

Implementation of Jarimatic Method on the Material of Multiple and Division

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ABSTRACT

The objectives of this study are 1) to determine the process of implementing the Jarimatika method in the multiplication and division material for class VA at MIN 6 Jember for the 2020/2021 academic year. 2) to describe the advantages of the Jarimatika method on multiplication and division materials for class VA at MIN 6 Jember in the 2020/2021 academic year. 3) to describe the shortcomings of the Jarimatika method in the multiplication and division material for class VA at MIN 6 Jember in the 2020/2021 academic year. The approach used in this research is a qualitative approach and the type of research used is phenomenology. The data source for determining the subject of this research using Purposive technique. The results of the research on the Implementation of the Jarimatika Method in the Multiplication and Division Material of Class VA at MIN 6 Jember in the 2020/2021 academic year are 1) The implementation of the jarimatika method in the multiplication and division material of class VA at MIN 6 Jember includes; Planning, Implementation, and Evaluation. At the planning stage, the teacher provides an initial description of the concept of jarimatika (modeling). Implementation stage, namely planting and understanding the concept of jarimatika method, skill building/practice of jarimatika method. The final stage is Evaluation, Evaluation consists of written tests and non-written / oral tests. 2) The advantages of jarimatika method on multiplication and division material of class VA at MIN 6 Jember are Students are more active, can be visualized, more interesting, efficient, can be taught widely, train the right and left brain, the tools used do not need to buy. 3) While the shortcomings are that students are often wrong in multiplying and adding, not all can be solved with jarimatika, if less practice students will be slow to calculate compared to counting with abacus tools, and there are formulas.

Keyword : Jarimatic, Multiple, Division

INTRODUCTION

The primary school/madrasah ibtidaiyah (SD/MI) education process is actualized in the form of learning activities at school consisting of various subjects, namely Mathematics, Indonesian Language, Natural Sciences, Social Sciences, Civic Education, Cultural Arts, Local Language, and Religious Education. Of all the existing subjects, reading, writing and arithmetic are materials that are taught from the beginning of elementary school. Mathematics is one of the most important subjects in primary school. Mathematics has been introduced since students entered grade 1 of elementary school (SD)/MI (Dwi Kurino & Cahyaningsih, 2020; Masoum et al., 2013; Rahmatul Ilmi & Alwen Bentri, 2020; Tjalla, 2010).

The role of mathematics is very important in supporting development in the field of education (D'Ambrosio, 2003; Das, 2019; Kasirzadeh, 2021; Maass et al., 2019). Mathematics is one of the most important branches of science that must be learned by students at every level of education. In addition, mathematics is a means of support for understanding various sciences such as Chemistry, Physics, Fiqh Mawaris, and other sciences that can help students to think logically and practically for everyday problems (Bidwell, 2020; Fathani, 2019; Rahayu Hertina Marbun dan Wardi Syafmen, 2015). Russefendi said that "studying mathematics can shape the personality of students who have creative, critical and logical thinking, scientific, honest, frugal, disciplined, diligent, humane, social justice, and responsible for the welfare of the nation and state (Russefendi, 2006; Suandika et al., 2020).

Therefore, in an effort to minimize the negative impact, mathematics learning should be carried out as interestingly as possible and with a presentation that is easily understood by students so that students do not feel bored and afraid when learning mathematics.

Based on the results of the researcher's pre-survey interview on September 19, 2020 to Mr. Ishaq S.Pd. M.Pd. as the VA class teacher of MIN 6 Jember, the problem that occurs is the weak multiplication of students and the displeasure of students when mathematics subjects, while multiplication is something that cannot be abandoned in the upper grades, namely IV, V, and VI to solve problems. To support this learning he uses the method of memorization and jarimatika, because not all students are strong memorization then one alternative is with this jarimatika method.

This kind of learning requires an active and professional teacher who has the ability to manage the classroom atmosphere to remain conducive, in addition to teachers this kind of learning also requires methods that can make students happy and enthusiastic about learning. Being an active and professional and fun teacher is required to have the ability to develop approaches and choose effective learning methods. one of them is by using the jarimatika method.

METHOD

Research Approach and Type

Researchers in the study of the implementation of the jarimatika method on the material of multiplication and division of class VA at MIN 6 Jember used a qualitative approach. Qualitative research is research that intends to understand the phenomenon of what is experienced by the research subject such as behavior, perception, action and motivation. This research is presented in descriptive form with words and language, in a special natural context and by utilizing various scientific methods.

This research uses a qualitative approach, because this research will produce descriptive data or in the form of written words. Qualitative is a research procedure that produces descriptive data in the form of written or spoken words from people and behaviors that can be observed as well as directed at holistic (whole) settings and individuals.

As for the type, the research used by researchers is a type of phenomenological research, because researchers understand in detail about a phenomenon that occurs at the research location. Phenomenological research is research that seeks to understand the meaning of an experience from the perspective of participants. Phenomena that occur in the field, regarding the implementation of the jarimatika method on the material of multiplication and division of class VA at MIN 6 Jember.

Research Location

In a study, location is one of the instruments that is quite urgent in nature, as for the location used as a research site, namely MIN 6 Jember, which is located in the village of Urip Sumoharjo Gg. Legog Tanggul Subdistrict, Jember Regency, East Java Province, Postal Code 68155.

Research Subjects

In this study, the research subjects used as informants are:, Head of Madrasah MIN 6 Tanggul Subdistrict, Jember Regency, Dra. Hindanah. as the Head of Madrasah MIN 6 Tanggul Subdistrict who has given permission to research as well as the most understanding about the learning carried out at MIN 6 Jember. Classroom teacher VA MIN 6 Tanggul District, Jember Regency Ishaq Kholilur Rohman, S.Pd., M.Pd. as the VA class teacher MIN 06 Jember who applies and teaches the jarimatika learning method on multiplication and division material. And VA class students of MIN 6 Tanggul Subdistrict, Jember Regency. As those who apply and implement the jarimatika learning method on multiplication and division materials.

Data Analysis

In this study, researchers in data analysis techniques are using the analysis of the thoughts of Miles, Huberman, and Saldana. The activities carried out in data analysis: Data Condensation, Data Presentation (Data Display). And Conclusion, drawing/verification.

RESULT AND DISCUSSION

In the implementation of learning methods, there must be advantages and disadvantages. Including the implementation of the jarimatika method on multiplication and division material of Class VA at MIN 6 Jember, there is an advantage and disadvantage of this jarimatika method.

For its own advantages, children are easier to calculate multiplication and division because it can be visualized, students prefer to count using fingers because it is more interesting, besides that the jarimatika method is more efficient not time-consuming, the jarimatika method can be taught anywhere including the student's guardian when students study at home, train the right and left brain, and also the tools used do not need to buy because they include our body members.

From the results of observations and interviews with VA class teachers at MIN 6 Jember, the advantages of the jarimatika method are; 1) students are more active during learning activities because not only the teacher explains but students must also practice multiplication and division with their respective fingers, 2) children are easier to calculate multiplication and division because it can be visualized, 3) students prefer to count using fingers because it is more interesting, 4) besides that the jarimatika method is more efficient not time consuming, 5) the jarimatika method can be taught anywhere including the student's guardian when students study at home, 6) train the right and left brain, 7) the tools used do not need to buy because they include our limbs.

The shortcomings of the jarimatika method in the multiplication and division material of Class VA at MIN 6 Jember, are as follows

As for the shortcomings themselves, students also often forget the concept of the jarimatika method, such as the tens finger is sometimes confused with the unit finger and students who often add or multiply their fingers incorrectly, not all multiplication and division can be completed with this jarimatika method because of the limitations of our fingers, students who lack jarimatika practice will be slow when calculating compared to using abacus or other tools, there are formulas that must be memorized.

From the results of observations and interviews with the class teacher and several students of Class VA at MIN 6 Jember, the shortcomings in the implementation of the jarimatika method on multiplication and division materials are; 1) students often make mistakes in multiplying and summing up the final results and there are some students who are still confused about which fingers are

tens and which fingers are units, 2) not all multiplication and division can be solved by this jarimatika method because of the limitations of our fingers, 3) students who lack jarimatika practice will be slow when calculating compared to using an abacus or other tools, 4) there are formulas that must be memorized by students.

DISCUSSION

Based on the results of the presentation of research data through observation, interviews, documentation and analysis methods that have been carried out based on the focus of the problem that has been formulated, various findings in the field will be presented which will later be communicated with the theories used as the basis by researchers in conducting research.

Implementation of the Jarimatika Method on Multiplication and Division Materials for Class VA at MIN 6 Jember 2020/2021 Study Year

In the implementation of the jarimatika method on multiplication and division material at MIN 6 Jember, there are several stages carried out, namely; planning, implementation, and evaluation.

Planning of the Jarimatika Method on Multiplication and Division Materials for Class VA at MIN 6 Jember for the 2020/2021 academic year.

Based on the field results at MIN 6 Jember, that planning is a plan that is prepared before carrying out learning activities, the success of a learning activity is determined by learning planning, learning planning includes formulating goals to be achieved, determining the strategy to be carried out, the material to be discussed and others.

The planning carried out by the VA Class teacher in the Implementation of the Jarimatika Method on Multiplication and Division Material in ClassV MIN 6 Jember is Modeling. The step that must be taken in planning learning using this jarimatika method is Modeling / giving an initial description to students about what jarimatika is, with this later when the teacher explains about the concepts of jarimatika, students immediately respond and can understand the explanation of the teacher. one of them is by sending an explanation video and a video of jarimatika practice to the class WhatsApp group because of the Covid-19 pandemic.

Planning the implementation of the jarimatika learning method on multiplication and division material is Modeling / Initial description aims to make it easier for students to understand the jarimatika method. The modeling process carried out at MIN 6 Jember is less than optimal due to this pandemic situation, in this Covid-19 pandemic situation, Class VA teachers at MIN 6 Jember carry out Modeling / provide an initial overview by sending videos in the form of explanations and concepts of the jarimatika method via the class WhatsApp group, the lack of optimality can be seen from the lack of understanding of Class VA students when the

teacher provides concept planting, due to students who do not understand, the teacher takes longer to explain each of the concepts in the jarimatika method . However, although there are many students who do not quite understand, there are some students who already understand a little about the concepts of jarimatika, this indicates that modeling does not completely fail.

This is also in accordance with the opinion of Rima Trianingsih who said that modeling in learning is carried out by the teacher by providing a model related to the learning material discussed. The model in this case is to provide a real initial picture for the student so that he can find his own knowledge correctly.

Implementation of the Jarimatika Method on Multiplication and Division Materials for Class VA at MIN 6 Jember 2020/2021 academic year.

Based on the field results at MIN 6 Jember, that the implementation of the jarimatika method on multiplication and division material at MIN 6 Jember has several stages, Here are some activities at the implementation stage of the jarimatika method on multiplication and division material for Class VA at MIN 6 Jember, namely: planting and understanding the concept of jarimatika, and skill building/practice of jarimatika method. These stages are in accordance with Heruman's opinion which suggests that the concept of learning mathematics is the cultivation of basic concepts (concept planting), understanding basic concepts (understanding concepts), and fostering skills/practice.

Concept planting, which is learning a new mathematical concept, when students have never mastered the concept, we provide an introduction to this concept that can connect students' concrete cognitive abilities with new abstract mathematical concepts. Concept understanding, which is a continuation of concept planting, which aims to make students better understand a mathematical concept. Skill development/practice, which is a continuation of concept cultivation and concept understanding. Aims to make students more skillful in using various mathematical concepts.

Concept planting, at this stage of implementation the first step taken is to instill the basic concepts of the jarimatika method, these basic concepts include; number symbols that must be understood by students. such as the symbols of numbers 6-10, these symbols must be memorized by students. In addition to knowing the number symbols in the jarimatika method, students must first understand and memorize the concepts of addition, multiplication and division 1-5 in order to practice the jarimatika method. This is in accordance with the opinion of Septi Peni Wulandari who explains the steps of the jarimatika method, one of which is to introduce the symbols used in the jarimatika method.

Next is the coaching of skills/practice using the jarimatika method in the concept of the multiplication jarimatika method itself there are open and closed

fingers, the open finger is the number tens while for the closed finger is the unit number. The open finger (tens) is added up while the closed finger (units) is multiplied, after which everything is added up. For the concept of the right hand division jarimatika method. used as a symbol of the divider number and the left hand is used as a symbol of the result number. This is in accordance with the opinion of Trivia Astuti who explains how to use the jarimatika method in multiplication and division material.

The way to solve the multiplication of 7×8 using the jarimatika method is as follows: The method of completion is as follows; a) the left hand practices the number 7 symbol by opening the little finger and ring finger, b) while the right hand practices the number 8 by opening the little finger, ring finger, and middle finger, c) for the standing finger to be the number tens, then summed, d) for the folded finger to be the number units, then multiplied, e) after that everything is added up.

$$\begin{aligned} \text{Formula } 7 \times 8 &= (P + P) + (S \times S) \\ &= (20 + 30) + (3 \times 2) \\ &= 50 + 6 \\ &= 56 \end{aligned}$$

The completion of the jarimatika method of division $49: 7$ according to Trivia Astuti is as follows; a) The right hand shows the divider, namely the number 7 (finger formation 7, the number of fingers closed = 3, the closed finger starts from the thumb), b) The number divided is 49, so take the unit, namely the number 9. The unit number is divided by the number closed on the right hand, which is 3. So $9: 3 = 3$, c) The result obtained by closing the finger as much as the division result that has been obtained is 3, d) Closing the finger starts from the thumb, the left hand shows the number symbol 7, then the result of $49: 7 = 7$

Evaluation of the Jarimatika Method on Multiplication and Division Materials for Class VA at MIN 6 Jember for the 2020/2021 academic year.

Based on the results of research in the field, the evaluation of the implementation of the jarimatika method on multiplication and division material for Class VA at MIN 6 Jember, namely by using written tests and non-written tests. For written test assessments, usually in the form of daily tests or homework, while for non-written test assessments using direct practice such as guessing when going home from school.

In the implementation of the evaluation of the jarimatika method on multiplication and division material at MIN 6 Jember, Class VA teachers use written test evaluations and non-written tests. Based on the results of research in the field, the evaluation instrument is in accordance with the opinion of Kadek Ayu Astuti who says that a test is a technique or method used in order to carry out measurement activities, a test is one of the assessment techniques consisting of a number of

questions or items used to obtain data or information through the answers of responders or students. Test assessment techniques are usually used to measure students' cognitive abilities. Based on its form, test assessment is divided into 2, namely written test assessment and non-written / oral test assessment.

CONCLUSION

1. Implementation of the Jarimatika Method on Multiplication and Division Materials for Class VA at MIN 6 Jember in the 2020/2021 academic year there are several stages, namely; planning, implementation, and evaluation. First, the Planning stage is in the form of Modeling. Second, Implementation consists of planting and understanding concepts and also fostering skills/practice of the jarimatika method. Third, the evaluation of the jarimatika method uses assessment and assessment evaluation in the form of written tests and unwritten/oral tests.
2. The advantages of Jarimatika Method on Multiplication and Division Materials of Class VA at MIN 6 Jember are; 1) students are more active during learning activities. 2) can be visualized, 3) more interesting, 4) more efficient, 5) jarimatika method can be taught anywhere 6) train the right and left brain, 7) the tools used do not need to buy.
3. Disadvantages of Jarimatika Method on Multiplication and Division Materials of Class VA at MIN 6 Jember. namely; 1) often the occurrence of student errors in multiplying and summing 2) not all multiplication and division can be solved by this jarimatika method because of the limitations of our fingers, 3) students who lack jarimatika practice will be slow when calculating 4) there are formulas that must be memorized by students.

In learning activities using the jarimatika method that teachers apply is very helpful for students, students can be more active in learning and make students' learning outcomes increase.

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