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Strengthening the skills of fifth-grade elementary school students in mastering fractional numbers through a realistic mathematics approach

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Abstract: *Elementary school students' skills in mastering mathematics (numeracy literacy) still need to be higher; most are below the minimum ability standard. This research aims to determine the ability of fifth-grade elementary school students to understand fractions completely through a realistic mathematics learning approach. The research method used utilizes Kurt Lewin's classroom action research. The research results illustrate that a realistic mathematics learning approach can increase the strengthening of mathematical skills simultaneously, especially in mastering the skills of understanding fractions. Thus, realistic mathematics learning is an innovative and effective way to strengthen students' abilities in mathematics subjects. Teachers are asked to systematically and massively utilize this approach in their learning practices for the following purposes.*

Keywords*: Strengthening the skills; elementary school student; a realistic mathematics approach*

Introduction

So far, elementary school students' achievement in mastering mathematics skills is still relatively low, and they have yet to experience significant improvement. Indonesian Education Report Card data shows that mathematics ability (numeracy ability) is in a condition that needs to be more encouraging, as only 46.67% of elementary school students have minimum competence in mathematics (numeracy). This means that only a portion of the total number of elementary school students can think using concepts, procedures, facts and mathematical tools in the context of numbers, algebra, and geometry, as well as data and uncertainty, to solve problems they face. Furthermore, the data above also illustrates that some students still have limitations in some aspects, including (a) the ability to understand facts, processes, concepts and procedures in mathematical skills, (b) applying knowledge and understanding of facts, relationships, processes, concepts, procedures, and methods to number content in a real situational context to solve problems or answer questions, and the ability to analyse data and information, make conclusions and expand understanding in new situations, including previously unknown situations or broader contexts (reasoning ability) (Kemdikbudristek Republik Indonesia, 2023).

Other research shows that approximately 40 per cent of children aged 15 years and under still do not have key abilities in mathematics, including (a) awareness of the relationship between numbers and quantities, (b) understanding number symbols, (c) vocabulary words and their meanings; (d) the ability to carry out calculations systematically; (e) awareness of comparisons between various numerical quantities; (f) better understanding of number representation and number patterns; and (g) competence in carrying out simple

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mathematical operations (Inovasi, 2019). It was further illustrated that two students had yet to reach the minimum numeracy competency (CNN Indonesia, 2022). Apart from that, from international comparisons, student achievement in numeracy skills has yet to increase significantly. The results of the Program for International Student Assessment (PISA) show that Indonesian students got a score of 379, which is classified as low ranking, and only 18 per cent of Indonesian students were able to obtain mathematics proficiency at level 2 (students can interpret and recognise without direct instruction how simple situations can be represented mathematically) and not a single Indonesian student is at level 3 or above/has high achievement (Alam, 2023; Napitupulu, 2023; OECD, 2023; Schleicher, 2023).

Apart from being caused by students' relatively low interest and motivation in learning mathematics (Baringbing et al., 2022; Buyung et al., 2022; Junita et al., 2023; Oktafindari, 2023; T. M. Putra et al., 2022), these students also have limited abilities in mathematics (Yarrow et al., 2020), which is another cause of elementary school students' low numeracy skills (mastery of mathematical material). Apart from that, another cause is the teacher's inability to carry out the mathematics learning process. The manifestation of this lack of ability is in the form of a learning process that is carried out only by doing mathematical calculations without building an understanding of how this applies in the real world, without adequate basic numeracy concepts, and not providing opportunities and chances for students to gain a strong understanding of numbers (the ability to think logically). Mathematical). And teachers need more confidence to teach mathematics fully (Inovasi, 2019) . In this context, teachers place more emphasis on mastering formulas, mathematical formulas and theories rather than implementing the use of numeracy in everyday life (Menteri Pendidikan dan Kebudayaan Republik Indonesia, 2020). In the learning process, teachers only deliver material without variation; it is monotonous and boring. On the other hand, another urgent problem is that the existing curriculum often needs to focus more on calculations and understanding mathematical concepts (Inovasi, 2019; Yarrow et al., 2020), and the thematic approach used needs to provide adequate space for teachers to implement innovations in developing numeracy competencies (Menteri Pendidikan dan Kebudayaan Republik Indonesia, 2020). In this connection, mathematics learning methods are less interesting, and the material presented must fully contextualise the students' capabilities.

Mathematics is numeracy literacy related to knowledge and skills regarding understanding numbers and symbols and analysing quantitative information. In this context, mathematics can be assumed to be knowledge and skills to utilise various numbers and symbols to solve practical problems in various life contexts. It can also be used to analyse information in graphs, tables, charts, etc. It can be interpreted as applying number concepts and calculation skills and interpreting quantitative information around us (Direktorat Sekolah Dasar Ditjen PAUDDIKDASMEN Kemdikbudristek, 2021). Several components within the scope of mathematics include estimation, calculation, and use of numbers related to solving and modelling everyday problems in various authentic contexts using mental arithmetic or efficient calculating tools. Furthermore, you can visualise, order and describe shapes and objects using proportions and percentage and ratio relationships to solve problems in a real context. Second, patterns and relationships are used to identify trends and clarity, and

various rules and relationships are used to predict patterns to solve contextual problems. Third, the use of spatial reasoning is related to the ability to visualise, identify and order shapes and objects and describe the main characteristics of objects in the surrounding environment. In this connection, symmetry, shapes and angles are used to solve contextual problems and interpret maps or diagrams, as well as scales, legends and directions to identify and describe routes and locations. Fourth, using measurements relates to measuring, comparing and calculating standard units when solving contextual problems such as length, area, volume, capacity, time, temperature, mass and angles. Fifth, interpreting statistical information related to reading, collecting, recording, presenting, comparing and evaluating the accuracy of various types of presentation of statistical data from contextual problems to explain the probability of events (Pusat Kurikulum dan Perbukuan Balitbang Kemdikbud, 2018).

Because learning mathematics is difficult for some elementary school students to know, understand, and interpret, it is necessary to utilise a realistic mathematical approach in the learning process. This approach is defined as an approach to mathematics learning focusing more on the connection between mathematical concepts and everyday experiences. In this context, the real world is the main source for the emergence of mathematical concepts and interpretive applications of mathematical conceptions. Through this approach, students are expected to have a set of alternative concepts about mathematical ideas that can influence subsequent processes, gain new knowledge by reconstructing mathematical knowledge for their benefit, and have the ability to understand and do mathematics. The characteristics of this approach include (a) realistic contextual problems used to introduce mathematical ideas and concepts, (b) being able to identify mathematical ideas, concepts, principles and models through contextual problem-solving, (c) directing students to discuss problem-solving found, (d) reflect on what has been done and what has been produced, (e) develop the relevance of mathematics learning content in a correlational relationship and (f) develop, expand or improve the results of the work to discover mathematical concepts or principles (Khotimah & As'ad, 2020; Ma'arif & Sutarni, 2023; Natarina, 2020; Suryati & Krisna, 2021; Widana, 2021). This approach is expected to increase knowledge, understanding and meaning of mathematical material figurally, symbolically, arithmetic and cognitively (Pusat Kurikulum dan Perbukuan Balitbang Kemdikbud, 2018). Seeing the urgency of this approach, it is hoped that it will become a new choice for learning about fractions so that students can understand the meaning of fractions, their representation as percentages and ratios and how they are applied in everyday life situations.

This study implements the Realistic Mathematics Education (RME) approach, which connects mathematical concepts with real-life situations, particularly in the mastery of fractions by fifth-grade students, a focus that is rarely addressed in previous research. The methodology used is classroom action research with Kurt Lewin's cycle model, allowing for continuous reflection and dynamic improvement compared to conventional methods. Additionally, this study shows a significant increase in students' numeracy skills, differing from previous research results that often do not show significant improvement. Conducted in the local context of Yogyakarta, this study provides a concrete example of RME implementation

in Indonesia. The in-depth data analysis and integration with Piaget's cognitive development theory and Skinner's reinforcement theory provide a strong theoretical foundation, enhancing the uniqueness and contribution of this research compared to previous studies.

Method

This study employs the Classroom Action Research (CAR) method, which is reflective and conducted in cycles by the teacher with the aim of improving systems, work methods, processes, content, and learning situations. The CAR model used is Kurt Lewin's cycle model, which consists of four stages: planning, action, observation, and reflection (Arikunto et al., 2021; Perdana et al., 2021).

In the planning stage, the first step is to analyze the curriculum for the mathematics subject, focusing on the addition and subtraction of fractions. This analysis aims to identify the areas where students struggle and to tailor the learning activities to address these challenges. Following this, the Learning Program Plan (RPP) is prepared based on the realistic mathematics education approach. The RPP includes all aspects to be taught, such as learning objectives, instructional materials, teaching methods, and assessment tools. Additionally, observation sheets are prepared to record student activities and engagement during the learning process. These sheets help in systematically collecting data on student behavior, participation, and understanding. Furthermore, resources and facilities required for the learning activities, such as teaching aids, media, and other materials, are organized to ensure a smooth learning process. Lastly, evaluation sheets in the form of multiple-choice questions are developed to assess student learning outcomes post-intervention. These evaluations are designed to measure not only factual knowledge but also conceptual understanding and problem-solving skills.

The action stage involves implementing the activities formulated in the Learning Program Plan. The process begins with apperception, where the teacher links previously learned material with the new content. This step is crucial for activating prior knowledge and making connections between old and new information. The teacher then provides a detailed explanation of the concepts of fractions, addition, and subtraction of fractions. This is followed by group discussions where students are divided into small groups and given Student Discussion Sheets along with relevant teaching aids. The use of group work encourages peer learning and collaborative problem-solving. During the main activities, the teacher facilitates and guides the students, providing necessary stimuli to help them overcome challenges. The teacher also monitors group interactions to ensure productive discussions and addresses any misconceptions. At the end of the session, the teacher conducts a closing activity by guiding students to summarize the discussion outcomes, evaluate the material covered, and reflect on the learning process. This reflection helps students internalize what they have learned and understand how to apply it. The teacher also provides motivation and previews the next lesson to maintain student interest and anticipation.

The observation stage is carried out simultaneously with the action stage. The teacher observes student behaviors, patterns, and actions as they engage with the learning material.

This stage aims to assess the extent to which students have mastered the learning objectives. The teacher records detailed observations on student engagement, participation, and understanding. These observations are crucial for identifying areas where students excel and where they need additional support. The data collected during this stage provide valuable insights into the effectiveness of the teaching strategies and materials used.

The reflection stage involves recording and evaluating the observations, analyzing learning outcomes, and noting any weaknesses or challenges encountered during the learning process. The teacher reviews the data to identify trends and patterns in student performance. The findings from this reflection are used to plan the next cycle, focusing on areas that need improvement. The teacher provides feedback and guidance to students, helping them understand their strengths and areas for growth. This stage also involves setting goals for the next cycle and developing strategies to address the identified challenges. The teacher encourages students to take an active role in their learning by reflecting on their experiences and setting personal learning goals.

This research was conducted at SD Ma'arif Nurul Jannah Temon, Kulonprogo Regency, Yogyakarta, in November 2023 over 20 working days, involving 25 fifth-grade students as research subjects. The data collection techniques used include observation, tests, and documentation. Observation is employed to assess the classroom learning environment and student engagement. Tests are administered to measure student learning outcomes after the intervention, using objective multiple-choice questions designed to evaluate both knowledge and understanding. Documentation involves collecting photographs of student activities during the learning process, providing concrete evidence of engagement and participation, and collecting other relevant documents such as syllabi, Learning Program Plans, and student test results.

The data analysis techniques used in this study include data reduction, data presentation, and conclusion drawing. Data collected from observations, tests, and documentation are analyzed descriptively to provide a clear and detailed account of each cycle. Data reduction involves filtering and organizing the data to focus on the most relevant information. Data presentation includes creating visual representations, such as charts and graphs, to summarize the findings. Conclusion drawing involves interpreting the data to make informed judgments about the effectiveness of the intervention. The success indicators of this study are the improvement of fifth-grade students' skills and abilities in estimating, calculating, and using fractions. Student competencies are developed through the ability to think using mathematical concepts, procedures, facts, and tools to solve everyday problems. The competencies assessed include knowing (understanding facts, processes, concepts, and procedures), applying (using knowledge and understanding to solve problems), and reasoning (analyzing data and information, drawing conclusions, and extending understanding to new situations). To measure the achievement of these success indicators, the Minimum Mastery Criteria (KKM) is used, with students scoring ≥ 75 considered to have achieved individual mastery. Class mastery is declared if ≥ 85% of the total students have achieved individual mastery in the class.

To support interpretation, data and information are processed using the Percentage Score Formula. This formula helps convert the raw scores obtained by students into percentage values that are easier to interpret. By dividing the raw score by the ideal maximum score and multiplying it by 100, we obtain a percentage value that reflects how much of the maximum score the student achieved. These calculations are then used to determine the success of the interventions conducted in each cycle of classroom action research. Thus, this formula provides a strong basis for measuring and comparing student learning outcomes before and after the intervention, offering a clear picture of the effectiveness of the learning approach used.

Results and Discussion

Classroom Action Research on Strengthening the Skills of Fifth Grade Elementary School Students in Mastering Fractional Numbers Through a Realistic Mathematics Approach was carried out in two cycles. The various activities carried out in each cycle consist of planning, action, observation and reflection. Activities carried out at the planning stage include (a) carrying out curriculum analysis for mathematics subjects, which focuses on adding and subtracting fractions; (b) making a Learning Program Plan Based on Realistic Mathematics Learning; (c) making Student Activity Observation Sheets; (d) providing facilities and learning support resources (equipment, media and supplies); and (e) making learning evaluation sheets in the form of multiple-choice questions.

Activities at the action stage are carrying out activities that have been formulated in the Learning Program Plan, namely carrying out apperception activities in the form of reflection on the learning material that has been presented previously, explanation of the learning material that will be implemented and activities for managing students to take part in the learning process (dividing into discussion groups, distribution Student Discussion Sheet, and arrangement of props). After that, carry out the core activities, namely providing an explanation of the concept of fractions, adding fractions and subtracting fractions, and carrying out facilitation and assistance for discussion activities by students, including providing stimulus to solve the problems they face. In the closing activity, guidance is carried out for the students to be able to conclude the problem-solving that has been carried out, carry out evaluations on the learning material that has been delivered and carry out reflections together with the students on the learning material that has been delivered then provide motivation/encouragement and explanations for the students next learning process activities.

Next are observation and reflection activities, carried out simultaneously in action management activities. At the observation activity stage, apart from observing student attitudes, behaviour patterns and actions regarding perceptions and interpretations of the learning material presented, they also carry out activities to assess skill mastery of the learning material that has been delivered. After the observation activities are completed, reflection activities are carried out, which are focused on providing direction and guidance to

students to take corrective action and provide motivation so that they always have interest and enthusiasm in the learning process.

In the first cycle, activities involved analyzing the mathematics learning outcomes before the implementation of the Realistic Mathematics Education (RME) approach. This analysis was conducted on the students' daily test results to understand the extent to which conventional teaching methods had met the mastery criteria. Based on the obtained data, it was evident that the mathematics teaching process before the application of the RME approach had not achieved the mastery criteria. Out of 25 students who took the daily test, only 10 students, or 40%, met the mastery criteria, while 15 students, or 60%, did not. The class average score was only 64.28, which was still lower than the expected mastery standard score of around 75. This indicates that the students' learning outcomes in the daily tests were still at a low level.

After analyzing the results of conventional teaching, the Realistic Mathematics Education approach began to be implemented in the first cycle to see how well this approach could improve students' understanding and mastery of fractions. The learning activities in this cycle included the use of contextual problems relevant to the students' daily lives, group discussions, and the use of teaching aids that help visualize abstract mathematical concepts. All these activities were designed to make mathematics learning more meaningful and relevant for students.

The evaluation results in the first cycle showed a significant improvement compared to the previous daily test results. The class mastery level increased to 68%, with 17 students meeting the mastery criteria and the class average score rising to 81.32. The highest score achieved was 100, while the lowest was 66. Although the overall class mastery level (68%) was still below the expected class mastery target (>85%), the majority of students showed a significant improvement in their learning outcomes. This indicates that the RME approach is effective in helping students connect mathematical concepts with real-life situations, enabling them to better understand and apply these concepts.

The increase in the class average score from 64.28 to 81.32 demonstrates a significant improvement in students' understanding of fraction concepts. Most students were able to achieve scores above the minimum mastery criteria, although there were still a few students who had not yet met the criteria. In this connection, in the first cycle, there has been a significant increase in learning outcomes in the mastery of mathematics in an individual context, even though the aspect of class completion has yet to be fully maximised. This data shows that there has been an increase of 70 per cent in class completeness and 26.50 per cent in minimum completeness by using a realistic mathematical approach, as seen in Figure 1.

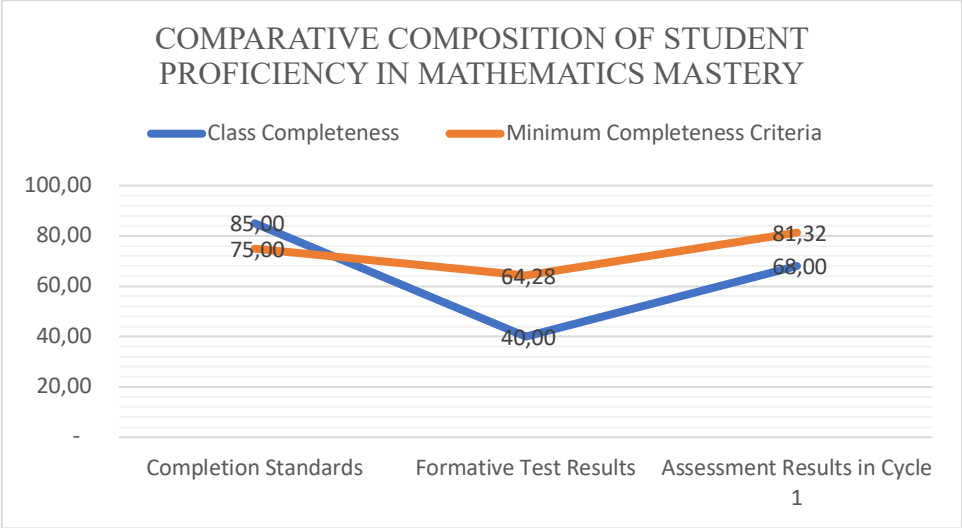

Figure 1 Level of Mathematical Mastery of Fractional Numbers Through a Realistic Mathematical Approach in Cycle 1.

In the second cycle, there was a significant improvement in the proficiency of fifth-grade elementary school students in mastering fractions through the Realistic Mathematics Education (RME) approach. Evaluations and assessments of the learning process showed very positive results. From the evaluation results, it was observed that out of 25 students who participated in the learning process, 24 students successfully met the mastery criteria, while only 1 student did not. The class average score reached 89.96, with the highest score being 100 and the lowest score being 66.

These results indicate that most students were able to master the material on fractions well. The class mastery level of 96% far exceeded the expected mastery criteria of 85%. Additionally, the average individual student score was also above the minimum mastery criteria of 75. Thus, the overall student learning outcomes showed a significant improvement and were at a high level. In this connection, students have the skills and abilities to master mathematics with achievement and optimal learning outcomes. Fifth-grade elementary school students are competent at estimating, calculating and using fractions. In this context, students can develop an understanding of the meaning of fractions, their representation as percentages and ratios, and how they apply them in real-life situations. It is not an exaggeration to assume that students can think using concepts, procedures, facts and mathematical tools to solve everyday problems. In summary, these students have knowing competence (the ability to understand facts, processes, concepts and procedures), applying competence (the ability to apply knowledge and understanding of facts, processes, concepts and procedures) and reasoning ability (the ability to analyse data and information, make conclusions and expand understanding in new situations that include previously unknown situations or more complex contexts).

Using a realistic mathematical approach, mastery of mathematics can be increased optimally both in class completion and in the minimum completion criteria for fifth-grade students, as in Figure 2. The qualitative level of change has almost reached 100 per cent for class completion and 40 per cent for student minimum completion. Individually compared

with the results of daily tests before using the realistic mathematics learning approach. Thus, using a realistic mathematics learning approach can strengthen fifth-grade students' skills in learning mathematics, especially in fractional number material.

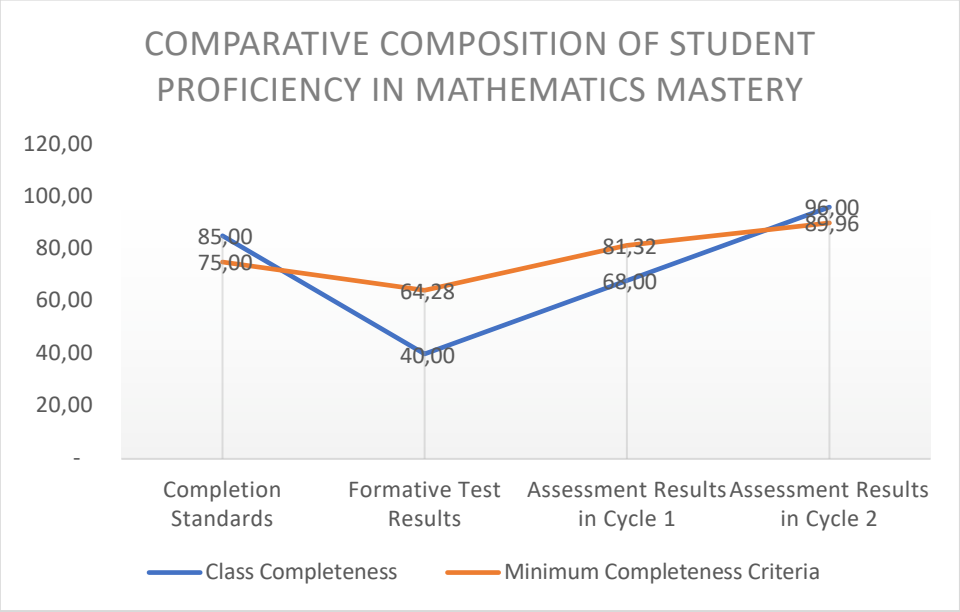

Figure 2 Level of Mathematical Mastery of Fractional Numbers Through a Realistic Mathematical Approach in Cycle 2.

Figure 2 also explains that there has been a simultaneous strengthening of mathematical mastery skills in the concept of fractions by utilising a realistic mathematics learning approach. The strengthening that occurs is built on three aspects, namely, the aspects of knowing, understanding, and interpreting. In this connection, students can remember and identify facts and concepts about fractions and solve problems by applying the formulas they have learned. Then, students can relate facts and concepts to fractional numbers with formulas that can be proven. On the other hand, students can interpret and build concepts on fractional numbers using real-life concepts. Unexpectedly, there was a very significant increase in class completion; initially, in daily tests, it was only 40, then it increased in cycles 1 to 68 and 2 to 96, with an average increase in each cycle of 85 per cent. Meanwhile, there was quite a significant increase in the minimum completeness criteria, from 64.28 to 81.32 in cycle 1 and 89.96 in cycle 2. Although it has not yet reached the extreme level, it is known that the increase in the first cycle was 21 per cent, while in cycle 2, it reached 9 per cent.

From the description above, there is a strong belief that a realistic mathematics learning approach can change and strengthen student achievement in mathematics learning. This aligns with previous research showing that the realistic mathematics approach strongly contributes to and significantly influences student skills in elementary school (Fajriati et al., 2023; Ihsan & Ahmad, 2021; Ilham S et al., 2022; Kurniyanthi et al., 2019; Rustam et al., 2023; Wulandari & Sulasmono, 2020).

This approach ensures that students gain meaning from what they learn, both in the aspects of knowing, understanding and interpreting mathematical facts and concepts and being able to solve mathematical problems by applying formulas or concepts that have been studied. Know, understand and interpret to estimate, calculate and use numbers; recognise and use patterns and relationships; use spatial reasoning; use measurements; and interpret data and facts. Specifically, in this topic, students have been able to estimate and check the solution to a problem by remembering addition and subtraction facts, solving problems, and checking calculations using strategies efficiently. In this context, students can interpret proportional reasoning by visualising, explaining and ordering fractions and solving problems using equivalent fractions (Afsari et al., 2021; D. O. P. Putra & Purnomo, 2023).

The realistic mathematics learning approach rationalises learning concepts to help teachers bridge mathematics subjects with real-world situations. It includes learning formulations that motivate students to connect their knowledge and applications with daily life as family and community members. The realistic mathematics learning approach is a learning concept that helps teachers relate the material taught to students' real-world situations and encourages students to make connections between the knowledge they have and its application in everyday life. It involves seven components of affective learning (constructivism, asking, discovering, learning community, modelling, reflection and actual assessment (Mbagho & Tupen, 2020; Rustam et al., 2023). In this case, it is an effort to connect the relationship between students' real life and environment with students' experiences in realising the ability to know, understand and the ability to interpret/appreciate, as seen in Figure 3.

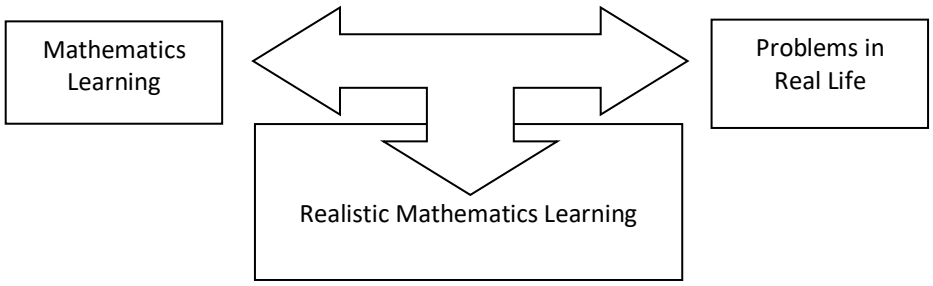

Figure 3. Interaction Pattern of Realistic Mathematics Learning Approach (Adopted from various sources).

In short, this approach is a learning process embedded in the real context of students' lives so that in learning activities, they can apply the content of learning material to solve problems faced in everyday life. At the conceptual level, the realistic mathematics learning approach has four principles, namely: (a) the interaction process, namely the realisation of an interaction relationship between students, educators, media and the learning environment; (b) the existence of a communication process, namely the establishment of communication between students and educators through discussion; and (c) reflection process, namely students' activities to remember what they have done and learned (developing good

practices), and (4) exploration activities, namely students' activities to explore understanding by carrying out the training tasks given (Afsari et al., 2021; Wulandari & Sulasmono, 2020).

The realistic mathematics learning approach aligns with reinforcement theory (Skinner, 1953), which views things the environment provides as influencing human behaviour (Alsheeb et al., 2022). In this connection, utilising behaviour modification looks at the relationship between a person's behaviour and the consequences that will arise in the future. For this purpose, we must create an engineering platform so students can effectively develop attitudes, behaviour, and action patterns. The construction developed in this approach is intertwined with Jean Piaget's Theory of Cognitive Development (1936), in which development aged 7-12 years has achieved logical proficiency and skills from various abstract ideas (Fahma & Purwaningrum, 2021; Juwantara, 2019). In this context, the responses can reconstruct skills and abilities to adapt to the available environment. In turn, there will be growth and improvement in perceptions, thought patterns, and action patterns regarding the content and context, contributing to the learning process. The stages of action implemented start from growing interest and motivation, increasing personal abilities and skills, to the student's responsiveness process. Apart from that, in strengthening students' skills, they also utilise the Adversity Quotient theory (Stoltz, 1997), which contains self-ability when facing various problems that arise, the ability to understand the source of problems and the ability to overcome problems, the ability to limit problems and have a sense of optimism and empowerment. Hold within the available space and time. This theory focuses on efforts to acculturate, empower and form patterns of attitudes and actions to adapt to the available environment (Nelson & Edi, 2020).

The realistic mathematics learning approach fragments life skills education. Its main essence is to develop personal skills, rational thinking skills, and pre-academic skills to support efforts to strengthen communication skills, collaborate, develop creativity, and think critically.The results and discussion section contains research findings obtained from the research data and hypotheses, a discussion of the research results, and a comparison with similar theories and/or similar research. The results and discussion section can be divided into several sub-sections.

Conclusion

The results of this classroom action research illustrate that the skills of fifth-grade elementary school students in mastering fractions can be significantly improved through a realistic mathematics learning approach. This approach has a substantial impact on students' numeracy literacy skills, which can be observed in their ability to know, understand, and interpret mathematical concepts related to fractions. Students demonstrated enhanced capabilities in estimating, calculating, and using fractions, recognizing and using patterns and relationships, employing spatial reasoning, utilizing measurements, and interpreting statistical data and facts.

Specifically, students were able to estimate and check solutions to problems by recalling addition and subtraction facts, solving problems, and verifying calculations using efficient

strategies. They also showed proficiency in interpreting proportional reasoning by visualizing, explaining, and ordering fractions, as well as solving problems using equivalent fractions. This development indicates that students are now better equipped to understand and apply mathematical concepts in various contexts, thereby enhancing their ability to solve real-life problems using mathematical tools and reasoning.

The realistic mathematics learning approach has proven to be an effective method for bridging the gap between abstract mathematical concepts and real-world applications. By embedding learning activities within the real context of students' lives, this approach facilitates the application of mathematical concepts to everyday situations, thereby making learning more meaningful and relevant. The significant improvements observed in class completion rates and minimum completeness criteria across the research cycles underscore the effectiveness of this approach in strengthening students' mathematical skills.

The realistic mathematics learning approach not only improves students' academic performance in mathematics but also enhances their critical thinking, problem-solving, and analytical skills. These findings suggest that this approach should be systematically and widely implemented in mathematics education to foster a deeper and more practical understanding of mathematical concepts among elementary school students. This study provides strong evidence that the realistic mathematics learning approach can lead to substantial improvements in students' mathematical abilities, making it a valuable strategy for educators aiming to enhance numeracy literacy in primary education.

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