International Journal of Education, Social Studies, And Management (IJESSM)
e-ISSN : 2775-4154
Volume 5, Issue 3, October 2025
The International Journal of Education, Social Studies, and Management (IJESSM) is published 3 times a year (**February, Juny, October**).
Focus : Education, Social, Economy, Management, and Culture.
LINK : http://lpppipublishing.com/index.php/ijessm

Implementation Minimum Competency Assessment to Improve Literacy Numeracy in Class V Students of Elementary School

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ARTICLE INFO
Article history:
Received
07 August 2025
Revised
25 August 2025
Accepted
25 September 2025

ABSTRACT

This research was motivated by observation data which showed that the numeracy literacy abilities of class V students were quite low. The implementation of this research aims to equip students with better thinking skills regarding various problems that arise in questions through a minimum competency assessment which is carried out in two stages, namely pre-test and post-test. This activity was carried out in class V, which was attended by 15 students. The research method consists of three stages, namely planning, implementation and evaluation. The results of this service show a significant increase in students numeracy literacy skills. The increase in the minimum competency assessment score in class V is supported by the successful implementation of the work program that has been designed. From the pre-test to post-test minimum competency assessment activities, there was a good improvement and a fairly high increase in students numeracy literacy skills.

Keywords *Minimum Competency Assesment, Literacy, Numeracy*

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INTRODUCTION

Learning principles that emphasize broad and deep student insight have begun to be implemented in the twenty first century until now. In the development of the twenty first century until now (Deda et al., 2023), students are not required to memorize material, but must have strong analytical skills. Students must have broad knowledge that is also contextual and relevant to current developments. This is useful as a provision for students to face various challenges in various areas of life (Kettler, 2014).

Besides having strong analytical skills, students must also begin to understand the importance of basic literacy numeracy. Literacy numeracy is defined as a person's ability to use reasoning (Winarno et al., 2024). Reasoning means analyzing and understanding a statement, through activities in manipulating symbols or mathematical language found in everyday life, and expressing the statement through writing or verbally (Novitasari et al., 2022).

Literacy numeracy is part of mathematics. Thus, the components in implementing literacy numeracy cannot be separated from the material covered in mathematics (Sabar Riyanto, dkk., 2024). Mathematics is a science related to exact knowledge that has been systematically organized including rules, ideas, reasoning and logical structures (Ridwan et al., 2023).

Literacy numeracy consists of three aspects, namely counting, numeracy relations, and arithmetic operations. Numeracy is the ability to count objects verbally and the ability to identify the number of objects (Wuyckens et al., 2022). Numeracy relations relate to the ability to differentiate the quantity of an object such as more, less, taller, or shorter (Gede Ratnaya et al., 2024). Meanwhile, arithmetic operations are the ability to carry out basic mathematical operations in the form of addition and subtraction. The three aspects of numeracy literacy that have been explained previously are basic aspects in learning mathematics which are important to introduce from an early age until children enter the lower grades (Pratiwi et al., 2024).

Based on the results of the Program for International Student Assessment (PISA) survey conducted by the Organization for Economic Co-operation and Development (OECD), it is stated that the numeracy literacy capability of students in Indonesia is included in the low category, if the percentage is 70%. According to OECD 2018. The results of the 2018 PISA Survey actually found Indonesia in 74th place, namely the lowest score in reading ability was 371, mathematics ability was ranked 73rd with 379 points, and science ability was ranked 71st with a score of 396 (Rahmah & Putri, 2023).

Therefore, based on the results of PISA 2018, this research aims to increase the literacy numeracy of fifth grade elementary school students using the Minimum Competency Analysis method. In the Minimum Competency Analysis method, students are given pre-test and post-test questions. Pre-test questions are carried out to assess students' understanding before being given material regarding Minimum Competency Analysis questions. Meanwhile, the pre-test questions are used to assess students' understanding after being given the material. The benefit of this research is to provide information to educators regarding the level of numeracy literacy skills.

RESEARCH METHOD

Planning Stages

In the minimum competency assessment research method, there are three stages of the research method. The first stage is the planning stage. At this stage, observations are carried out, namely observing environmental conditions and school needs as well as the participation of school residents in activities

that support numeracy literacy. Next, coordinate with the school regarding the schedule for implementing numeracy literacy and planning work programs, methods that are suitable to be implemented and can be a solution to the problems currently being faced by students. The work program that will be designed will focus more on improving students numeracy literacy skills. So that the program designed can maximize the results of the minimum competency assessment.

Implementation Stage

At this stage, media creation for numeracy literacy activities begins, which aims to attract students' attention to the importance of literacy numeracy. The socialization of the literacy numeracy activity program to students, namely "Thematic Jellyfish Hunting" is a collaborative work program with the class fifth teacher. The program created in this game aims to improve students understanding of numeration in ratio and diagram material. Apart from that, because this game is played in groups, it can train students social skills in working together, respecting friends opinions. The second activity, "Snakes and Ladders Numeration" is an interesting variant of the classic game "Snakes and Ladders", which combines elements of fun playing the game with basic math practice. On each square on the game board, there are basic math problems such as addition, subtraction, multiplication, or division.

Evaluation Stage

At this stage students carry out a minimum competency assessment in the form of a pre-test and post-test. The pre-test is carried out before the activity program is implemented. Meanwhile, the post test is carried out after the activity program is implemented. A total of 15 grade V elementary school students took the minimum competency assessment enthusiastically.

RESULT AND DISCUSSION

The minimum competency assessment assesses the basic competencies needed by all students to develop their skills and participate actively in society. There are two basic abilities measured, namely literacy and numeracy. The ability to read and count must have been possessed since elementary school, so that at the next level students will be able to develop their potential better. Table 1 explains the results of the pretest presentation ability of grade V elementary school students who answered correctly before the work program was implemented.

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Table 1.
Pre-Test Results, Percentage of Students Answered Correctly

Competence	Percentage of students answering correctly
Solve simple equations using multiplication/division operations only (in a child-friendly form).	20%
Solve simple equations using multiplication/division operations only (in a child-friendly form).	20%
Identify the characteristics of blocks, cubes, prisms and cylinders	20%
Calculate the perimeter and area of a rectangle if you know the length and width, and calculate the length or width if you know the area/ and one of the sides.	7%
Solve simple equations using addition or subtraction operations (in simple form).	53%
Solve simple equations using addition or subtraction operations (in simple form).	53%
Solve simple equations using addition or subtraction operations (in simple form).	53%
Using addition/subtraction/multiplication/division of two whole numbers (max. four digits), including calculating the square of a whole number (max. three digits) (including estimating the results of operations)	47%
Using addition/subtraction/multiplication/division of two whole numbers (max. four digits), including calculating the square of a whole number (max. three digits). (including estimating the results of operations).	33%
Using addition/subtraction/multiplication/division of two whole numbers (max. four digits), including calculating the square of a whole number (max. three digits). (including estimating the results of operations).	13%
Determine the factors of a whole number and recognize prime numbers.	0%
Understand whole numbers (up to four digits, includes number symbols, place value concepts	73%

– thousands, hundreds, tens, ones).	
Presenting, analyzing and interpreting data in the form of charts, pictograms and bar charts (one unit scale).	13%
Presenting, analyzing and interpreting data in the form of charts, pictograms and bar charts (one unit scale).	53%
Presenting, analyzing and interpreting data in the form of charts, pictograms and bar charts (one unit scale).	13%
Presenting, analyzing and interpreting data in the form of charts, pictograms and bar charts (one unit scale).	53%
Presenting, analyzing and interpreting data in the form of charts, pictograms and bar charts (one unit scale).	0%
Identify the characteristics of quadrilaterals, triangles, polygons and circles.	7%
Determine the length and weight of objects using standard units (including determining the correct units).	27%
Determine the length and weight of objects using standard units (including determining the correct units).	40%

In Table 1, the pretest results of students answering questions with the highest percentage lie in the competency to solve simple equations using addition or subtraction operations, namely 53%. For the pretest, students answering questions with the lowest percentage were in competency to determine the factors of a whole number, recognizing prime numbers and presenting, analyzing or interpreting data in the form of a graph, pictograms and bar charts (one unit scale) which was 0%. It could be said that students do not understand this question. Thus, work programs to improve the minimum competency assessment in these two competencies must be emphasized so that students gain an understanding of the material.

Table 2.
Post-Test Results, Percentage of Students Answered Correctly

Competence	**Percentage of students answering correctly**
Solve simple equations using multiplication/ division operations only (in a child-friendly form).	87%
Solve simple equations using multiplication/ division	93%

operations only (in a child-friendly form).	
Identify the characteristics of blocks, cubes, prisms and cylinders	47%
Calculate the perimeter and area of a rectangle if you know the length and width, and calculate the length or width if you know the area/ and one of the sides.	80%
Solve simple equations using addition or subtraction operations (in simple form).	73%
Solve simple equations using addition or subtraction operations (in simple form).	73%
Solve simple equations using addition or subtraction operations (in simple form).	80%
Using addition/subtraction/multiplication/division of two whole numbers (max. four digits), including calculating the square of a whole number (max. three digits) (including estimating the results of operations)	60%
Using addition/subtraction/multiplication/division of two whole numbers (max. four digits), including calculating the square of a whole number (max. three digits). (including estimating the results of operations).	20%
Using addition/subtraction/multiplication/division of two whole numbers (max. four digits), including calculating the square of a whole number (max. three digits). (including estimating the results of operations).	73%
Determine the factors of a whole number and recognize prime numbers.	73%
Understand whole numbers (up to four digits, includes number symbols, place value concepts – thousands, hundreds, tens, ones).	87%
Presenting, analyzing and interpreting data in the form of charts, pictograms and bar charts (one unit scale).	80%
Presenting, analyzing and interpreting data in the form of charts, pictograms and bar charts (one unit scale).	67%
Presenting, analyzing and interpreting data in the form of charts, pictograms and bar charts (one unit scale).	67%
Presenting, analyzing and interpreting data in the form of charts, pictograms and bar charts (one unit scale).	60%
Presenting, analyzing and interpreting data in the form	87%

of charts, pictograms and bar charts (one unit scale).	
Identify the characteristics of quadrilaterals, triangles, polygons and circles.	60%
Determine the length and weight of objects using standard units (including determining the correct units).	80%
Determine the length and weight of objects using standard units (including determining the correct units).	13%

In Table 2, the posttest results of students answering questions with the highest percentage lie in the competency to solve simple equations using only multiplication/division operations (in a child-friendly form) at 53%. This proves that fifth grade elementary school students really understand the operations of addition, subtraction, division and multiplication. For students posttest results on competence in determining the factors of a whole number, recognizing prime numbers had an increase of 73%. This proves that work programs that have been designed to increase competency have a positive impact on students.

The Minimum Competency Assessment prioritizes students computing skills in the areas of content, cognitive processes, and context. The goal of these three components is to give students better thinking skills for the various problems that arise in questions. The aim of the Minimum Competency Assessment is to measure student abilities at an individual level and it is hoped that all students can achieve this. The Minimum Competency Assessment at the Belumbang Cilegon State Elementary School was attended by 15 class V students.

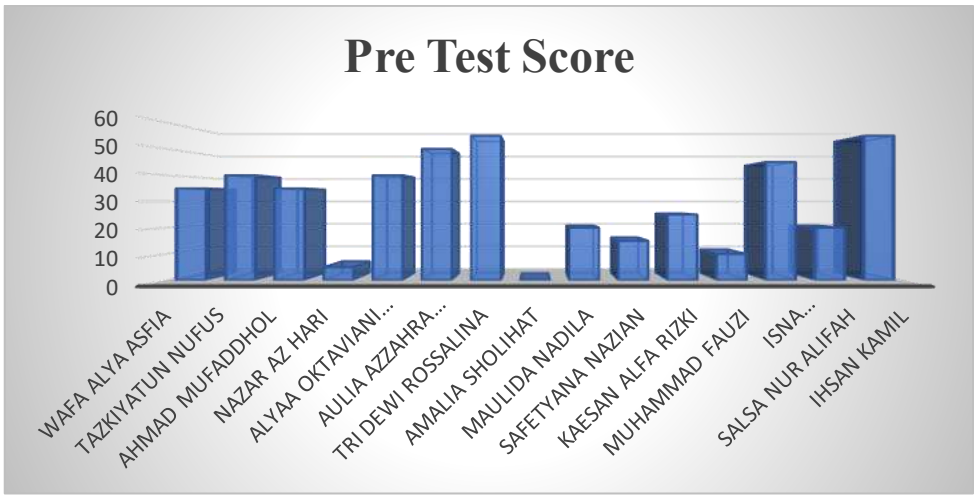

Figure 1.
Minimum Competency Assessment Pre-Test Score Results

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Based on data from the pretest results of the minimum competency assessment of 15 students at the Belumbang State Elementary School, Cilegon City. It can be seen that the lowest score is 0 while the highest score is 55. To find out more details regarding the pretest results, see Figure 1. From the results of the pretest scores for the minimum competency assessment that has been carried out, it can be concluded that the level of students numeracy abilities is still lacking, so There is a need to improve understanding in fifth grade elementary school students.

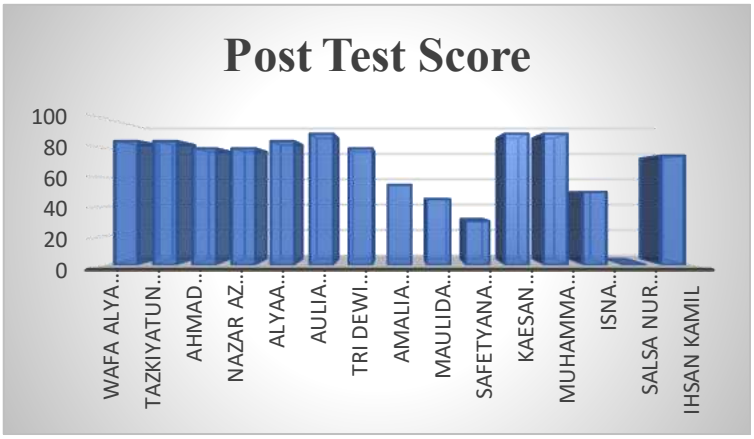

Figure 2.
Minimum Competency Assessment Post-Test Score Results

Based on data from post test results from 15 students at the Belumbang State Elementary School, Cilegon City. It can be seen that the lowest score is 0 while the highest score is 90. To find out more details regarding the pretest results, see Figure 2. From the results of the post-test scores for the minimum competency assessment that has been carried out, it can be concluded that the level of students numeracy abilities has increased significantly is good.

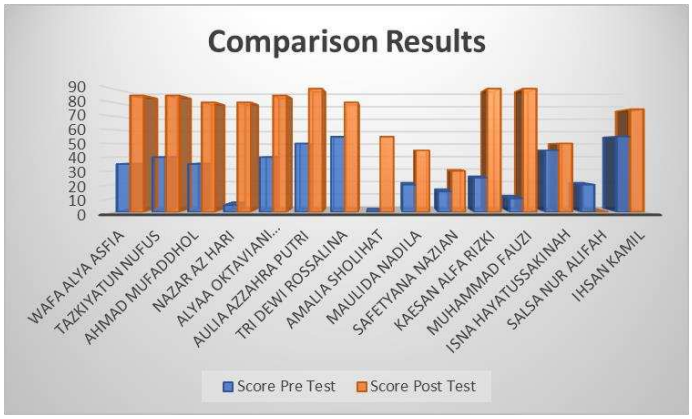

Figure 3.
Comparison Score Pre-Test and Post-Test

In Figure 3 you can see a comparison of the results between the Pre-test and Post-test. This comparison proves that there has been a good improvement

in the implementation of the minimum competency assessment. The increase in the minimum competency assessment score is supported by the successful implementation of the work program that has been implemented, namely thematic jellyfish and numeracy snakes and ladders. This thematic jellyfish is a work program to improve numeracy literacy. The way to play this game, as the name suggests, is hunting. Students are asked to work in groups to hunt jellyfish. Each jellyfish has points adjusted to the difficulty level of the questions. Each group is asked to collect as many points as possible. In this way, each group member will play an active role and compete so that their group becomes the winner. And also there are snakes and ladders numeration is an interesting variant of the classic game snakes and ladders, which combines elements of fun game play with basic math practice. On each square on the game board, there are basic math problems such as addition, subtraction, multiplication, or division.

CONCLUSION

The conclusion from this research is that the results of the minimum competency assessment test from pre-test to post-test have increased well. The minimum competency assessment questions given are 20 items. Based on data from pretest results from 15 students at the Belumbang State Elementary School, Cilegon City, the lowest score was 0 and the highest score was 55. Based on this problem, researchers designed work programs that could support increasing numeracy literacy among students, some of these programs are as follows: Jellyfish hunting thematic jellyfish and numeracy snakes and ladders. The implementation of the work program went well and was in line with the researchers' expectations. This was proven by an increase in scores when the posttest was carried out, the lowest score was 0 and the highest score was 90. From the information above, it has been shown that the researchers applied the right method and implemented the program. work optimally so that the student's posttest results have improved from the previous test. It is hoped that the work program that has been implemented in schools can last in the long term so that it can support increasing student numeracy literacy.

ACKNOWLEDGEMENT

I would like to express my deepest thanks to all parties who have contributed and supported me in writing this article. Not to forget, I would like to thank all sources of information and references that have helped enrich the content of this article.

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