Implementation of the Team Quiz Learning Model to Improve Activity and Outcomes of Mathematics Learning in Elementary School Students

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1.   Abstract

The purposes of this study were: (1) to describe the application of the team quiz model, (2) to describe the increase in students' activeness and learning outcomes in mathematics, and (3) to analyze the constraints and solutions to the application of the team quiz model in increasing the activity and results in learning mathematics about fractions in school students base. This type of research is collaborative classroom action research carried out in two cycles with five meetings. Each meeting consists of planning, implementing, observing, and reflecting. The subjects of this study were teachers and students totaling 28 students. Data collection techniques used are observation, interviews, and tests. Data validity used source triangulation and technical triangulation while content validity used grids. Data analysis was carried out through data reduction, data presentation, and concluding. The results of this study indicate that: (1) the steps for implementing the team quiz model are: a) selecting learning topics; b) forming discussion groups; c) explanation of quiz rules; d) delivery of materials; e) conducting quizzes; (f) conclude the results of questions and answers and justification for students' wrong understanding; can increase the activity and student learning outcomes as evidenced by the increase in the average observation results of the activeness and completeness of student learning outcomes in cycle I, namely 85% and 89.28%, increased in cycle II, 92.85% and 100%. The conclusion from this study is that applying the team quiz model can increase the activity and learning outcomes of mathematics in elementary school students.

Keywords: *Quiz Team, Activeness, Mathematics Learning Outcomes*

2.   Introduction

Education is one important aspect of the development of a country. Good education in a country can produce quality human resources (Andhi Achmad, 2019:2). Law Number 20 of 2003 in article 3 concerning the National Education System explains that national education functions to develop capabilities and form dignified national character and civilization in the context of educating the nation's life, aiming at developing the potential of students to become human beings who believe and fear God Almighty. One, having a noble character, healthy, knowledgeable, capable, creative, independent, and being a democratic and responsible citizen.

According to (Marcella, 2018) education in Indonesia has the goal of developing humans to become complete human beings. Developing students to become complete human beings certainly not only increases abilities at the cognitive level but also affective and psychomotor. Analysis of student activity in the implementation of learning is one of the most important elements in determining the activity of a lesson. (Darimi, et al, 2018). According to (Putri, 2020) The learning process in the classroom will be successful if in practice the teacher understands well the roles, functions, and uses of the subjects he teaches. Therefore, the selection of various methods, strategies, approaches, and learning techniques is the main thing to improve learning outcomes (Nugraha, 2018).

According to (Yulia, 2019) Team Quiz (Group Quiz) is a strategy that intends to increase student activity in the learning process. The Team Quiz model develops students' social and cooperative skills, with student interaction and cooperation it will help students learn more comfortably (Angelina, 2020). The quiz team learning model makes students

actively look for solutions to problems that are their responsibility in quiz activities, learning is not boring and communicates the knowledge they have to others so that each student is expected to better understand concepts, master the material and be able to solve various problems (Tulsahida, 2018). According to (Hermanto, 2018) Team Quiz is a method in which students are trained to learn and have group discussions. In applying the Quiz Team learning model, students work together in groups to think about and understand problems, which starts with students reading the material (Andrini, 2021). The Quiz Team learning model is a question-and-answer activity between groups. Students can improve students' mathematical communication skills, where at the time of presentation it is hoped that students' oral communication skills can improve. However, when students compose questions to be worked on by other groups and take individual tests, it is hoped that students' written communication skills can improve (Anggraeni, 2021). (Parnayathi, 2020) also stated that the Quiz Team learning model is a learning model that can increase student activity and responsibility through asking and answering activities in a fun atmosphere. The steps for implementing the Quiz Team learning model are (1) choosing a learning topic; (2) forming discussion groups; (3) explanation of quiz rules; (4) delivery of material; (5) conducting quizzes; (6) concludes the results of questions and answers and justification for erroneous understandings (Achmad, 2019). So, it can be concluded that the Quiz Team learning model is an appropriate model for increasing student activity in the classroom by practicing group activities and playing with the steps of (1) selecting learning topics; (2) forming discussion groups; (3) explanation of quiz rules; (4) delivery of material; (5) conducting quizzes; (6) conclude the results of questions and answers and justification for erroneous understanding.

3.   Methods

3.1.   Participants and context

The subjects in this study were elementary school students who had high objectivity characteristics, had a high curiosity, enjoyed practicing, exploring, exploring, and children tended to like groups. Elementary school students totaling 28 students with details of 18 male students and 10 female students.

The research object that is the focus of research is the application of the quiz team learning model in increasing the activity and learning outcomes of elementary school participants.

3.2.   Material

The research instruments used included observation sheets of student activities, observation sheets of the application of the team quiz model in the learning process, and observation sheets of student learning outcomes.

3.3.   Data Collection and analysis

Data collection techniques in this study include test and non-test techniques, the description is as follows:

a. Test Technique

   This study uses a learning achievement test to measure the increase in learning outcomes in mathematics after applying the Quiz Team learning model to elementary school students

b. Non-Test Technique

   1) Observation

According to Safithry (2018: 50-54), there are 3 types of observation, namely: 1. Participatory observation, namely the observer is involved in the activities of the subject being observed. 2. Overt observation, that is, the observer stated frankly to the informant that he would make observations. 3. Structured observation, namely observation made by the observer if the focus of the observation is unclear.

Observations were made to observe the application of the Quiz Team learning model to learning mathematics and the activeness and learning outcomes of students. Researchers observed the learning process carried out by the teacher and the activities of students in learning activities using observation sheets.

2) Interview

According to Mardawani (2020: 50-52) In-depth interviews are a process of obtaining information or information for research purposes by face-to-face between interviewers and students using guidelines. Interviews were conducted with teachers and elementary school students regarding the application of the Team Quiz learning model which was carried out directly. Interviews were conducted after the learning process.

3.4. Ethical Considerations

In this research, students remain a top priority in learning and without prejudice to their right to receive scientific insights. Some of the rules that were applied during the research were consulted with the tutors and school principals so that this research put more emphasis on the character development of students in the classroom and was carried out transparently and without coercion. Each stage namely preparation, implementation, and evaluation is carried out smoothly and is expected to show significant improvement.

All organizers of this research are responsible for all criticism, suggestions, and input from readers after the publication of the article.

3.5.   Limitations to the Study

The scope of this research includes the learning environment of elementary school education units. This research is a form of improvement in class action that promotes an increase in the activity of students in the class so that they get maximum results in the learning process. Character, attitudes, cognitive abilities, and skills of students became the main focus that was learned and developed during this research.

4.   Results and Discussion

4.1   Results

In the implementation of cycle I and cycle II which consisted of 2 teacher meetings applying the Team Quiz model with the steps: (1) selecting learning topics, (2) forming discussion groups, (3) explaining quiz rules, (4) delivering material (5) implementation of quizzes, (6) concluding the results of questions and answers and justification of erroneous understandings.

4.1.1 *Action Results of Cycle I*

The results show that students can discuss and determine the spokesperson for the quiz that will be given to each team. Students have not written the conclusions of learning in student notebooks. Students began to be active in asking questions related to learning materials and in participating in the learning process. Some students who were initially silent and less active now dare to express their opinions, answer questions, and enthusiastically follow the flow of learning activities.

Based on the reflection activities at the end of learning, it was found that there were obstacles during the learning process. At meeting 1 the obstacles that emerged were: (1) teachers and students were still not familiar with the Team Quiz model; (2) students are still confused in understanding the contents of the LKPD given by the teacher; (3) not all students are active in discussions and are still dominated by clever students.

Based on the constraints at meeting 1, the researcher implemented a solution to improve learning at the next meeting with actions, namely: (1) students were guided by carrying out learning steps according to the lesson plan; (2) students are asked to pay attention to the teacher's explanation and are guided to understand the instructions for working on the LKPD; (2) the teacher motivates students to be active in discussions. At meeting 2 the obstacles that emerged were: (1) students paid little attention to the teacher's LKPD explanations; (2) students in making questions are not by learning indicators.

Based on the constraints at meeting 2, the researchers implemented solutions to improve learning with action, namely: (1) the teacher focused students' attention and reprimanded students who paid less attention; (2) the teacher provides a limit of questions according to the learning indicator points.

4.1.2 Results Action of Cycle II

In cycle II the planning and implementation stages took place with almost the same results as in cycle I. Some students showed symptoms of being active in the learning process better than before. Almost all students are active in the learning process. They

were able to ask questions, answer quizzes and carry out group study activities very smoothly.

Based on the reflection activities at the end of learning, it was found that there were obstacles during the learning process. At meeting 1 the obstacles that emerged were: (1) time management which took longer than the target. Based on the constraints at meeting 1, the researcher implemented a solution to re-evaluate the learning process to make it more effective and save time by reducing clapping. At meeting 2 the obstacles that emerged were: (1) students were in a hurry to immediately carry out the quiz, so they were less focused on learning. Based on the constraints at meeting 2, the researchers implemented solutions to improve learning with action, namely: (1) the teacher focused students' attention on delivering the material first.

4.1.3 Comparison of Results Between Cycles

Results of Application of the Quiz Team Learning Model in Cycles I and II

Table 4.1. Observation Results of the Application of the Quiz Team Learning Model Cycles I and II

	Cycle Data Resource	**Cycle**	
		I	**II**
Students	Percentage (%)	79,05	89,88

Results of Activeness and Learning Outcomes of Mathematics

Table 4.2. Observation Results of Student Activeness Cycles I and II

	Cycle	
	I	**II**
Meet Target (%)	85	92,85

Haven't Meet Target (%)	15	7,15

Table 4.3. Student Mathematics Learning Outcomes Cycles I and II

	Cycle I	Cycle II
Completed (%)	89,28	100
Not Completed (%)	10,71	0

4.2 Discussion

The important role of the teacher in carrying out and managing the educational process in Indonesia has a very important influence on the learning development of students. This is by the statement (Putri, 2020) that the learning process in the classroom will be successful if in practice the teacher understands well the roles, functions, and uses of the subjects he teaches. Therefore, the selection of various methods, strategies, approaches, and learning techniques is the main thing to improve learning outcomes (Nugraha, 2018). Learning by applying the Team Quiz Model is carried out for two. Each cycle consists of 2 meetings. The steps for implementing the Quiz Team learning model are (1) choosing a learning topic; (2) forming discussion groups; (3) explanation of quiz rules; (4) delivery of material; (5) conducting quizzes; (6) conclude the results of questions and answers and justification for erroneous understanding. The steps used by researchers refer to the opinion of Silberman (Achmad, 2019).

Team quiz is an important strategy that needs to be implemented by teachers to overcome problems that arise in class such as activeness, interest in learning, and

motivation. This is also by the statement (Yulia, 2019) Team Quiz (Group Quiz), which is a strategy that intends to increase student activity in the learning process. The Team Quiz model is also related to the affective and motor abilities of students as stated by (Angelina, 2020) that in developing students' social and collaborative abilities, the interaction and cooperation of students will help students learn more comfortably.

Based on the results of cycles I and II there was a significant increase both in terms of activity and learning outcomes. This is because the Team Quiz model is the right solution for developing student activity and learning outcomes. This is in line with the opinion which says that the quiz team learning model makes students actively seek solutions to problems that are their responsibility in quiz activities, learning is not boring and communicates the knowledge they have to others so that each student is expected to better understand concepts, master material and can solve various problems (Tulsahidah, 2018). A similar opinion was also confirmed by several other opinions such as (Hermanto, 2018) Team Quiz is a method where students are trained to study and have group discussions. Students work together in groups to think about and understand problems, which begins with students reading the material (Andrini, 2021). The Quiz Team learning model is a question-and-answer activity between groups. (Anggraeni, 2021). (Parnayathi, 2020) also stated that the Quiz Team learning model is a learning model that can increase student activity and responsibility through asking and answering activities in a fun atmosphere. Relevant research was also carried out by (Fadilah, 2019) which stated that action research in class XI IPS 2 SMAN 8 Kediri in the Economics subject on national income by applying the Quiz Team learning model could improve student learning outcomes. Then the research conducted (Sabil & Winarni, 2013) states that the quiz team type in learning mathematics

can improve students' mathematics learning outcomes.

5.   Conclusion

Based on the formulation of the problem, research results, and discussion of the application of the Quiz Team learning model to increase the activity and learning outcomes of mathematics in elementary school, it was concluded that the application of the Quiz Team learning model was able to increase the activity and learning outcomes of mathematics.

The success rate of using the Team Quiz model in cycle I reached 79.05% and cycle II reached 89.88%. The achievement level of student activity in cycle I reached 85% and in cycle II reached 92.85%. The level of achievement of student learning outcomes based on minimum competence (KKM) in cycle I reached 89.28% and cycle II reached 100%.

The application of the Quiz Team model has its own impact on students, namely:

1) Through group activities it can train students to work together, train self-confidence, and train students' speaking skills.

2) Through quiz activities students can develop the ability to express ideas or ideas so that students more easily remember the learning material that has been studied.

3) Through the process of implementing quizzes, students can practice skills in asking and answering, making questions that can later provoke students to think critically.

4) Through quiz activities students will be more motivated and more enthusiastic in learning because it creates a climate of academic competition among students which can build

motivation in learning.

The results of the research on the application of the Team Quiz model are proven to be able to increase student activity and learning outcomes, therefore this research is recommended for teachers and needs to be published in KKG activities, training, training, and other teacher professionalism activities so that it can be useful.

6.   Acknowledgement

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