https://journal.ypidathu.or.id/index.php/abdimas
P - ISSN: 2987-8470
E - ISSN: 2987-7105

The Use of Jarimatics as a Media in Learning Calculating at Elementary School

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ABSTRACT

Background. Jarimatics is a way of calculating mathematics for children using the fingers developed due to the difficulty of students counting using all the fingers and toes.
Purpose. The use of these jarimatics aims to facilitate students in learning to count. Using jarimatics can increase students' interest and enthusiasm for learning to count.
Method. This study has several obstacles because some students still need help understanding multiplication. Direct practicum methods and lecture methods carry out this implementation method. The training participants were 18 grade 2 students.
Result. This coaching occurred in a class 2 at SD Negeri 276 Lemo. Based on the coaching carried out, the desired results are well achieved.
Conclusion. Namely, students become more enthusiastic and easy to understand in learning to count. Students become more eager to learn and faster in the calculation process. Therefore, it can be concluded that this training positively impacts students' mathematics learning.

KEYWORDS

Calculating, Jarimatics, Media

INTRODUCTION

For every child, education is crucial, as in elementary schools, where children receive education (Megawati et al., 2022). To create students with noble character, character, and intellectual competitiveness, and also have good personality and character as a provision for a higher level and to develop the quality of education in the future. This requires effort, passion, and hard work (Myori et al., 2019). One of the efforts needed is to provide learning to count in the form of a learning set. One of the learnings in question is learning mathematics (Kaswar et al., 2023).

Mathematics is one of the lessons in elementary schools related to multiplication, addition, subtraction, and division (Nurjannah, 2020). The aim is as a tool to measure students' ability to apply mathematics in everyday life (Unaenah et al., 2020). This mathematical concept can be used as a provision for children to prepare for the future so they can think more concretely (Fadiyah & Fuadi, 2023).

Citation: Mawaddah, A, U., Nurjannah, Nurjannah., & Karwar, A, B. (2024). The Use of Jarimatics as a Media in Learning Calculating at Elementary School (a case study in Lateri Village, Baguala District, Ambon City). *Pengabdian: Jurnal Abdimas*, *2*(1), 31–36. https://doi.org/10.55849/abdimas.v2i1.329

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Received: January 12, 2024
Accepted: January 15, 2024
Published: January 31, 2024

To prepare them for life in the future and now, one of the children's most essential abilities is to equip them with numeracy (Astuti & Handayani, 2019). The ability to count is an attempt to get to know mathematics related to the properties and relationships of real numbers and their calculations, especially mathematics related to addition, subtraction, multiplication, and division (Romlah, 2016). Numeracy ability is the ability to perform calculations with numbers (Ekowati et al., 2019). Students make a lot of arithmetic mistakes when working on math problems. This affects students' ability to solve math problems (Himmah et al., 2021). According to Nurmasari, many factors affect children's numeracy skills, namely factors from within and outside the child. Factors from outside the child, such as those from the teaching and learning process, can affect children's low numeracy skills, such as learning that is less fun, the learning process is monotonous, learning media is less attractive, and children are bored and less enthusiastic (Dewi et al., 2020).

According to observations made at SD Negeri 276 Lemo, some students had difficulty learning, especially arithmetic. It can be seen that in grade 2, there are still students who are constrained in counting. In addition, students' interest in learning still needs to be improved. And looks bored in learning due to the methods and media used in a monotonous manner. From some of the problems above, this is where the teacher's role is in building an effective, conducive, and exciting class. So that the learning objectives can be adequately achieved, students can also understand learning quickly and enthusiastically participate in learning. It is necessary to use jarimatics as a medium in learning to count for grade 2 students, especially for students who still have difficulty counting at school.

In conditions like this, it is necessary to use various media. For this reason, as a form of community service, the use of jarimatics as a medium in learning to count is carried out at the elementary school in Lemo Village, namely SD Negeri 276 Lemo, to be precise in Kaboddi Hamlet, Lemo Village, Kajuara District, Bone Regency. The Jarimatics method uses finger calculations such as addition and subtraction, multiplication, and division. Using this method, students can solve problems and exams more quickly (Irmayanti et al., 2022). Encourage students to count instead of scribbling on paper and stationery, which can be time-consuming. The Jarimatics method trains students to hone their brains to be able to count quickly and precisely (Sitio, 2017).

Jarimatics is a method of calculating (multiplication, addition, and subtraction) with the fingers. Jarimatics is an easy and fun way to teach kids basic arithmetic based on rules. The advantages of Jarimatics as a learning medium include: (1) Jarimatics provides a visualization of how to count, (2) Finger movements increase children's interest, (3) Jarimatics relatively does not burden the brain's memory when used, (4) Use of tools No need to buy (Tasliah et al., 2019). By using Jarimatics, students can improve their multiplication counting skills. To overcome the difficulty of multiplication problems, the author uses Jarimatics to help solve the problem; by using this Jarimatics, students can easily find the multiplication result using only their fingers (Prayugo, 2014). Based on this, the authors are interested in further discussing using Jarimatics as a Media in Learning Numeracy at SD Negeri 276 Lemo. To facilitate students in learning to count, make students more enthusiastic and enthusiastic, and minimize difficulties in learning to count.

RESEARCH METHODOLOGY

The method that will be carried out in this activity is the direct practicum method and the lecture method. Where the practicum method is taught how to practice the use of Jarimatics as a

medium. As well as the lecture method explains the introduction and process of using Jarimatics in learning to count. This method is used to help students recognize and understand the use of Jarimatics. This activity took place in class 2, SD Negeri 276 Lemo.

The implementation of this activity was in the form of using Jarimatics as a counting medium at SD Negeri 276 Lemo, Lemo Village. This activity was carried out from Monday, 7 February 2022, to Tuesday, 29 March 2022. The focus of the implementation is as follows.

1. Preparation and Planning Stage. The preparation and planning stages are carried out from the first week to the beginning of the second week, namely by observing the school environment and making coaching agreements with the principal and homeroom teacher outside of school hours.
2. Implementation Stage. The implementation phase is carried out by coaching every two times a week, namely Monday and Tuesday, in class 2 by preparing all the equipment.
3. Evaluation Stage. At the evaluation stage, all grade 2 students are tested so they can understand and practice what has been taught. This is done to determine the extent to which students understand the material that has been taught.

The activity was attended by all grade 2 students in an orderly manner so they could understand and count quickly and correctly. The indicator of the success of this activity was seen from the positive and enthusiastic responses from the evaluation participants. The method will describe in detail the type/design of the community service being carried out, the method, and the implementation steps up to the evaluation and monitoring of the implementation of the community service.

RESULT AND DISCUSSION

Improving the quality of education in Lemo Village in developing and empowering the community, namely by providing assistance to create a better Lemo Village community. The main target of this activity is children in need in Lemo Village. One of the developments carried out is the use of Jarimatics in learning to count quickly through the media of Jarimatics outside of school hours so that class hours are still running and do not interfere with the teaching and learning process in SD Negeri 276 Lemo.

The use of aromatics as a medium in learning to count at SD Negeri 276 Lemo, Kaboddi Hamlet, Lemo Village, Kajuara District, started on Tuesday, 8 February 2022, running smoothly. Coaching begins with the introduction of the student giving the material. The agenda for the activities carried out in this community service is as follows.

Figure 1. Explanation of the use of Jarimatics

The next stage is the implementation of coaching. It is starting with a general explanation related to Jarimatics. Based on the definition, according to Elita, the Jarimatics Method is a method of counting using the fingers and finger joints (Wulandani, 2013). Compared to other methods, the Jarimatics method emphasizes mastery of concepts first, then the quick method so children can capture knowledge (Prayugo, 2014; Tasliah et al., 2019). Also, this method is communicated to children in a fun way that makes them happy and receptive (Himmah et al., 2021). The following are basic formulas that can be used to multiply by Jarimatics (Nasution, 2015).

Table 1. The Basic Formula of the Jarimatics Method

Class	Group	Basic Formula
1	6-10	(Open 1 + Open 2) + (Close 1 x Close 2)
2	11-15	100 + (Open 1 + Open 2) + (Open 1 x Open 2)
3	16-20	200 + (Open 3 + Open 4) + (Close 1 x Close 2)

Information:
Open 1 = Open finger of the right hand (Tens)
Open 2 = Left open finger (Tens)
Open 3 = Opened right hand finger (twenties)
Open 4 = Left open finger (twenties)
Close 1 = Closed right hand finger (T1)
Close 2 = Closed right hand finger (T2)

The interpretation of the formula in Table 1 is, For example, multiplied by 6 x 8. The thumb is the number 6, and the index finger is the number 7, and so on, until the little finger is the number 10. The same thing happens with the left and right hands. To do the 6 x 8 multiplication, the left hand will have the thumb open to represent the number 6, and the fingers of the right hand open will be the thumb, forefinger, and middle finger, as they will represent the numbers 6, 7, and 8. So because there are four open fingers, the number is 40. The closed fingers of the left hand are four, and the right hand has two fingers, so multiplying 4 x 2 gives 8. In the final process, 40 and 8 are added, and the final result is 48 (Salsinha et al., 2019).

After coaching for several weeks, the evaluation activity switches, namely that each student is tested to practice grammar by using the questions given so that they can answer easily and quickly. The enthusiasm and enthusiasm of the students were seen in participating in the evaluation.

Figure 2. Evaluation

After all, students have carried out a series of evaluations; they move on to games with questions related to addition, subtraction, multiplication, and primary division. Students are very enthusiastic because these games are carried out by looking for students who are quick to raise their hands and answer correctly and will be given a present.

After the entire activity agenda is carried out in stages, starting from the introduction, the finger's introduction and the finger's use as a medium in learning to count can be carried out correctly. After this coaching, 85% of students understand the use of Jarimatics as a medium in learning to count.

CONCLUSION

The use of jarimatics as a medium for arithmetic in Lemo village is excellent because the students are enthusiastic about following it. This activity is by its original purpose: to make students understand and be proficient in counting quickly and precisely. The learning experience as a form of community service (especially school work programs) provides value for Community Service participants. The success of the work program implemented by Community Service participants is expected to benefit the object. Tutoring is designed to help students develop themselves and all abilities, skills, and personal characteristics positively. With all the problems they face. The solution to the problem is to provide directions and small prizes for students who are diligent in coaching and dare to appear in front of the class to answer questions given so that students are even more enthusiastic about learning. For the school, carry out and improve student activities that can support students' competitiveness and give more attention to students who do not understand lessons, especially counting well, to improve education for the students themselves so that it will be easier to understand question calculation in the future. Hopefully, students can channel their abilities to students who need help understanding or receiving this training.

AUTHORS' CONTRIBUTION

Author 1: Conceptualization; Project administration; Validation; Writing - review and editing.

Author 2: Data curation; Investigation.

Author 3: Formal analysis; Methodology; Writing - original draft.

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