and flow tables. Based on the results of the research indicates that this method allows students to be able to solve mathematical word problem more easily. The method of tables and checks with the help of video learning can be used like a math game so that students are actively involved in learning mathematics.

1. Introduction
Mathematics is never separated from the language of symbols and structures that are interdependent. Mathematical problems are not always straightforward but need to be constructed first into mathematical symbols such as mathematical word problems, students need to understand, design, and solve the story problems [1,2]. The cognitive structure of students such as arithmetic helps facilitate the development of new cognitive structures. Need to be structured handling also to arrive at students understand the material well and thoroughly, the teacher and students understand each other's aims and objectives of learning, the teacher prepares and designs the material and strategies that are suitable and can be followed by students so that students are actively involved in the learning process so that the learning objectives are achieved as expected [2-4]. Often students do the math because of confusion about how to solve it. The impact of this is that students increasingly dislike mathematics which has implications for low learning outcomes because they do not understand and master mathematics material [5], whereas mathematical word problem give students challenges in applying mathematical thinking in various situations [2].
The solving mathematical word problem requires the integration of students learning processes that need to understand the language and factual information [6,7], the results of data analysis show that no student can correctly answer all the questions given the transformation phase of the problem as much as 46.6% of students who made mistakes including the students did not know the method to be used [8]. Teachers pay more attention to students critical thinking process in solving problems, especially problems in the form of story problems when learning based on differences in visual, auditory, kinesthetic learning styles of students [9]. To facilitate differences in mathematical word problem solving style using a guess table and check assisted with learning videos technological support often becomes a prerequisite of the success of learning, can where and whenever learning activities take place [10,11], through the use of learning videos (multi-media) to help students do the learning process easily [12]. fun learning atmosphere [13], enhance learning motivation [14], increase the effectiveness of learning [15], and improve the level of understanding [16].

There are many factors that influence the success of student learning, including: media, teachers, strategies and others. Students find it easier to solve math problems with simple symbols compared to the existence of story problems that must be changed to mathematical symbols [17]. Matter of math word problem requires students to understand well sentence after sentence, starting from what is known, then asking the formula or the right steps to solve it. Efforts to help students solve story problems need to use methods they can follow. Before students are able to change story problems in mathematical formulas students can use methods and check, because this method allows students to be able to solve so a easily [3]. This method makes it easy for students to be able to work on algebra problems. The method used in this study is a quasi-experimental method, applying the method of solving math story problems by using guess tables and checking. In this study, aside from the teacher's explanation of the steps to solve story problems with the method, it was also assisted with a video clip about the steps and ways so that students are expected to better understand and understand more of the shows.

2. Method
The method used in this study is a quasi-experimental method conducted on 36 fifth grade students of one elementary school in the city of Bandung. The author does not take students as the smallest sample unit, because it does not allow creating a new class for the benefit of this research so that sampling from the population is done randomly by group (cluster sampling). The instruments that will be used in this research are three math questions in the form of stories used for pretest and posttest, two practice questions and a questionnaire. The data collected from various instruments used are then analyzed qualitatively and quantitatively. Questionnaire is given to students to obtain information on interests and attitudes towards learning that is developed. The number of statements and questions presented is seven items, the questionnaire is given after all the learning has been developed. Step-by-step table guessing method and assisted video scribe check.

The steps to solve a mathematical word problem are as follows: read and understand the problem, write the known and asked questions, make a table as needed, in the first line write the statements as asked, start by trying to fill in the numbers accordingly then check the suitability with the question (Figure 1.). Reliability of logical framework in this research, it is used: analytical, logical, conceptual, and operational verification by an expert [18].
3. Results and discussion
To find out the ability of students to solve mathematical word problems, the researcher gave a pre-test question then given a practice problem in the form of a mathematical word problem. The learning model is applied using a guess table and checking, in applying the model students listen to the steps to apply the model. The results of the pre-test and post-test are as follows.

Table 1. Pre-test and post-test results of mathematical word problem.

| No. | Pre-test | Total | Post-test | Total | Gain |
|-----|----------|-------|-----------|-------|------|
|     | No. 1 | No. 2 | No. 3 | No. 1 | No. 2 | No. 3 | No. 1 | No. 2 | No. 3 |       |      |
| Average | 46.7 | 27.8 | 31.1 | 35.19 | 52.97 | 62.16 | 67.03 | 60.72 | 25.41 |
| Standard of Deviation | 0.79 | 1.23 | 1.30 | 2.34 | 0.98 | 1.28 | 0.89 | 1.91 | 21.07 |

Table 1. shows that the pretest score is very small on average 35.19 from a maximum score of 100, this is due to the low understanding of students in changing the context of the problem of mathematical word problem into their own language into the language of symbols. The number of students whose score is more than 60 is only 25%, namely 9 students who are able to complete two correct questions from the three questions given, students make mistakes in transforming information given in the problem into mathematical sentences [8], 60.72 of the maximum score of 100. The number of students who scored more than 60 was only 55%, namely 20 students who were able to complete two correct questions from the three questions given, this indicated that the method used could improve the ability mathematical word problem.

Table 2. Percentage of student questionnaire results on learning.

| No | Statement | Strongly Agree | Agree | Disagree | Strongly Disagree |
|----|-----------|----------------|-------|----------|-----------------|
| 1. | I like learning mathematics this way | 36 | 33 | 14 | 17 |
| 2. | Only certain material makes me like math | 36 | 47 | 14 | 3 |
| 3. | I like math because the teacher’s explanation is easy to understand. | 25 | 50 | 17 | 8 |
| 4. | I do not understand the math word problems in the form of stories | 17 | 44 | 25 | 14 |
Table 2. cont.

|   |                                           |   |   |   |
|---|-------------------------------------------|---|---|---|
| 5.| Studied Mathematics only when it was a test or homework | 11 | 19 | 33 | 36 |
| 6.| Mathematics is the most difficult subject    | 17 | 42 | 19 | 22 |
| 7.| I find it difficult if math problems are changed into the form of math word problem | 22 | 47 | 25 | 6  |

Table 2 shows students' responses to learning obtained from the questionnaire given. Strongly agree and agree to be categorized on positive attitudes for positive statements and disagree and strongly disagree categorized on negative attitudes for positive statements or vice versa. Most 67% of students showed positive enthusiasm and were happy to solve math word problems using guess tables and computer assisted examinations because video learning made students more interested and addition to building visualization [15]. 69% or 25 of 36 students stated that students felt difficulties when math problems were changed into the form of mathematical word problems. 65% of students like mathematics because the teacher's explanation is easy to understand, it can be interpreted that in grade V students the position of the teacher plays an important role in building students' positive attitudes towards mathematics. 61% or 22 of 36 students do not understand the math word problems form. This is because students have difficulty understanding the problem well, changing the mathematical sentence to a mathematical symbol or formula. As a result, 59% of students or 21 of 36 students stated that mathematics is the most difficult subject. The following are the answers to the pre-test and post-test students

![Figure 2. Answer to student pre-test.](image1)

![Figure 3. Answer to student post-test.](image2)

In the pre-test students do not understand the problem properly so that many students' answers are wrong, as shown in figure 2, generally the students had difficulty in solving the problem because the students did not write down the questions asked, and did not know the purpose of the questions so that the students' answers were only guessed and the answer was wrong. Table method and guessing students can solve the problem well, but there are some students who try to guess the answers and examine them but do not pay attention to the context of the problem properly figure 3.
4. Conclusion
Based on the results of the study it can be concluded that students have difficulty in completing mathematical word problem factors causing students to have difficulty in understanding problems, changing story problems into the language students understand, writing down what is known and being asked. Through mathematical learning to solve the problem word with a guess table and check with the help of learning videos using students are very enthusiastic and respond positively to the method given because it is more interesting and challenged to solve the problem from the guesses given. Students can guess and check answers but make mistakes where students do not re-examine the context in question so this method needs to be re-applied. With video can provide assistance in passing the guessing and checking methods and provide a comfortable learning environment and students are more active in learning mathematics.

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