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Application of Contextual Approach in Improving Computational Operation Skills in Students with Learning Delays

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Abstract

This study aims to analyze and determine the effect of applying the contextual approach in improving the ability of calculation operations in students with learning delays. This study uses a quantitative approach with a single-subject experiment method, often called Single Subject Research (SSR), with an A-B-A design. The subject of this study is grade VIII students at SMP Islam Mandiri. The data collection technique in this study was carried out using observation and a test of computational operation ability. The results of the baseline-1 phase showed a stable score and increased when the treatment was carried out in the intervention phase; after the treatment was carried out, the research subjects were then given a test in the baseline-2 phase, and the results obtained increased with a score of 100 in each session. The percentage overlap of the three phases is at the level of 0%. Thus, the results show that applying the contextual approach improves the ability to calculate operations in students with learning delays.

Keywords: Contextual Approach, Computational Operation Skill, Learning Delays, Single-Subject Research

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INTRODUCTION

Education is an individual's conscious effort (Spencer, 2019; Kurniawan, 2015). Education is carried out to develop the potential and talents that exist in each individual (Wu et al., 2016; Amaliyah & Rahmat, 2021; Saidovna, 2023). Each individual has different skills and potentials, and education is expected to help maximize their abilities (Sonnenberg et al., 2014; Nurhamidah, 2018). Education must be given to individuals without choice because each individual has the same right to education (Francisco et al., 2020; Umam, 2018). Schools are facilities provided to obtain a formal education. Each student has a variety of characters and abilities (Huliatunisa et al., 2020). This diversity is a challenge for teachers as educators in providing teaching in the classroom and creating a strategy for teaching so that what the teacher conveys in class can be optimally absorbed by students.

Some schools still require special attention because some students have learning delays. Students with learning delays face difficulties participating in general learning activities, especially academics (Irvan et al., 2021; Putri et al., 2021). These students need special attention in their learning to catch up with their classmates, especially in mathematics.

Mathematics lessons must be given to all students starting from Elementary School to equip them with logical, analytical, systematic, critical, and creative thinking skills and the ability to collaborate. Although mathematics is essential to learning, many students perceive it as complex because they initially encounter simple mathematics. However, as

they progress to higher grade levels, the mathematics they learn becomes more challenging (Rakhmawati, 2017). The mathematics taught in school becomes increasingly abstract and complex. Finally, mathematics has become a subject that students avoid because it is difficult and involves many numbers. Many students tend to become bored quickly and complain of headaches, resulting in a lack of interest in learning mathematics (Dwirahayu, 2018; Indriyani, 2016; Amelia, 2011; Rahayu et al., 2022; Acharya, 2017; Amallia & Unaenah, 2018; Mukminah et al., 2021; Hidajat et al., 2019) Therefore, a teaching approach that aligns with the characteristics of mathematics is needed to cultivate students' interest in learning mathematics.

Learning is a process to achieve overall changes resulting from experiences interacting with the environment (Vandini, 2016). The learning process requires reciprocal communication between the teacher and the students, both directly and indirectly. The learning process will be successful if the teacher, as an educator, possesses the main competencies in mastering the subject matter and teaching methods. Therefore, a teacher must be proficient in teaching methods that align with students' characteristics to facilitate their understanding of the knowledge imparted by the teacher.

The purpose of learning mathematics is to develop mathematical thinking skills, particularly by training how to think and reason (Angraini & Wahyuni, 2021; Hasanah et al., 2019; Sudiantini & Shinta, 2018; Fadillah, 2016). Therefore, teachers are required to be professional in planning and implementing instruction Teachers must be able to design methods or approaches to teaching that are appropriate for mathematics and make students the subject, not just the object of learning The goal of learning mathematics in life is to solve everyday problems (Siagian, 2016; Nurfadilah & Hakim, 2019) One of the mathematical learning materials that can develop knowledge and skills and be applied in life is the operation of integers.

Based on the researcher's observations, many students still have not mastered basic mathematical operations, even though this material is essential for students as mathematics is closely related to calculation. For this reason, some students who excel in mathematics at lower levels begin to face difficulties when complex concepts are introduced due to their lack of proficiency in basic mathematical operations. Therefore, it is common for many students to experience learning difficulties, including slow learners, are students who have low academic achievement or perform slightly below average compared to typically developing children in one or more academic areas (Nurfadhillah et al., 2021; Sakiinatullaila et al., 2020).

The researcher's alternative learning approach is contextual or Contextual Teaching And Learning (CTL). Contextual learning is a concept that helps teachers connect the material taught with real-life situations and encourages students to make connections between their knowledge and its application in everyday life (Baharuddin, 2017; Nilasari et al., 2016; Ramdani, 2018; Santoso, 2017; Lotulung et al., 2018; Ruswandi et al., 2022) The researcher chooses contextual learning because it relates to real-life situations, and it is expected that by implementing contextual learning, students will improve their understanding of mathematics (Annisa & Marlina, 2019) Contextual learning encourages students to apply what they have learned in their lives. Furthermore, the contextual approach is closely related to everyday life, making it highly relevant to the material on integer arithmetic operations. Therefore, this material is not merely memorized and forgotten but is a foundation for students to navigate real-life situations.

In this study, the subjects are slow learners or students with learning difficulties, selected based on recommendations from the school teachers. Initially, the teacher proposed several students, but after observation, the researcher chose one. The selection was based on the student's suitability with the subject criteria, including their willingness to cooperate. Based on observations and interviews conducted at the school, the

mathematics teacher still needs to fully address the difficulties faced by the students, especially in this subject. This is because of the teachers' time constraints and only two mathematics teachers are in the school. No research has been conducted yet to address this issue. Based on this, the researcher is interested in conducting a study using a contextual approach for slow learners.

In line with Panji Setiawan and Dewa Nyoman Sudana (2018), implementing contextual learning has shown that it can improve students' mathematics learning outcomes. Furthermore, research by Puspita Mayang Wulan (2017) on the impact of contextual learning using a single-subject research design focused on students with learning difficulties. Using a single-subject research design (SSR) in mathematics is rare, so the researcher is interested in conducting a study using this design.

Single-subject research (SSR) is an experimental study that observes and evaluates interventions or specific treatments on a single subject through repeated assessments over a specified time (Refwin & Kasiyati, 2019). In line with Salis Fauziah Istiqomah's (2014) research on deaf students in realistic mathematics learning using an SSR research design, there has been limited research on SSR with slow learners in mathematics education. Previous studies have primarily focused on students with special needs, whereas slow learners are commonly found in mainstream schools. This single-subject research focuses on the development of one subject (student), aiming to address the perceived difficulty in mathematics often faced by students. This research will be beneficial for teachers, especially for those who have a majority of slow-learning students who require sufficient time to receive and absorb lesson materials during the teaching process in the classroom The research conducted by the researcher is based on observations and issues commonly found in schools, namely the mastery of basic mathematical skills, specifically arithmetic operations Therefore, the results of this research are not only intended for slow-learning students but also can serve as an alternative teaching method in regular classrooms, aimed at improving students' arithmetic skills Thus, the researcher conducted the study with the title Application of Contextual Approach in Enhancing Arithmetic Operation Skills for Slow-Learning Students.

METHODS

This research is an experimental study that analyzes the effectiveness of the contextual approach in improving arithmetic skills in slow learners. This study utilizes a single-subject research design (SSR). According to Manikmaya and Prahmana (2021), SSR is a method aimed at observing the repeated effects of a treatment on a participant over a specific period—the Single Subject Research (single-subject study) design. With an A-B-A design is depicted in Figure 1.

Baseline-1	Intervention	Baseline-2
	X X X X X	
0 0 0	0 0 0 0 0	0 0 0
	Session	

Figure 1. A-B-A Design

The subject of this research is a slow learner student in SMP Islam Mandiri class VIII, with a total of one research subject. The determination of the subject in this study was done using the purposive sampling technique, which is a method of sampling data sources

based on specific considerations (Sidiq et al., 2019). The reason for selecting this subject is because the student needs help understanding lessons, especially in mathematics. The data collection methods used were observation and arithmetic operation ability tests. The tests were conducted in three phases: baseline-1, intervention-2, and baseline-2. The data analysis techniques used were within-condition analysis and between-condition analysis. The results of the data analysis showed improvement before and after the treatment.

RESULTS & DISCUSSION

Results

The subject in this study is one of the students suspected to have difficulty learning mathematics, especially in the arithmetic operations of integer numbers. Socially, AN is easy to socialize and communicate with and is also active in non-academic activities. Physically, AN appears to be like any other average child without obstacles. Based on the interview with the mathematics teacher, AN is similar to other students except in the academic field, where AN's performance is significantly below average, and AN is slow in understanding the material taught by the teacher. During mathematics lessons, AN still needs to work on arithmetic operations, especially those involving integer numbers, and the results are far from expected. AN has not yet mastered the material of integer numbers. AN's communication abilities are not a problem, as observed during interactions with the researcher. AN can express questions on material that they still need to understand.

The responses exhibited by the subject during the learning activities, which will be elaborated on in this study, are as follows: initial ability description (before intervention), during, and after intervention. The explanation regarding the subject's responses is as follows:

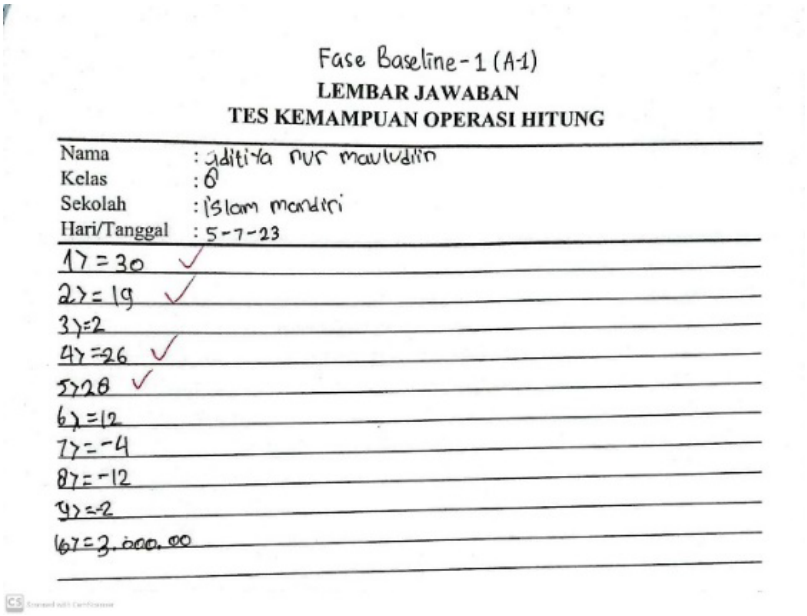
Baseline-1 Description (Initial Ability Before Intervention or Treatment)

During the baseline-1 stage, four sessions are conducted. In this stage, subjects are given a series of arithmetic problems, explicitly focusing on integer topics, with several sessions to measure their abilities. In each session, research subjects are given ten questions to be independently solved. This is done to assess the subjects' initial abilities before intervention accurately. Before this stage, the researcher prepares the necessary baseline-1, intervention, and baseline-2 tools. In baseline-1, the medium used is a test sheet for arithmetic operations. The score for arithmetic ability is calculated based on the maximum score of two for each question if the subject answers correctly and zero if the subject answers incorrectly. Furthermore, the total score obtained will be multiplied by ten and divided by 20, resulting in a maximum score of 100 for each session.

As for the explanation regarding the implementation of baseline-1, it is as follows:

(a) The initial activity involves inviting students to pray before starting the lesson, giving greetings, addressing students, and establishing rapport with the research subjects to encourage interaction with the researcher;
(b) The core activity consists of providing a set of 10 arithmetic operation test questions, giving instructions to the subjects on how to solve the given problems, assisting them during the task, and providing stimuli if they become bored;
(c) The closing activity involves praising the subjects upon completing the initial ability test and concluding the session with a prayer. The data on the computational ability of the subjects in baseline-1 is as follows:

Observation 1: The first observation was conducted on Wednesday, July 5, 2023. Based on the initial ability test results show that the level of computational ability in integer subjects is still low. This is evidenced by the subject's score being below the minimum passing criteria of 40, categorizing it as low. The subject's answers can be seen in Figure 2.



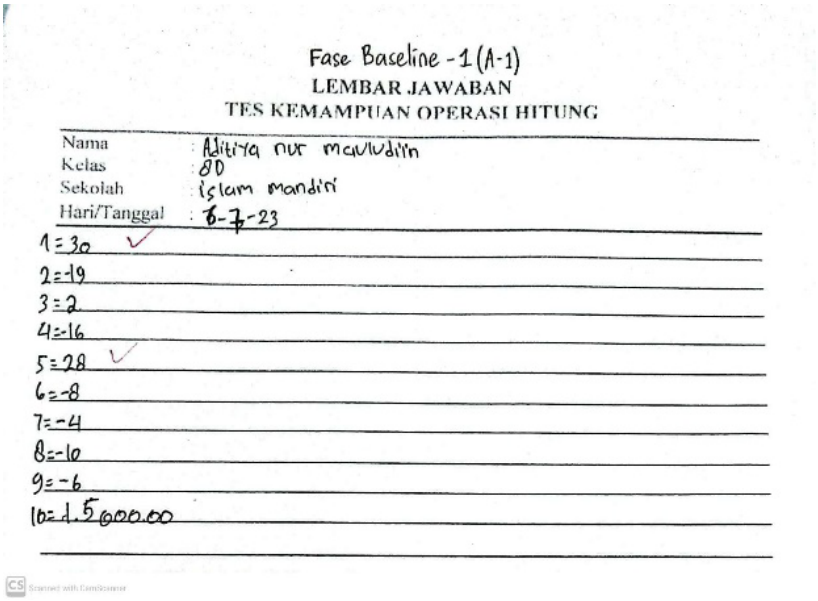
Fase Baseline-1 (A-1)
LEMBAR JAWABAN
TES KEMAMPUAN OPERASI HITUNG

Nama : Aditiya nur mauludin
Kelas : 8
Sekolah : Islam mandiri
Hari/Tanggal : 5-7-23

1) = 30 ✓
2) = 19 ✓
3) = 2
4) = 26 ✓
5) 28 ✓
6) = 12
7) = -4
8) = -12
9) = -2
10) = 3.000.00

Figure 2. Answers to the Subjects of the First Meeting of the Baseline-1 Phase

Observation 2 was conducted on Thursday, July 6, 2023. During this second observation, there were some challenges, namely that the subject needed to feel better, resulting in a lack of enthusiasm while solving the problems. The questions given were the same as before. The error frequency in the subject's arithmetic operations ability increased in observation 2, and the obtained score was 20, which differed from the first observation. The subject's answers can be seen in Figure 3.



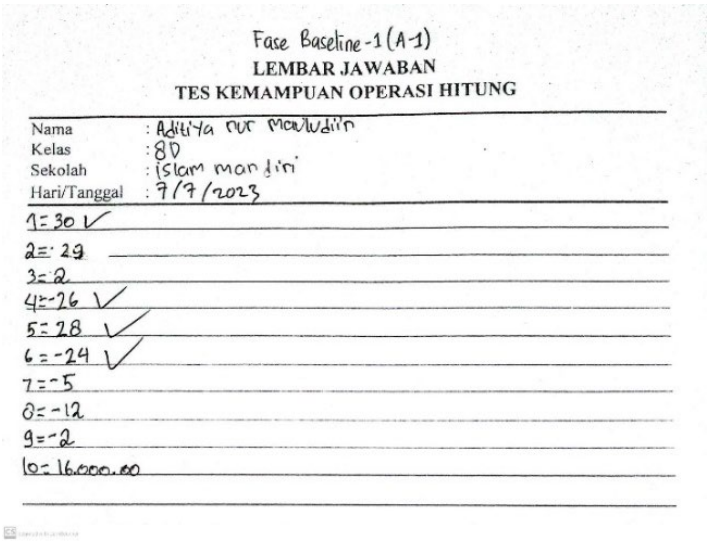
Fase Baseline-1 (A-1)
LEMBAR JAWABAN
TES KEMAMPUAN OPERASI HITUNG

Nama : Aditiya nur mauludin
Kelas : 8D
Sekolah : Islam mandiri
Hari/Tanggal : 6-7-23

1 = 30 ✓
2 = 19
3 = 2
4 = 16
5 = 28 ✓
6 = 8
7 = -4
8 = -10
9 = -6
10 = 1.500.00

Figure 3. Answers to the Subjects of the Second Meeting of the Baseline-1 Phase

The third observation was held on Friday, July 7, 2023. Based on the results of the third observation, the calculation operation ability test on the subject's integer material was the same as the results of the first observation test, which was 40. This is because the subject has started to get fit and is excited to work on it. The subject's answer can be seen in Figure 4.



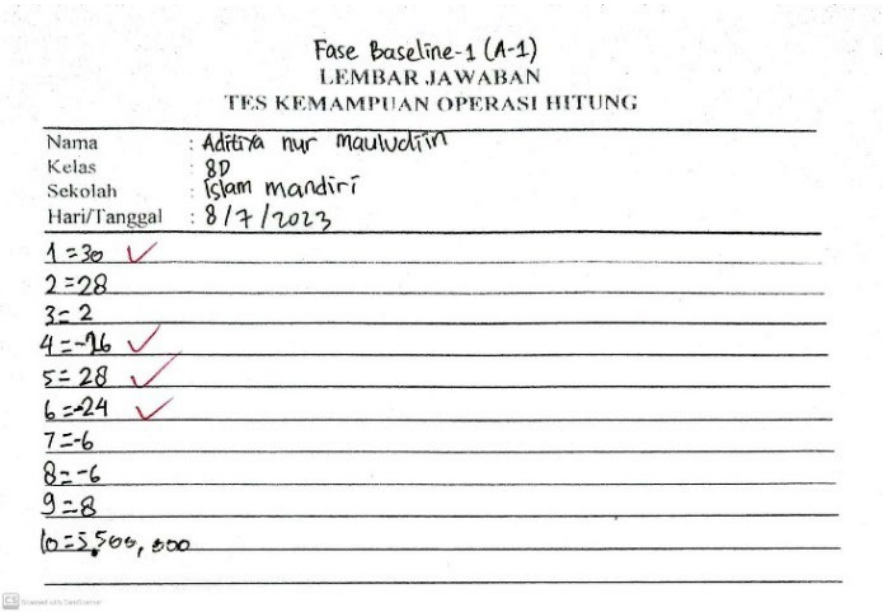
Fase Baseline-1 (A-1)
LEMBAR JAWABAN
TES KEMAMPUAN OPERASI HITUNG

Nama : Aditiya nur mauludin
Kelas : 8D
Sekolah : islam mandiri
Hari/Tanggal : 7/7/2023

1=30 ✓
2=29
3=2
4=-26 ✓
5=28 ✓
6=-24 ✓
7=-5
8=-12
9=-2
10=16.000.00

Figure 4. Answers to the Subjects of the Third Meeting of the Baseline-1 Phase

Observation number 4 was conducted on Saturday, July 8, 2023. Based on the observations from the fourth observation, the arithmetic operation ability test results on the subject's integer material remain consistent with the results from the first and third observations, which are 40. The subject's answers can be seen in Figure 5.



Fase Baseline-1 (A-1)
LEMBAR JAWABAN
TES KEMAMPUAN OPERASI HITUNG

Nama : Aditiya nur mauludiin
Kelas : 8D
Sekolah : Islam mandiri
Hari/Tanggal : 8/7/2023

1=30 ✓
2=28
3=2
4=-16 ✓
5=28 ✓
6=-24 ✓
7=-6
8=-6
9=8
10=5.500,000

Figure 5. Answers to the Subjects of the Fourth Meeting of the Baseline-1 Phase

The observation results of the performed arithmetic operations can be described using Table 1.

Table 1. Computational Operational Ability Score at Baseline-1 Phase

Meeting	Date	Time	*Target Behaviour*	Score
1	July 5, 2023	10.00-11.00	Computational Operation Capability	40
2	July 6, 2023	10.00-11.00		20
3	July 7, 2023	10.00-11.00		40
4	July 8, 2023	10.00-11.00		40

Based on Table 1, the scores obtained by the subjects tend to remain stable. The subjects still need help solving arithmetic operations, especially problems involving negative integers. It can be concluded that during the baseline-1 phase, the subjects were required to demonstrate a satisfactory understanding of arithmetic operations.

The Implementation Description of the Intervention (Treatment)

In this study, the researcher conducted the first intervention by providing treatment in 6 sessions, each lasting 60 minutes. The intervention given to the subjects was mathematics learning using a contextual approach. The goal of the contextual approach was to facilitate the subjects' understanding and retention of the material as it relates to real-life situations. Data on the timing of intervention implementation can be seen in Table 2.

Table 2. Location and Time of Implementation of the Intervention Phase

Meeting	Location	Date	Time
1	SMP Islam Mandiri	July 10, 2023	10.00-11.00
2		July 11, 2023	10.00-11.00
3		July 12, 2023	10.00-11.00
4		July 13, 2023	10.00-11.00
5		July 14, 2023	10.00-11.00

The following is an explanation regarding the implementation of the intervention phase (treatment) provided to the subjects:

Intervention 1 was conducted on July 10, 2023, in the classroom. During the first meeting, the subject focused on introducing arithmetic operations and integers. The steps for providing intervention in learning are as follows: (a) A perception activity, the researcher presents the learning topic, Today we will learn about 'arithmetic operations with integers'; (b) Core activity, the subject is given information through this activity by connecting it to everyday life The subject is given a problem and asked to think of a solution. The subject of how to calculate negative integers is explained. The researcher provides examples of how to solve repeated integer operations. With guidance from the teacher, each subject gives feedback on the material presented and asks questions about any unclear topics; (c) In the closing activity, before ending the lesson, the subject is asked to summarize the lesson on addition and subtraction of integers.

The second intervention was conducted on July 11, 2023. During the implementation of the second intervention, it remained the same as the previous one. The research subjects were asked to solve problems related to integer arithmetic. The steps for providing intervention in learning were as follows: (a) A perception activity, where the researcher introduced the topic of integer arithmetic operations; (b) Core activity, where the subjects were given information related to everyday life and asked to think of solutions

to a given problem The subjects were explained how to perform integer arithmetic operations for multiplication and division The researcher provided examples of solving integer arithmetic operations repeatedly. With guidance from the teacher, each subject provides feedback on whole numbers and asks questions about material that needs to be understood; (c) In the closing activity, before ending the lesson, the subject is asked to summarize the lesson.

The third intervention was conducted on July 12, 2023. During the implementation of the third intervention, a learning outcome test was conducted after the intervention to measure the mastery of integer arithmetic material possessed by the research subject. The mastery test on arithmetic operations given by the researcher consisted of 10 essay questions. The subjects did not encounter significant problems during the third intervention, although they were still slightly confused. The test results for arithmetic ability showed improvement from the baseline-1 phase with a score of 70. The subject's answers can be seen in Figure 6.

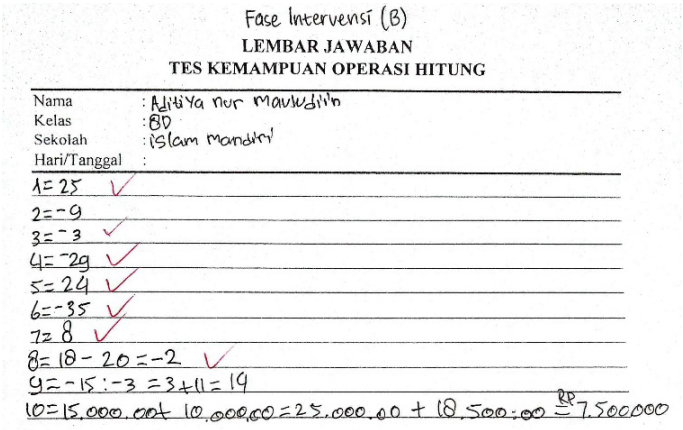

Fase Intervensi (B)
LEMBAR JAWABAN
TES KEMAMPUAN OPERASI HITUNG
Nama : Aditiya nur mawuditin
Kelas : 8D
Sekolah : islam mandiri
Hari/Tanggal :
1=25
2=-9
3=-3
4=-29
5=24
6=-35
7=8
8=18-20=-2
9=-15:-3=3+11=14
10=15.000.00+10.000,00=25.000.00+18.500:00=RP 7.500000

Figure 6. Answers to the Subjects of the Third Meeting of the Intervention Phase

The fourth intervention was conducted on July 13, 2023. The implementation of the fourth intervention remained consistent with the previous interventions, and this activity was repeated until stable data was obtained. The research subjects were asked to complete the second intervention phase test, which lasted for 60 minutes. During the implementation of the fourth intervention, the subjects improved their scores, reaching 80. The subject's responses can be seen in Figure 7.

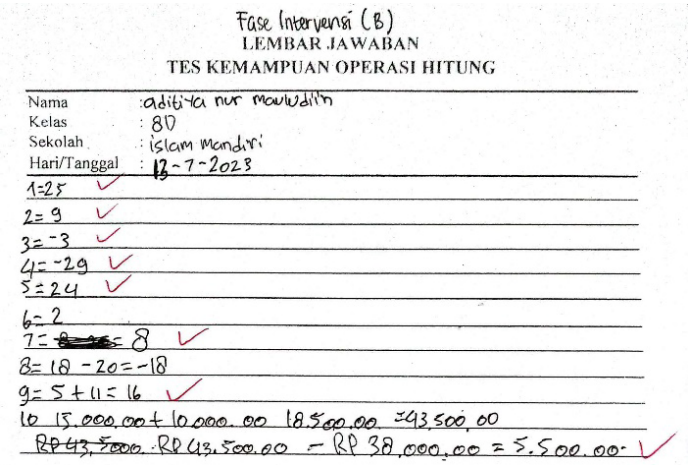
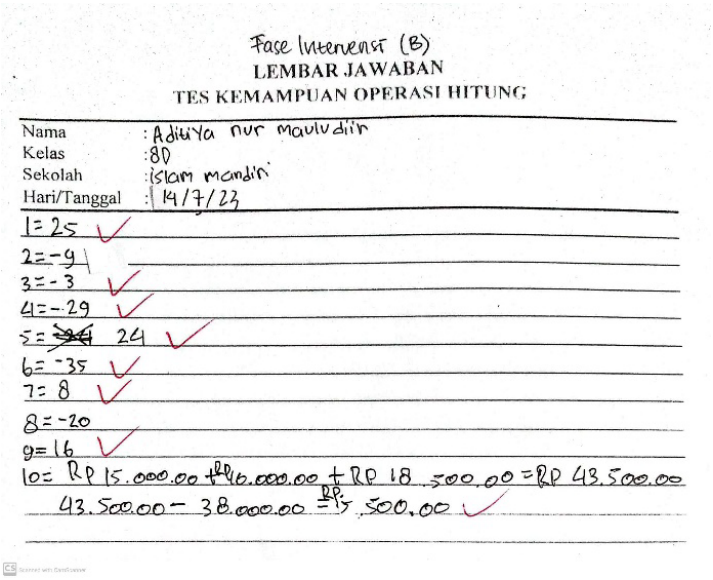

Fase Intervensi (B)
LEMBAR JAWABAN
TES KEMAMPUAN OPERASI HITUNG
Nama : aditiya nur mawuditin
Kelas : 8D
Sekolah : islam mandiri
Hari/Tanggal : 13-7-2023
1=25
2=9
3=-3
4=-29
5=24
6=2
7=8
8=18-20=-18
9=5+11=16
10 15.000,00+10.000.00 18.500,00 =43.500,00
RP43,5000-RP43.500,00 - RP 38.000,00 = 5.500.00

Figure 7. Answers to the Subjects of the Fourth Meeting of the Intervention Phase

The fifth intervention was conducted on July 14, 2023. Its implementation remained consistent with the previous interventions, and this activity was repeated until stable data was obtained. The research subjects were asked to complete the third intervention phase test, which lasted for 60 minutes. During the fifth intervention, the subjects received the same score as during the fourth intervention, which was 80. The subjects' responses can be seen in Figure 8.


Fase Intervensi (B)
LEMBAR JAWABAN
TES KEMAMPUAN OPERASI HITUNG

Nama : Adiva nur mauludin
Kelas : 8D
Sekolah : islam mandiri
Hari/Tanggal : 14/7/23

1= 25
2= -9
3= -3
4= -29
5= ~~24~~ 24
6= -35
7= 8
8= -20
9= 16
10= Rp 15.000.00 + Rp 6.000.00 + Rp 18.500.00 = Rp 43.500.00
43.500.00 - 38.000.00 = Rp. 5.500.00

Figure 8. Answers to the Subjects of the Fifth Meeting of the Intervention Phase

Table 3 presents the subjects' scores when solving arithmetic problems with integer numbers to clarify the data obtained in each intervention session.

Table 3. Computational Operability Score in the Intervention Phase

Meeting	Target Behaviour	Score
1		70
2		70
3	Computational Operation Capability	70
4		80
5		80

The description of Baseline-2 (After Intervention/Treatment)

The final ability of the subjects in arithmetic operations will be measured in Baseline-2 through a series of 10 essay questions conducted in 3 sessions from July 14th to July 16th, 2023 During the Baseline-2 assessment, the subjects were given questions related to integer arithmetic operations The purpose of the Baseline-2 phase was to assess the mastery of integer arithmetic concepts that the research subjects had acquired after being taught using a contextual approach In this Baseline-2 phase, the subjects showed improvement in solving the questions and achieved a maximum score of 100 in each session The subject's answers can be seen in Figure 9, and the results of the arithmetic ability test in the Baseline-2 phase can be found in Table 4.

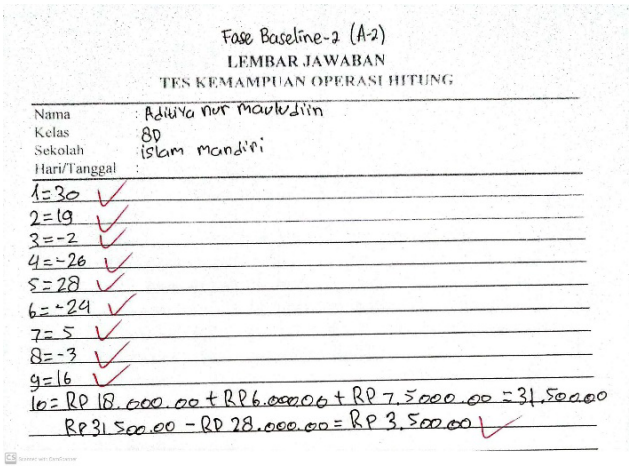

Fase Baseline-2 (A-2)
LEMBAR JAWABAN
TES KEMAMPUAN OPERASI HITUNG
Nama : Adiva nur maulidin
Kelas : 8D
Sekolah : Islam mandiri
Hari/Tanggal :
1=30
2=19
3=-2
4=-26
5=28
6=-24
7=5
8=-3
9=16
10= RP 18.000.00 + RP 6.000.00 + RP 7.5000.00 = 31.500.00
RP 31.500.00 - RP 28.000.00 = RP 3.500.00

Figure 6. Answers to the Subjects of the Baseline Phase-2

Table 4. Computational Operational Ability Score at Baseline-2 Phase

Meeting	Target Behaviour	Score
1	Computational Operational Ability	100
2		100
3		100

The analysis in this study utilizes descriptive analysis. The data analyzed is based on individual data obtained. The components analyzed are based on within-condition analysis and between-condition analysis. In the within-condition analysis, the components analyzed include condition length, directional tendency, stability level, rate of change, data trace, and range. However, in the between-condition analysis, the components analyzed include the number of variables changed, changes in directional tendency and their effects, stability changes, level changes, and overlapping data percentages. In this study, the testing was conducted by examining the impact of applying a contextual approach on the arithmetic operation abilities of subjects before and after intervention. The hypothesis proposed in this study is that using a contextual approach can improve arithmetic operation abilities in slow-learning students.

Based on the previously presented measurement results, to understand and clarify the developments that occurred in baseline-1, intervention, and baseline-2, they can be presented in Table 5.

Table 5. Recapitulation of Results Data in Phases A-1, B, and A-2

No.	Phase	Score
1	*Baseline*-1	40
2		20
3		40
4		40
5	Intervention	70
6		70
7		70
8		80
9		80
10	*Baseline*-2	100
11		100
12		100

Table 5 represents the cumulative scores of the arithmetic operation ability test for subjects achieved at baseline-1 (A-1), intervention (B), and baseline-2 (A-2). The data indicates that mathematics learning with a contextual approach influences learning outcomes, resulting in relatively stable and improved scores after the intervention.

Based on the obtained data, it is known that learning using a contextual approach can enhance the arithmetic operation ability of subjects in solving problems related to integer numbers. Tables 6 and 7 summarize the analysis results from the research data above.

Under-Condition Analysis

Table 6. Summary of the Results of the Analysis Under Condition

Condition	Baseline-1 (A-1)	Intervention (B)	Baseline-2 (A-2)
Length of Condition	4	5	3
Estimation of Direction Tendency	(=)	(+)	(=)
Data Stability Trends	Stabil	Variable	Stabil
Data Trail	(=)	(+)	(=)
Range Level and Stability	Stable	Variable	Stable
Level Change	40 - 40 (No Change)	70 - 80 = +10 (Improving)	100 – 100 (No Change)

In this study, it is known that the length of baseline-1 phase (A-1) = 4, Intervention (B) = 5, and baseline-2 (A-2) = 3. Based on the results of the analysis, it was found that there were changes in the calculation ability of the research subjects. The trend observed in baseline-1 (A-1) is stable, Intervention (B) shows improvement, and baseline-2 (A-2) remains stable. Additionally, the change in calculation ability occurs during the intervention, with a level change of +10

Inter-Condition Analysis

Table 7. Summary of the Results of the Analysis Between Conditions

Condition Comparison	B/A-1	A-2/B
Number of Variables Changed	1	1
Changes in directional tendencies and their effects	(=) (+)	(+) (+)
Changes in Tendencies and Stability	Stable to Variable	Stable to Stable
Level Change	80 – 40 = +40	100 – 80 = +20
Overlap Percentage	$(0 \div 60) \times 100 = 0\%$	$(0 \div 20) \times 100\% = 0\%$

Based on the analysis results in Table 7, the change in direction trend between baseline-1 (A-1) and intervention (B) is stable and improved, indicating a better condition. The shift in direction trend between intervention (B) and baseline-2 (A-2) is from improved to stable, signifying further improvement. This is also supported by the overlap data between baseline-1 (A-1) and intervention (B) or intervention (B) and baseline-2 (A-2), which is 0%.

Discussion

This research aims to test the implementation of a contextual approach in improving the arithmetic skills of slow learners. The data analysis results show that the contextual approach positively impacts arithmetic abilities. Increased learning outcomes for the subjects are evidenced during the intervention, particularly in the baseline-2 phase after the intervention.

The ability to perform calculations is a fundamental skill that must be mastered in mathematics (Chityadewi, 2019; Malmia et al., 2019). Mathematics is an abstract science related to numbers, which often poses difficulties for many students. Specifically, slow learners who need help to grasp the material face challenges in their learning process. The problems experienced by slow learners hinder their progress in the classroom, resulting in outcomes that fall below expectations. Therefore, an instructional approach is needed to assist slow learners in understanding mathematics. Proficiency in mathematical operations is essential at every educational level to support students in their mathematical learning. Different approaches are used in teaching; one such approach is contextual learning, which relates to real-life situations. Based on the issues experienced by the research subjects, the researcher attempts to provide stimuli to the subjects using a contextual approach. The contextual approach can also help students realize the relevance of arguments and motivation to apply their knowledge and skills meaningfully (Susanti, 2019; Afni, 2020). This study successfully proves that the fundamental principles of the contextual approach have a positive effect on the subjects, according to the Center for Occupational Research (COR) as cited by Julia (2023), who explains that within CTL there are five basic concepts referred to as REACT (Relating, Experiencing, Applying, Cooperating, Transferring) Relating involves learning in real-life situations where lessons are used or connected to children's everyday activities to solve problems (the connection between theory and the natural world) (Yanti, 2022).

Experiencing is learning in the context of exploration, discovery, and creation (related to the inquiry process) (Kholisiyah & Yuanita, 2018). Applying is learning by applying acquired knowledge to practical use and needs (Kuswandi & Putri, 2021). Children apply concepts and information to future imagined needs. Cooperating is learning through sharing information and experiences, responding to each other, and communicating (related to social aspects) (Zaedah, 2023). Transfering is a learning activity utilizing knowledge and understanding based on new contexts to acquire new learning experiences (Novri et al., 2018).

The contextual approach that the researcher applies is related to the material tested on the subjects, namely integers. The contextual approach forms memories in students, not just rote memorization. According to Wijayama (2023), for mathematical concepts to be helpful and stored in the Long-Term Memory of students rather than just the Short-Term Memory, the following principles should be considered in the learning process: 1) Lessons should be meaningful for students; 2) Students are encouraged to develop what they have learned richly; 3) Students engage in encoding when studying mathematics through elaboration; 4) Students connect the subject matter to their own experiences as a form of

self-reference effect. Based on the description provided, meaningful learning is necessary so that the knowledge acquired by students during the learning process can be retained longer in their memory. This theory supports the idea that applying a contextual approach in mathematics education can help students relate the material to everyday life, thereby minimizing the difficulties they face by recognizing the importance of mathematics in their lives. The contextual approach in this study is a treatment given to address the challenges slow-learning students face in understanding and solving mathematical operation problems.

The results obtained from implementing the contextual approach indicate an improvement in computational abilities in the known subject, as evidenced by comparing the scores obtained in baseline-1, intervention phase, and baseline-2. In baseline-1, the subject did not demonstrate a good understanding of computational operations and data stability, with scores of 20 in the first meeting, 20 in the second meeting, a decrease to 10 in the third meeting, and a return to 20 in the fourth meeting However, during the intervention phase, when the contextual approach was applied, the subject experienced a significant improvement, achieving scores of 70 in the first to third intervention meetings and increasing to 80 in the fourth to fifth meetings. Furthermore, after providing a contextual approach, the subjects were retested during the baseline-2 phase, and they showed improvement from the intervention phase, with a score of 100 from the first to the third meeting.

Based on the data analysis results, it was found that the trend and trajectory estimates during both baseline and baseline-2 phases indicated an increase. The stability changes also showed that the data remained stable in each phase. Additionally, there was a (+) 10 increase in data level during the intervention phase. The analysis results of the conditions between the baseline phase indicate that changes in direction and their effects show an improvement. The same trend is observed during the intervention phase, where the direction and effects also indicate improvement. Changes in stability trends show that data from baseline-1 to intervention and intervention to baseline-2 remain stable. The level changes indicate an increase of (+) 60 during the intervention phase compared to baseline-1 and (+) 20 during baseline-2 after the intervention. The 0% overlap percentage indicates a positive impact of the intervention on the target behavior, as a smaller overlap percentage signifies a better influence of the intervention on the target behavior.

During the intervention, the subject always appeared enthusiastic and motivated. The subject consistently approached the learning process with great enthusiasm. In every meeting, the subject followed the researcher's instructions or commands. Additionally, the subject was friendly, making cooperation easy and facilitating the progress of this learning and research process. Based on data analysis, it can be concluded that implementing contextual learning positively impacted the subject's mathematical computation abilities. The acquisition of scores supports this, as well as observations during the contextual learning intervention phase and baseline-2 phase and data analysis showing an improvement in the subject's mathematical computation abilities after the intervention.

Baharuddin explained that contextual learning is a concept that helps teachers connect the material being taught to real-world situations that students (subjects) possess and encourages them to make connections between their existing knowledge and its application in everyday life (Wulan, 2017). This concept also applies in reverse, where students' everyday experiences can be utilized in the learning process to enhance their competence. In implementing contextual learning, the teacher's role is merely as a facilitator, not the main source of learning or primary information. This theory aligns with the results the subjects showed, as their test scores significantly improved after intervention using contextual learning, resulting in high grades. The subject experienced a renewed improvement after the intervention and achieved perfect scores. The results of this study

are also consistent with the research conducted by Panji Setiawan & I Dewa Nyoman Sudana (2018) titled Application of Contextual Learning Model to Improve Mathematics Learning Outcomes The findings from that research indicate that the contextual approach has an impact on enhancing mathematics learning outcomes Furthermore, based on the study conducted by Sari (2019) titled Effectiveness of the Learning Model with Realistic Mathematics Approach (PMR) on Mathematics Skills of Slow Learner Students in Grade V and Manikmaya & Prahmana (2021) titled Single Subject Research: Comparative Learning of Equivalent and Inverse Values with a Contextual Teaching and Learning Approach for Slow Learner Students. These studies indicate that research design with SSR effectively allows slow learner students to observe behavior in more detail. According to SSR theory, SSR is a method aimed at examining the effects of a given problem through repeated treatment of subjects over a specific period.

CONCLUSION

Based on the research findings and discussion, it can be concluded that the implementation of the contextual approach has an impact on improving arithmetic skills in slow learners This is demonstrated by the increase in arithmetic scores in the research subjects, as evidenced by the improvement from the initial test (baseline-1) to the final test (baseline-2) after intervention using the contextual approach In the initial test (baseline-1), the research subjects scored 20 in three sessions and 10 in one session However, in the final test (baseline-2), the research subjects achieved a score of 100 in each session This indicates an improvement in learning outcomes for the subjects after the intervention Therefore, it can be concluded that the implementation of the contextual approach has a positive effect on enhancing arithmetic skills in slow learners.

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