Contextual Teaching Learning; An Approach to Improving Students' Mathematics Learning Outcomes

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Article Info	Abstrak
	This research is motivated by the low level and lack of Students' activity in mathematics learning, where students tend to be relaxed and less motivated when learning takes place. This research was conducted in the form of Classroom Action Research with the research subjects being 36 class IV students at SD Negeri 21 Kota Bima. The aim of this research is to determine the improvement in students' learning outcomes by using the Contextual Teaching Learning approach in mathematics subjects. The data used in this research is quantitative data obtained from teacher and student activities through observation, test questions on daily tests. The results of this research show that the average percentage of teacher activity during learning activities increased from 77.02% in cycle I, to 87.61% in cycle II. And the average percentage of Students' activity during learning activities increased from 83.93% in cycle I to 92.86% in cycle II. The average students' learning outcomes seen from the test results have increased from the Basic Score obtained on average 69.73%. In the first daily test, it increased 4.8 points to 74.53%. And in the second daily test it increased again by 9.12 points to 83.73%. Overall, it can be concluded that the application of the Contextual Teaching Learning approach can improve the learning outcomes of class IV students at SD Negeri 21 Kota Bima.

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1. INTRODUCTION

Good learning discipline is learning provided by the teacher based on guided learning structures and activities so that students contribute directly to learning [1]. Besides that,Rambe & Afri (2020)explains that teachers have an active role in learning and are of course a very important position for effective learning. The competencies possessed by a teacher must be reliable in the learning process, including in determining learning models or methods that are appropriate to the material, because learning effectiveness can be achieved if the suitability of learning is in accordance with the material being taught [3]. These competencies are an important aspect of learning, because students need relevant strategies in managing their businesses. Choosing the right model or method and learning strategies used by students will really help in successful learning [4]. A good learning model or method to implement is a model or method that can improve students' ability to carry out activities accompanied by a positive response in learning, so that it can create effective learning [5].

According to Sandyavitri (2008)Mathematics is a subject that is directly related to students' daily lives. Almost every activity carried out is related to mathematics, but ironically there are still many students who are less interested in mathematics and get an average score below the predetermined passing score because students have difficulty understanding the material presented by the teacher [7] . The difficulties experienced by students are caused by several things, including a lack of teacher creativity in presenting material, learning is only centered on the teacher, not the students, and the material is not related to students' daily lives [8]. Most teachers still present material only in lectures, while students just sit and quietly listen to the teacher's lecture. So just by being listeners in the process of teaching and learning activities, they can't really digest what they have heard.[9]. Finally, boredom arises among students because the teacher presents the material in a

monotonous way only through lectures. In fact, the presence of this new independent learning curriculum guides students to learn independently and have fun [10].

Fathurrahman & Fitrah (2023)stated that teachers and the learning process are very closely and absolutely related. This means that the teacher will have more educational meaning if the teacher is able to carry out the learning process well, precisely, accurately and relevant to the functions and principles of education. In this case, we can use a learning strategy that involves students playing an active role and brings students closer to their environment, namely the Contextual Approach or better known as Contextual Teaching Learning. The Contextual Teaching Learning approach is one approach that is very helpful in making it easier for students to learn mathematics [12]. With a contextual approach, the learning process and learning carried out by students will be easier and more enjoyable. Contextual Teaching Learning is a learning strategy that emphasizes the relationship between learning material and real life experienced by students, so that students are able to connect and apply learning outcomes competencies in everyday life. The Contextual Teaching Learning approach can be applied to any subject, but this time the author focuses on mathematics subjects because in general students' difficulties in understanding the material are greater in mathematics subjects than in other subjects [13].

Based on observations and interviews with fourth grade teachers that researchers conducted at Bima City 21 Elementary School, researchers found that there were still many students who were less interested in mathematics lessons and found it difficult to understand the material presented by the teacher, and they were not facilitated by the teacher to express opinions or ideas. -their ideas. And from the student score list book, the author also saw the low level of completeness achieved by students based on the assessment criteria for class IV mathematics, namely 76. Of the 36 students, only 14 students experienced complete learning, consisting of 6 male students and 8 female students with an average student score of 69.73%. This is because the learning process that is carried out still uses the lecture method which is guided only by the teacher's handbook without being created with other learning strategies that can involve students directly and actively in learning activities. For the Contextual Teaching Learning approach, the class IV teacher stated that in this class there had never been any learning using the Contextual Teaching Learning Approach. In fact, in terms of conditions and facilities, this school is very supportive of implementing this approach because it does not require complicated media or learning tools, you can use items in the classroom, used items, and even the environment around the school and students' homes. Based on the findings above, the author is interested in conducting research using a contextual teaching learning approach in improving mathematics learning outcomes for fourth grade students at State Elementary School 21 Bima City.

2. RESEARCH METHOD

This type of research is classroom action research (PTK). There are four stages in the PTK model, namely: planning, implementation, observation and reflection. This research was conducted in two cycles consisting of cycle I and cycle II. This form of research is collaborative research. Researchers act as implementers of actions, while observations or observations are carried out by colleagues. This research was carried out at SD Negeri 21 Kota Bima in semester 2 (two)/even of the 2023/2024 academic year. The subjects of this research were 36 class IV students, consisting of 15 male students and 21 female students. The data used in this research is primary data, namely qualitative data and quantitative data. Meanwhile, the instrument used to measure teacher and Students' activity was a teacher and Students' activity observation sheet. And to measure students' learning outcomes, we use daily multiple-choice tests. In collecting data, researchers used observation, interviews, tests and documentation techniques. And to analyze the data, descriptive analysis techniques were used.

Analysis of teacher and Students' activity data can be determined using the formula:

$$NR = \frac{JS}{SM} \times 100$$

Information:
NR: Average percentage of activity (teacher/student)
JS: Total score of activities carried out
SM: Maximum score obtained from teacher/student activities

To determine the level of success of teachers and students in implementing the CTL approach, it can be seen in the following table of teacher and Students' activity value categories:

Table 1. Teacher and Students' activity Value Categories

No.	Value Category	Information
1.	$80 - 100$	Very good
2.	$70 - 79$	Good
3.	$51 - 69$	Enough
4.	≤ 50	Very Not Good

For Determine individual students' learning outcomes or grades in the range 0-100 with the formula:

$$NS = \frac{Skor\ yang\ diperoleh}{Skor\ Soal} \times 100$$

Based on the assessment criteria set by the school, in this study students are said to have completed if they get a score ≥ 76. Next, student scores are grouped to determine the category of students' learning outcomes according to the following table:

Table 2. Learning Outcome Category

Average student scores	Learning outcome categories
86-100	Very good
76 – 85	Good
66 – 75	Enough
51 – 65	Not enough
0 -50	Fail

To determine the average student score using the formula:

$$x = \frac{\Sigma x}{N}$$

Information:
x= Average student score
Σx= Total student scores
N= Number of students

Classical completion is said to be complete if 80% of the total students achieve the predetermined passing score. Classical completeness can be calculated using the following formula:

$$KK = \frac{JS}{N}$$

Information:
KK=Percentage of classical completion
JS = Number of students who completed
N = Total number of students
To determine the increase in students' learning outcomes, the following formula can be used:

$$P = \frac{\text{Posrate} - \text{Baserate}}{\text{Baserate}} \times 100$$

Information:
P   =Percentage increase
Prostrate   = Value after taking action
Biserrate   = Value before Action

3. RESEARCH RESULTS AND DISCUSSION
3.1. Research result
Teacher Activities

Observations regarding the implementation of teacher actions consist of 7 components based on the components in the CTL approach which are observed together with the implementation of actions in the learning process through a contextual approach. The performance of implementing teacher actions is based on the suitability of teacher learning with the learning plan.
We can see the increase in teacher activity each cycle in implementing the CTL approach in the following table:

Table 3. **Increasing Teacher Activities in Cycle I and Cycle II in implementing the CTL approach**

	Cycle I		Cycle II	
	P1	P2	P1	P2
Total score	25	26	27	28
Percentage	76.18%	84.45%	86.67%	94.28%
Average	77.02%		87.61%	
Category	Good		Very good	

Teacher activity at the first meeting of cycle I was 76.18% in the good category, at the second meeting of cycle I was 84.45% in the good category. This is because teachers do not provide opportunities for students to express opinions and do not guide group discussions. At the fourth meeting of cycle II 86.67% was categorized as very good, at the fifth meeting of cycle II 94.28% was categorized as very good. This is because the teacher can fully control the class and can enliven the learning atmosphere.

Student Activities Observation of student activities also consists of 7 items observed by the teacher together with the implementation of actions in the learning process through a contextual approach. Observed student activities are adjusted to the 7 components of Contextual Teaching Learning.

We can see this increasing teacher activity each cycle in implementing the Contextual Teaching Learning approach in the following table:

Table 4. **Increasing Students' Activities in Cycle I and Cycle II in implementing the CTL approach**

	Cycle I		Cycle II	
	P1	P2	P1	P2
Total score	25	26	27	28
Percentage	72.34%	82.67%	87.48%	94.64%
Average	83.93%		92.86%	
category	Good		Very good	

Students' activity at the first meeting of cycle I was 72.34% in the good category, at the second meeting of cycle I 82.67% was in the good category. This is because students do not hear the teacher's explanation and are still shy about asking questions. At the fourth meeting of cycle II 87.48% was categorized as very good, at the fifth meeting of cycle II 94.64% was categorized as very good. This is because students are actively involved in the learning process and are no longer embarrassed to ask questions.

Analysis of Mathematics Learning Results

Table 5. Individual and Classical Completeness

Learning outcomes	The number of students	Individual Completeness		Classical Completeness	
		Not Completed	Complete	Completion Percentage	Category
Base Score	36	22	14	38.88%	Not Completed
Cycle I	36	17	19	52.77%	Not Completed
Cycle II	36	7	29	80.55%	Complete

From the table above, it can be seen that there has been an increase in individual completeness and classical completeness starting from the basic score, daily tests in cycle I, and daily tests in cycle II. In the basic score, there were 14 students who completed, while 22 students still did not complete. And classically it has not been completed yet because only 38.88% of students have completed it. In cycle I, students who obtained complete learning outcomes increased from 14 students to 19 students. Meanwhile, there were 17 students who did not complete. And classically, they have not yet received a completion score, because students who have completed have not yet reached 52.77%. In cycle II, students who completed increased from the previous number in cycle I, numbering 19 students to 29 students. Meanwhile, there were 7 students who did not complete. And classically, student completion has reached 80.55%. Thus, the research in cycle II can be said to be successful, so the research was sufficient only until cycle II.

Improved Learning Outcomes

Table 6. **Increase in Students' learning outcomes from Average Basic Score, Test Scores in Cycle I and Cycle II After Implementing the CTL Approach**

Value Groups	Average	Enhancement	
		Points	Percentage
Base score	69.73%	4.8	5.28%
Daily Test I	74.53%	9,12	12.86%
Daily Test II	83.73%		
Amount		13.92	18.14%

From an average basic score of 69.73, there was an increase in cycle I of 4.8 points to 74.53 with an increase percentage of 5.28%. From the first cycle average of 74.53, there was an increase in cycle II of 9.12 points to 83.73 with an increase percentage of 12.86%. Overall, there was an increase from Basic Score to UH II of 13.92 points with an increase percentage of 18.14%. So it can be concluded that the mathematics learning outcomes of students in class IV of SD Negeri 21 Bima City improved after using the CTL approach.

3.2.Discussion

The discussion of the results of this research is based on the results of the analysis of teacher activity and Students' activity assessments as well as students' learning outcomes. From the assessment data on teacher and student activities during the learning process, it can be seen that the teacher carried out the learning process using a Contextual Teaching Learning approach in accordance with what had been planned before the learning process. Although there are still small incidents that slightly disrupt the learning process and students also show that they have high motivation and enthusiasm in the learning process. This can be seen from students' activeness in carrying out assignments and solving problems when applying the Contextual Teaching Learning approach.

Based on the teacher and Students' activity observation sheet, it was found that the average percentage of teacher activity in cycle I was 76.18% in the good category. In cycle II it increased by 10.49% to 86.67% in the very good category. Meanwhile, the average percentage of Students' activity in cycle I was 72.34% in the good category. In cycle II it also increased by 15.14% to 87.48% in the very good category. Students' learning outcomes can be seen from the basic score, test results on the first and second daily tests after carrying out the learning process with Contextual Teaching Learning in cycles I and II. In general, or classical, it shows good results, namely 80.55% of students achieved completeness and only 19.44% did not complete it.

The above is because Contextual Teaching Learning is a learning process that aims to help students see the meaning in the material they study by connecting material subjects with the context in their daily lives, as stated by Abdullah AL-Dossary (2021). And also in accordance with the theory put forward by Silitonga (2020)that Contextual Teaching Learning is a learning concept that helps teachers relate learning material to students' real-world situations, and encourages students to make connections between the knowledge they have and its application in their daily lives.

The researcher realizes that there are still many students who make mistakes in the learning process and these mistakes are the researcher's weaknesses and deficiencies, namely in presenting and explaining the material they are still not very good, therefore students are still confused in calculating multiples and factors of numbers. Then, in class management in cycle I, the researcher still lacked control over the class so that many students were noisy and came in and out of the class. And researchers realize that researchers as teachers have limited abilities and experience. But to overcome these weaknesses and deficiencies, the researcher carried out an initiative, namely by providing reinforcement for students who can answer correctly the questions asked by the researcher and for students who are not noisy to motivate students who are less active to become active and students who are noisy so they don't make noise anymore. . From the description above, it can be concluded that learning with Contextual Teaching Learning can improve the mathematics learning outcomes of class IV students at SD Negeri 21 Kota Bima and can be applied by other teachers who want to provide innovation in classroom learning activities.

4. CONCLUSION

Based on the results of the research and discussions carried out, it can be concluded that the CTL approach can improve the mathematics learning outcomes of class IV students at SD Negeri 21 Kota Bima. This can be seen from:

1. Average percentage of teacher and Students' activity the average percentage of teacher activity during learning activities increased from 76.18% (Good) in cycle I to 86.67% (Very Good) in cycle II. And the average percentage of Students' activity during learning activities increased from 83.93% (Good) in cycle I to 92.86% (Very Good) in cycle II.

2. Average students' learning outcomes: In the Basic Score, the average student score was 69.73%, increased at UH I to 74.53% and increased again at UH II to 83.73%. Overall, there was an increase from Basic Score to UH II of 13.92 points (18.14%). And the percentage of students' classical completeness in the Basic Score was 38.88%, increasing at UH I to 52.77%, and increasing again at UH II to 80.55%. Overall, there was an increase of 41.67%.

5. ACKNOWLEDGEMENT

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