Implementation of the Team Quiz Model in Natural and Social Sciences (IPAS) Learning to Improve Student Learning Outcomes

Andi Dewi Riang Tati[1], Ahmad Syawaluddin[2], Faidah Yusuf[3] Hartoto Hartoto[4]

[1,2,3,4] Makassar State University
[1] andi.dewi.riang@unm.ac.id, [2] unmsyawal@unm.ac.id,
[3] faidah.yusuf@unm.ac.id

Abstract. This research was conducted based on the problem of low student learning outcomes. The aim of this research is to improve student learning outcomes by implementing the Team Quiz learning model. This research uses a qualitative approach, and the type of research is classroom action research, which is carried out in two cycles and each cycle is held in two meetings. Each cycle includes planning, implementation, observation, and reflection stages. The subjects of this research were teachers and students of class IV SD No. 126 Pa'rappunganta Presidential Instruction 1. A total of 23 students and one teacher. The focus of this research includes student learning processes and outcomes by implementing the Team Quiz learning model to improve student learning outcomes. The data collection techniques used are observation, tests and documentation. In this research, the researcher acts as the implementer of the action, and the teacher as the observer. Data analysis techniques are descriptive qualitative and quantitative. The results of the research show that the application of the Team Quiz learning model in Natural and Social Sciences subjects with the achievement of completeness in cycle I learning outcomes is in the sufficient category, while the achievement of completeness in cycle II is in the good category. The conclusion in this research is that by implementing the Team Quiz learning model it can improve the learning process and outcomes for fourth grade students at SD No. 126 Presidential Instruction Pa'rappunganta 1 Takalar Regency.

Keywords: Team Quiz, IPAS, Learning Results

1 Introduction

Education is one way to make the nation's life more intelligent and at the same time spearheads the establishment of values or norms in society. Education aims to develop human reason considering that the function of education is to humanize humans. As explained in Law of the Republic of Indonesia no. 20 of 2003 concerning the National Education System Chapter I in Article I, that:

Education is a conscious and planned effort to demonstrate a learning atmosphere and learning process so that students actively develop their potential to have religious spiritual strength, self-control, personality, intelligence, noble morals, and the skills needed by themselves, society, nation and state.

Education is an important need for every human being. In educational activities there are two interrelated components, namely instructors (teachers) and students (students). As learners, students will show changes in behavior because of a learning activity. Through learning, students must be given the opportunity to develop the potential that is still hidden within them.

A good learning process is a learning process that allows students to actively involve themselves in the whole, both mentally and physically. Education without teaching will not be successful, because forming students who have intelligence, noble character and skills is not easy. This guidance and direction is obtained through teaching.

The teaching and learning process is a container in which there are teacher activities and student activities, which support each other to achieve a goal. Teaching activities carried out by teachers and learning activities carried out by students influence each other in facilitating the learning process.

Natural and Social Sciences (IPAS) lessons are one of the subjects studied in elementary school which includes science and social studies lessons. Science lessons are one of the important subjects because by studying science students are able to know the symptoms or facts that occur in nature (Panjaitan, 2017). Social studies lessons basically aim to prepare students as citizens who master the knowledge, skills, attitudes and values that are used as the ability to solve personal or social problems and have the ability to make decisions in social activities in order to become good citizens (Sapriya, 2012).

Based on the results of observations in class IV of SD No. 126 Presidential Instruction Pa'rappunganta 1 in February 2023, prospective researchers observed the process of implementing science and technology learning where it was seen that the use of learning models was not appropriate to the material. The learning carried out is not student-centered, this can be seen from the many activities carried out by teachers in teaching. Teachers also lack organization of students in learning. The impact of this problem is low student learning outcomes, students are only listeners and note takers of what the teacher says. There are still many students who do not have the courage to express opinions and students who ask or answer questions are monopolized by students with high abilities. This can be seen from the average score of the formative test results in science subjects in class IV, namely 70 with 11 students who have achieved learning completeness and 12 students who have not achieved learning completeness out of 23 total students with Learning Goal Achievement Criteria (KKTP), namely ≥ 75.

Based on the problems that occur, solutions are needed to improve student learning outcomes. The teacher as an educator has the duty to carry out the teaching and learning process. Teachers must have a learning model so that the teaching and learning process can take place optimally. The use of models in teaching and learning activities is very necessary to facilitate the learning process. Without a clear model,

the learning process will not be directed so that the learning objectives that have been set will not take place effectively and efficiently.

One learning model that can be used in science learning is the Team Quiz learning model. Team Quiz is a learning model with a learning group division system where the material is divided into sub-materials. Each team is responsible for preparing a short answer quiz and the other team spends time checking notes.

As previous researchers used the Team Quiz learning model, by Mutakin, D. (2022) with the title Increasing Student Activeness and Social Studies Learning Outcomes using the Team Quiz Method, which shows an increase in learning outcomes after using the Team Quiz learning model. Furthermore, research was conducted by Ahmad, F. (2022) with the title Improving Student Learning Outcomes in Integrated Thematic Learning Using the Team Quiz Model in Class IV. This research shows that there is an increase in the average score from cycle 1 to cycle 2, this can occur due to several things, namely learning that applies the Team Quiz model can change learning that was initially teacher-centered into student-centered learning, so that the learning model This is expected to improve student learning outcomes in learning.

Based on the background of the problem above, the researcher intends to conduct classroom action research with the title Application of the Team Quiz Learning Model in Natural and Social Sciences (IPAS) Learning on the Learning Outcomes of Class IV Students at Elementary School No. 126 Presidential Instruction Pa'rappunganta 1 Takalar Regency.

2 Literature Review

2.1 Theoritical Review

Learning Model

Joyce & Weil (Rusman, 2018: 144) A learning model is a plan that can be used to shape curriculum and learning in the long term, design learning materials, and guide the learning process both in class and outside of class.

The term learning model refers to a particular learning approach including its objectives, syntax, environment, and management system. Winaputra (Suyanto and Jihad, 2013: 134) The learning model is a conceptual framework that describes systematic procedures for organizing learning experiences to achieve certain learning goals and functions as a guide for learning designers and teachers in planning and implementing teaching and learning activities.

Arend (Mulyono, 2018: 89) A learning model is a conceptual framework that describes systematic procedures in organizing learning experiences in order to achieve learning competence."

The learning process cannot be separated from the teacher's ability to develop a learning model that is oriented towards increasing student intensity effectively in the learning process.

Based on this opinion, it can be concluded that the definition of a learning model is a plan in the teaching and learning process to achieve the learning objectives presented by the teacher which are arranged systematically.

Team Quiz Learning Model

Silberman (2007) states that: The Team Quiz Learning Model is an Active Learning learning model. This Team Quiz model was developed by Mel Silberman which functions to enliven the atmosphere in the learning process. This technique increases students' ability to take responsibility for what they learn in a fun and non-threatening way.

According to Zaini, Munthe and Aryani (2008): The Team Quiz learning model is a learning model for students that inspires a critical thinking pattern. Where later the students will be divided into small groups where each group member has the same duties and responsibilities. This learning model teaches students to study the material provided, discuss it and give direction to each other. That way, students will not only focus on the teacher, but they will be able to see and carry out experiments directly. So that students will better understand the material provided.

According to Sumarni (2018: 11), Team Quiz is a learning model with a learning group division system where the material is divided into sub-materials. Each team is responsible for preparing a short answer quiz and the other team spends time checking notes.

Based on the opinions of the experts above, it can be concluded that the Team Quiz learning model is a learning model that can liven up the learning atmosphere, make students more active in class, the learning atmosphere becomes more lively, fun, and they don't feel bored, tense and afraid during the process. Teaching and learning takes place so that students can understand the learning material presented.

Team Quiz Learning Steps

According to Silbermen (2016), the steps for implementing the Team Quiz learning method are as follows:

1) Choose a topic that can be presented in three segments.
2) Divide students into 3 teams.
3) Explain the lesson format and begin presenting the material, limiting it to 10 minutes or less.
4) Instruct team A to prepare a short answer quiz. The quiz should be ready in no more than 5 minutes. Teams B and C use this time to check their notes.
5) Team A gives a quiz to team B members. If team B cannot answer a question, team C answers it immediately.
6) Team A directs the next question to team member C, and repeats the process.
7) When the quiz is finished, continue with the second segment of your lesson, and designate team B as quizmasters.
8) After team B has completed the quiz, continue with the third segment of your lesson and designate team C as the quiz guide.

Advantages and disadvantages of the Team Quiz Learning Model
Trisuparni (Karno, 2014) there are several advantages and disadvantages in the Team Quiz learning model, namely as follows:
The advantages of the Team Quiz learning model are:
1) Can eliminate boredom in the learning process.
2) Building student creativity.
3) Achieving the meaning of learning through experience because it focuses on students as learning subjects.
4) Increase students' enthusiasm and interest in learning.
5) Empowering all students' potential and senses.
6) Students can learn to be tolerant towards their friends.

The disadvantages of the Team Quiz learning model are:
1) Requires strict control in conditioning the class when a commotion occurs.
2) Only certain students are considered smart in the group, namely they can answer questions. Because the game is required to be fast and provide opportunities for short discussions.

Based on the opinion above, the advantages of the Team Quiz learning model are that it can eliminate student boredom, build student creativity, increase enthusiasm and interest in learning, and students can learn to be tolerant. To overcome the shortcomings above, modifications are needed in making learning implementation plans where consideration is given to the presentation of quizzes at each meeting and educators can help control and condition if commotion occurs in class.

Understanding Learning Outcomes
Learning outcomes are patterns of actions, values, attitudes, appreciation, and skills, as a result of interactions in learning. Learning outcomes are used as a benchmark for identifying and evaluating learning objectives as a benchmark for measuring the success of the learning process.
Learning outcomes reflect the results of the learning process which shows the extent to which students, teachers, learning processes and educational institutions have achieved predetermined educational goals (Andriani & Rasto, 2019).
Learning outcomes are changes that result in humans changing their attitudes and behavior. (Purwanto, 2017: 45).
Suprijono (Thobroni, 2016:20) states that: "Learning outcomes are patterns of action, understandings, attitudes, appreciation and skills."
Student learning outcomes obtained through education will be able to compete in various activities of community life. This competitive situation requires quality human resources, namely skilled human resources.
Based on the description above, it can be concluded that learning outcomes are abilities obtained by students after going through the learning process as a benchmark for success or failure in learning by assessing the aspects of students' knowledge, attitudes and skills.

Factors that influence learning outcomes

The success of learning is greatly influenced by factors that support learning outcomes. There are ten factors that influence learning outcomes, namely intelligence, child readiness, child talent, willingness to learn, child interest, material presentation model, teacher personality and attitude, learning atmosphere, and teacher competence (Wulandari et al., 2014).

Susanto (2014) stated "learning outcomes achieved by students are influenced by two factors, namely internal and external factors" (p. 12). These two factors can be described as follows:

a)   Internal factors: Internal factors are factors originating from students that influence their learning abilities. Internal factors include intelligence, interest and attention, learning motivation, perseverance, attitudes and study habits, as well as physical condition and health.

b)   External factors: External factors that influence learning outcomes are family, school and society. Family circumstances influence student learning outcomes. Families with poor economic conditions, husband and wife quarreling, and parents lacking attention to their children.

Based on the description above, it can be concluded that the factors that influence student learning outcomes are internal factors which include intelligence, attention, motivation, interest, perseverance, and health conditions. Meanwhile, external factors include family, school and community.

Science Learning

Natural Sciences (IPA)

Science is one of the mandatory subjects taught since students enter elementary school. This is in accordance with what Susanto (2013) stated, namely that one of the main subjects in the education curriculum in Indonesia at the elementary school level is science. Natural science is mental activity and human practice to produce knowledge, while according to (Nugrahastuti et al., 2017).

Science is a scientific discipline that contains knowledge, which includes ways of working, ways of thinking, and solving problems related to nature in a systematic way.

Carin and Sund 1993 define science as knowledge that is systematic and regularly arranged, generally accepted (universal), and in the form of a collection of data resulting from observations and experiments. Referring to the definition of Carin and Sund (Asih Widi Wisudawati & Eka Sulistyowati, 2014) then IPA has four main elements, namely:

a)   Attitude, science creates curiosity about objects, natural phenomena, living things, and cause and effect relationships. IPA can be solved using open ended procedures.

b) Process, problem solving in natural sciences allows for coherent and systematic procedures through scientific methods. The scientific method includes formulating hypotheses, designing experiments or experiments, evaluating, measuring, and drawing conclusions.
c) Products, science produces products in the form of facts, principles, theories and laws.
d) Application, application of scientific methods and science concepts in everyday life.

Based on the description above, science lessons are one of the lessons that must be taught starting from elementary school, which is a scientific discipline that produces knowledge, ways of thinking, ways of solving problems, and seeks to arouse human interest in order to increase intelligence and understanding of nature and its contents. which is full of endless secrets.

Science Knowledge Objectives
Science as a subject has several goals. According to BNSP (2013) the objectives of science in elementary school include:

a) Growing belief in God Almighty over all His creation.
b) Develop a positive attitude, curiosity   to develop an understanding of science concepts that are useful in everyday life.
c) Develop process skills for solving problems and making decisions.
d) Raising awareness of the importance of preserving the environment, and as a preparation for higher levels of education.

From the opinion above, it can be concluded that this indicates that science learning in elementary school is very important. Because science concepts are useful and can be applied in everyday life, namely, to investigate the natural environment, solve problems and make decisions.

Social Sciences (IPS)
Social Sciences (IPS) taught in elementary school consists of two main study materials, namely: Social knowledge and history. Social science study materials include anthropology, sociology, geography, economics and state administration. Historical study material covers the development of Indonesian society from the past to the present.
Social studies and moral education must be instilled in students from an early age, so that they can be used as capital to become good citizens.
Social studies lessons basically aim to prepare students as citizens who master the knowledge, skills, attitudes and values that are used as the ability to solve personal or social problems and have the ability to make decisions in social activities in order to become good citizens (Sapriya, 2012).
According to Ibid (2010), the principles of SD/MI social studies learning developed in IPS are based on the following principles:

a) Providing opportunities for students and encouraging them to be actively involved in the learning process both mentally and psychomotorically, effectively and interactively.
b) Enable students to determine their own concepts, principles and interaction techniques with their environment.
c) Has relevance to everyday life.
d) Positioning teachers as learning facilitators.
e) Provides a sense of security and joy for students, so they can study comfortably and stimulate creative thinking.

Based on the opinion above, it can be concluded that social studies lessons play a very important role at the elementary school level, where students as citizens are enabled to master the knowledge, skills, attitudes and values that are used as the ability to solve problems and also students are encouraged to determine their own concepts, principles, and interaction techniques with the environment.

IPAS Scope
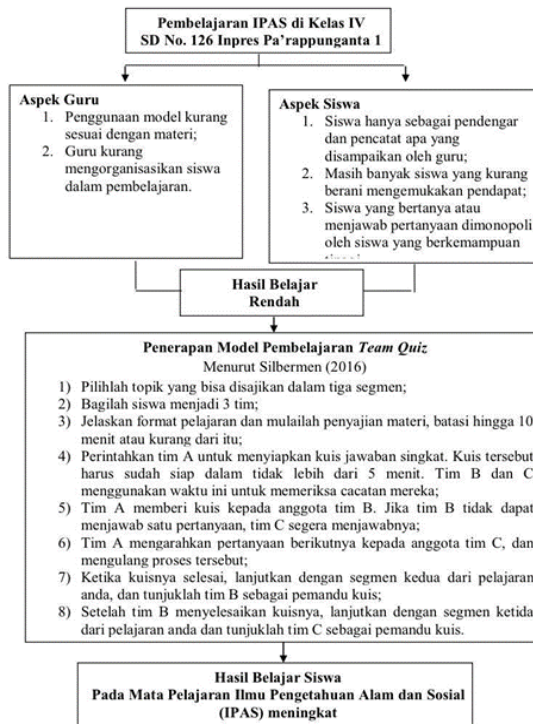The scope of IPAS subjects includes the following:

a) People, places, and environments.
b) Time, continuity, and change.
c) Social and cultural systems.
d) Economic behavior and welfare.

2.2   Framework of Thought

Low science learning outcomes in class IV SD No. 126 Presidential Instruction Pa'rappunganta 1 Takalar Regency is because many class IV students still have difficulty understanding science and technology learning. One of the weaknesses of this learning is the limited learning activities of students and the very dominant role of the teacher in the learning process.

From the teacher's aspect, namely the teacher uses a model that is not appropriate to the material, the teacher does not organize students enough in learning, and the teacher also does not use a variety of models in learning. From the student aspect, namely students are only listeners and note-takers of what the teacher says, there are still many students who lack the courage to express opinions, and students who ask or answer questions are monopolized by students with high abilities.

Seeing the problems that occur, solutions are needed to optimize student learning outcomes. One action that can be taken is implementing a learning model that can motivate students to improve their learning outcomes. The learning model that can be applied is the Team Quiz learning model. This model can involve students actively in learning. The teacher as a facilitator provides the material, then it is given to the students to process the material that has been given as a team, so the flow of the thinking framework is as follows:

Pembelajaran IPAS di Kelas IV
SD No. 126 Inpres Pa'rappunganta 1

Aspek Guru
1. Penggunaan model kurang sesuai dengan materi;
2. Guru kurang mengorganisasikan siswa dalam pembelajaran.

Aspek Siswa
1. Siswa hanya sebagai pendengar dan pencatat apa yang disampaikan oleh guru;
2. Masih banyak siswa yang kurang berani mengemukakan pendapat;
3. Siswa yang bertanya atau menjawab pertanyaan dimonopoli oleh siswa yang berkemampuan

Hasil Belajar Rendah

Penerapan Model Pembelajaran *Team Quiz*
Menurut Silbermen (2016)
1) Pilihlah topik yang bisa disajikan dalam tiga segmen;
2) Bagilah siswa menjadi 3 tim;
3) Jelaskan format pelajaran dan mulailah penyajian materi, batasi hingga 10 menit atau kurang dari itu;
4) Perintahkan tim A untuk menyiapkan kuis jawaban singkat. Kuis tersebut harus sudah siap dalam tidak lebih dari 5 menit. Tim B dan C menggunakan waktu ini untuk memeriksa cacatan mereka;
5) Tim A memberi kuis kepada anggota tim B. Jika tim B tidak dapat menjawab satu pertanyaan, tim C segera menjawabnya;
6) Tim A mengarahkan pertanyaan berikutnya kepada anggota tim C, dan mengulang proses tersebut;
7) Ketika kuisnya selesai, lanjutkan dengan segmen kedua dari pelajaran anda, dan tunjuklah tim B sebagai pemandu kuis;
8) Setelah tim B menyelesaikan kuisnya, lanjutkan dengan segmen ketida dari pelajaran anda dan tunjuklah tim C sebagai pemandu kuis.

Hasil Belajar Siswa
Pada Mata Pelajaran Ilmu Pengetahuan Alam dan Sosial
(IPAS) meningkat

2.3 Action Hypothesis

Based on the problem formulation and literature review, the action hypothesis is that if the Team Quiz learning model is applied in learning, then student learning outcomes in class IV science and science subjects at SD No. 126 Presidential Instruction Pa'rappunganta 1 will increase.

3 Method

3.1 Types of Research

This type of research is classroom action research (PTK) with a qualitative approach. Classroom Action Research (CAR) is research that emphasizes learning outcomes. PTK is carried out in several steps, namely planning, implementation, observation and reflection.

3.2   Research Subject

The subjects in this classroom action research were teachers and students of class IV SD No. 126 Pa'rappunganta 1 Presidential Instruction, totaling 23 students and 1 class teacher. The aim of this research is to improve students' abilities in learning Social Sciences so that student learning outcomes increase.

3.3   Research Procedure

This research uses a model developed by Arikunto (2010: 137). The research procedure was carried out in two cycles, each cycle consisting of 4 activity stages, namely: planning, implementation, observation and reflection. These four stages are interrelated with the implementation of Classroom Action Research (PTK).
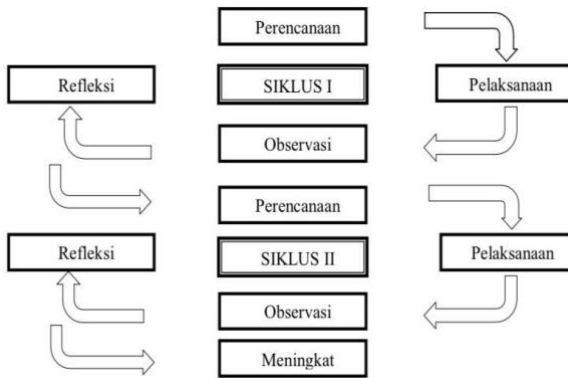
Figure 2. Classroom action research cycle scheme by Kemmis and Tanggart
(Arikunto, Suhardjono, and Suparno, 2015, p. 4)

Pelaksanaan penelitian tindakan kelas ini dilaksanakan dalam dua siklus. Tiap siklus terdiri dari beberapa tahap kegiatan sesuai hakikat penelitian. Kegiatan pada siklus II merupakan pengulangan dan perbaikan dari siklus I.

3.4   Data Collection Technique

The data collection techniques and procedures carried out in this research are as follows:
1) Observation, namely observing student participation and activity in the learning process through the team quiz learning model.
2) Test, namely the researcher carries out a written test which is carried out after carrying out the action. The test results will be used as a measuring tool for the achievement of the research objectives by comparing the evaluation results of class IV students in the science subject.
3) Documentation, namely researchers use documentation techniques to obtain data on a list of evaluation results in students' science subjects.

3.5   Data Analysis Technique

The data analysis techniques used are descriptive qualitative and quantitative techniques. Qualitative research data was obtained from observations, which were carried out by analyzing the results of observations related to the team quiz learning model and descriptive quantitative techniques were used to assess student learning outcomes in cycle I and cycle II. In this case, descriptive quantitative analysis is used to find the average value and percentage of student learning success and then compare cycles I and II.

Table 1. Learning Outcome Achievement Criteria

Nilai	Kategori
90-100	Sangat Baik
75-89	Baik
65-74	Cukup
45-64	Kurang

4   Results and Discussion

4.1.   Research Result

Researchers conducted research at SD No. 126 Presidential Instruction Pa'rappunganta 1 Kab. Takalar from May 15 2023 to June 15 2023. In this classroom action research the researcher carried out two cycles with four meetings. In this study, researchers used the Team Quiz learning model to improve the learning outcomes of fourth grade students at SD No. 126 Presidential Instruction Pa'rappunganta 1 Kab. Takalar.

Cycle 1

a.   Cycle I planning
The planning stage was carried out by the researcher together with the teacher, reviewing the curriculum and creating teaching modules, then determining the learning implementation plan for each meeting, preparing the tools and materials that would be needed for implementing the Team Quiz learning model, compiling group worksheets according to the Social Science learning material, preparing evaluation test questions. by referring to learning indicators, and preparing teacher and student observation sheets.

b.   Implementation of cycle I

Implementation of science and science learning in class IV SD No. 126 Presidential Instruction Pa'rappunganta 1 Takalar Regency in cycle I was held in two meetings. The first meeting was held on May 16 2023 and the second meeting was held on May 17 2023, which was attended by 23 class IV students at SD No. 126 Presidential Instruction Pa'rappunganta 1 Takalar Regency. In carrying out the action, the researcher acted as a teacher and the class IV teacher acted as an observer. The actions taken in implementing the Team Quiz learning model are:

First Cycle I Meeting

Meeting I was held on Tuesday 16 May 2023 at 7.30-8.40 WITA with a time allocation of 2×35 minutes to discuss local wisdom. At this meeting, there were two observers. At the beginning of the meeting the teacher explains the research being carried out to all students. The research began by changing the arrangement of benches in groups.

The initial activity begins with the teacher giving a perception, then continues by conveying the learning objectives after that divides the students into three groups. Next, the teacher explains the learning scenario and then delivers material about local wisdom. Students actively participate in explaining the material, in terms of contributing ideas and answering questions from the teacher.

After the teacher explains the material, the teacher gives each group $\pm$ 15 minutes to discuss, ask questions, and study the material determined by the teacher. Students make 3-4 questions in the form of essay questions. After that, a team quiz match was held, but before the quiz match started the teacher explained the rules of the game first.

The teacher explains that the team that can answer the question correctly will get 10 points, the team that answers incorrectly will have 5 points deducted, while the team that is asked the question and can answer correctly will have their score added 15 points. This quiz consists of three segments. The quiz begins with the first segment, namely team A as the questioning team. Team A gives questions to team B, if team B cannot answer the question, then the question is thrown to team C. After the first question is read then proceed to the second question, Team A again gives questions to team C, if team C cannot answer then the question thrown to team B. After the first segment ended, the second segment continued, namely team B as the questioning team. Team B asks questions to team C, if team C cannot answer the question, then the question is thrown to team A, and repeats itself until it reaches segment three with team C as the asking team.

When the quiz is finished, the teacher distributes the LKPD to each group after which the teacher explains the instructions for working on the LKPD. The time given to work on the LKPD is 10 minutes. After the LKPD is collected the teacher gives an evaluation to each student with a processing time of $\pm$ 10 minutes. After the students have finished doing the evaluation, the teacher together with the students concludes what they have learned, the teacher also does not forget to give appreciation to the team that won the quiz and the team that was the most orderly during the quiz.

Meeting II Cycle I
Meeting II will be held on Wednesday 17 May 2023 at 7.30-8.40 WITA with a time allocation of 2 × 35 minutes to discuss local wisdom. At this meeting, there were two observers. The initial activity begins with the teacher preparing students to study, namely praying, and taking attendance. The teacher provides perceptions in the form of questions regarding the previous material, the teacher then continues by conveying the learning objectives orally and in writing via the whiteboard.

This activity begins by dividing students into three groups. Next, the teacher delivered material about local wisdom. After the teacher explains the material, the teacher gives each group ± 15 minutes to discuss, ask questions, and study the material determined by the teacher. Students make 3-4 questions in the form of essay questions. After that, a team quiz match was held, but before the quiz match started the teacher explained the rules of the game first.

The quiz begins with the first segment, namely team A as the questioning team. Team A gives questions to team B, if team B cannot answer the question, then the question is thrown to team C. After the first question is read then proceed to the second question, Team A again gives questions to team C, if team C cannot answer then the question thrown to team B. After the first segment ended, the second segment continued, namely team B as the questioning team. And the third segment, Team C as the questioner.

When the quiz is finished, the teacher distributes LKPD to each group. After that, the teacher explains the instructions for working on the LKPD. The time given to work on the LKPD is 10 minutes. When the LKPD has been collected the teacher gives an evaluation test. After all students have finished taking the evaluation test, the teacher together with the students concludes what they have learned, the teacher also does not forget to give appreciation to the team that won the quiz and the team that was the most orderly during the quiz.

c.   Observation

Data from Observation of Teacher Activities
Observation results of teacher activities include aspects of implementing the team quiz learning model. The observation sheet uses a rating scale, namely Good (B), sufficient (C) and Poor (K). In cycle I, meeting 1 was in the sufficient category with an achievement percentage of 47.61%. There are three aspects in the sufficient category (C), namely, in selecting material, explaining material and when guiding students to work on LKPD. Aspects of teacher activity that are in the poor category (K) consist of four aspects, namely: grouping students heterogeneously, controlling the course of quizzes, when giving evaluations, and when directing students to conclude the material. One indicator that each of these aspects was not carried out included: when explaining that the teacher did not use learning media, during the quiz the teacher forgot to give students time to answer the questions.

The results of observations of teacher teaching activities in cycle I, meeting II was in the good category, namely 71.42%. There was one aspect in the good category (B), namely in terms of material selection, while the aspect in the sufficient category (C)

was when grouping students. heterogeneously, explaining the material, controlling the course of quizzes, guiding students in working on LKPD, providing evaluations, and when directing students in concluding the material.

Based on data from observations of teacher teaching activities in cycle I (meetings I and II) using the Team Quiz learning model, it can be displayed in the following table:

Table 2. Observation Results of Cycle I Teacher Teaching Activities

Cyycle I	Total score earned	Score Maximum	Percentage	Category
Meeting I	10	21	47,61%	Enough
Meeting II	15	21	71,42%	Good

Based on table 1 above, it can be concluded that the results of teacher teaching observations in cycle I above, at meeting I obtained an overall score of 10 out of a maximum score of 21 with a percentage of 47.61% which was categorized as sufficient (C), while meeting II obtained an overall namely 15 scores out of a maximum score of 21 with a percentage of 71.4% which is categorized as good (B).

Data from Observation of Student Learning Activities

Observation of learning activities of fourth grade students at SD No. 126 Presidential Instruction Pa'rappunganta 1 Takalar Regency through the implementation of the team quiz learning model using a rating scale of very good (SB), good (B), sufficient (C), and poor (K).

The further explanation regarding the results of observations of student learning activities in cycle I, meeting I for each aspect, is as follows:

a) Listening to the teacher's explanation, in this aspect the teacher explains the material and students listen to the teacher's explanation. In this aspect, students pay less attention to the teacher's explanation and there are only 13 students who are in the good category when the teacher explains the material.

b) When creating questions for the quiz, 1 group created four questions and 2 groups only created 2 questions.

c) Obeying the rules of the quiz team game, in this aspect the teacher explained the rules of the quiz team game and only 3 students did not really pay attention to the teacher's explanation.

d) In terms of creativity in making questions for quizzes, there are several questions that are not understood by other students.

e) Judging from the activeness of the students, almost every team that was asked a question by another team could not answer the question.

f) When working on the LKPD, only 6 students occasionally asked questions.

g) Carrying out evaluations, in this aspect as a whole the students carried out the evaluation given by the teacher but there were only a few students who answered the questions according to the questions.

h)   Summing up the learning material, there were 7 students who concluded the material according to the teacher's directions and only 1 student concluded the material by reading small notes.

Further explanation regarding the results of observations of student learning activities in cycle I, meeting II for each aspect, is as follows:

a)   Listening to the teacher's explanation, in this aspect the teacher explains the material and students listen to the teacher's explanation. In this aspect, 17 students were in the good category when the teacher explained the material. Some students occasionally ask questions while listening to the teacher's explanation.

b)   When creating questions for the quiz, there were 2 groups that created 3 questions and 1 group created 4 questions.

c)   Obeying the rules of the quiz team game, in this aspect the teacher explained the rules of the quiz team game and there were 2 students who did not really pay attention to the teacher's explanation.

d)   In terms of creativity in making questions for quizzes, there are several questions that are not understood by other students.

e)   Judging from the activeness of the students, almost every team that was asked a question by another team could not answer the question.

f)   While working on the LKPD there were 4 students who occasionally asked questions.

g)   Doing evaluation tests, in this aspect students as a whole take evaluation tests given by the teacher. And almost all students answered the questions according to the questions.

h)   Summing up the learning material, there were 7 students who concluded the material according to the teacher's directions and only 2 students concluded the material by reading small notes.

Table 3. Observation Results of Cycle 1 Student Learning Activities

Cycle I	Total score Acquisition	Score Maximum	Percentage	Category
Meeting I				
Team A	10	24	41,66%	Enough
Team B	11	24	45,83%	Enough
Team C	10	24	41,66%	Enough
Meeting II				
Team A	15	24	62,5%	Enough
Team B	15	24	62,5%	Enough
Team C	17	24	70,83%	Good

Based on table 3 above, it can be concluded that the presentation of the results of observations of student learning activities in cycle I above, meeting I obtained an overall score of 24, the maximum score where Team A obtained 10 scores with a percentage of 41.66% which was stated in the sufficient category (C), Team B

obtained 11 scores with a percentage of 45.83% which was stated in the sufficient category (C), and Team C obtained 10 scores with a percentage of 41.66% which was stated in the sufficient category (C). Meanwhile, in the second meeting, Team A obtained 15 scores out of a maximum score of 24 with a percentage of 62.5% stated in the sufficient category (C), Team B obtained 15 scores with a percentage of 62.5% stated in the sufficient category (C), and Team C obtained 17 scores with a percentage of 70.83% were declared in the good category (B).

Description of Cycle I Student Learning Outcomes
The student learning outcomes for cycle I, meeting I and meeting II, are based on data obtained from 23 class IV students who took the evaluation test. In the first meeting there were 7 students who got a score of 75-89 in the good category (B) or 30%, 9 students who got a score of 65-74 in the sufficient category (C) or 40%, 7 students who got a score of 45-64 in the poor category (K) or 30%. Meanwhile, at the second meeting, 1 student got a score of 90-100 in the very good category (SB) or 4%, 10 students got a score of 75-89 in the good category (B), 9 students got a score of 65-74 in the fair category. (C), and 3 students got grades 45-64 in the poor category (K). The results of student learning tests in cycle I can be seen as follows:

Table 4 .Data on Frequency and Percentage of Student Learning Outcome Test Scores Cycle I Meeting I

Score	Category	Frequency	Percentage%
90-100	Very Good	-	-
75-89	Good	7	30%
65-74	Enough	9	40%
46-64	Not Enough	7	30%
Amount		**23**	**100**

Table 5. Data on Frequency and Percentage of Student Learning Outcome Test Scores Cycle I Meeting II

Score	Category	Frequency	Percentage%
90-100	Very Good	1	4%
75-89	Good	10	43%
65-74	Enough	9	40%
46-64	Not Enough	3	13%
Amount		**23**	**100**

As for the achievement of learning outcomes for fourth grade students at SD No. 126 Presidential Instruction Pa'rappunganta 1 Takalar Regency can be seen in the following table.

Table 6. Data on Frequency and Percentage of Completion of Student Learning Outcomes
Cycle I Am meeting I

Score	Category	Frequency	Percentage
75-100	Achieved	7	30%
0-74	Not achieved	16	70%
Amount		**23**	**100**

Table 7. Data on Frequency and Percentage of Completion of Student Learning Outcomes
Cycle I Meeting II

Score	Category	Frequency	Percentage
75-100	Achieved	11	48%
0-74	Not achieved	12	52%
Amount		**23**	**100**

Based on the data in tables 6 and 7 above at meeting I, it was stated that of the 23 students, 7 students with a percentage of 30% were in the achieved category and 16 students with a percentage of 70% were in the not achieved category. Meanwhile, at meeting II, 11 students with a percentage of 48% were in the achieved category, 12 students with a percentage of 52% were in the not achieved category. This shows that in cycle I, the achievement of student learning outcomes in science subjects has not been achieved because the number of students whose learning outcomes were achieved was less than 80%. Based on the success indicators, it suggests that if 80% of the total number of students achieve the KKTP, namely >75, then in this case it is not considered classically achieved. Thus the learning objectives have not been achieved so that learning can be continued in the next cycle.

The frequency data table and percentage of completeness of cycle I student learning outcomes can be depicted in the following histogram:
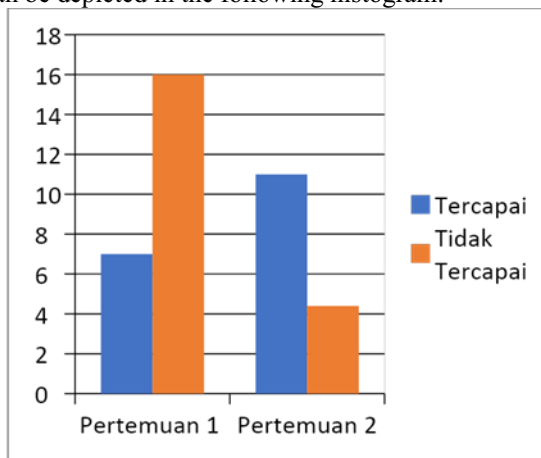
Figure 3: Histogram of frequency data and percentage of completeness of cycle I student learning outcomes.

d.   Reflection

Based on the results of observations with teacher activities in teaching and student activities through the application of the team quiz learning model to fourth grade students at SD No. 126 Presidential Instruction Pa'rappunganta 1 Takalar Regency, as well as analysis and student learning results from meeting I and meeting II found several things that needed to be improved in the quality of implementation, including:

1)   At the first meeting the researcher did not master the material and the team quiz model, so the delivery to students was not optimal. So researchers must study and master the material and team quiz learning model more so that it can be optimal in the future.
2)   The time given during the quiz to answer questions is quite long, so there are still questions that have not been finished reading because the time for the quiz has finished.
3)   Researchers lacked monitoring in the implementation of discussions.

Based on the description of the reflection stage, the follow-up actions that can be taken to improve cycle I learn are:

a)   It is better for teachers to divide students heterogeneously so that they can socialize and increase closeness between friends.
b)   Teachers should often monitor discussions in each group to find out whether there are students who still do not understand the assignment given.
c)   Provide a duration of time to answer questions given by the opposing team. The time given to answer should be 30 seconds.

Based on the results of the teacher's observations at meeting I it was in the sufficient category (C), while at meeting II it was in the good category (B). Meanwhile, in student observations, at meeting I Team A, Team B and Team C were in the sufficient category (C), at meeting II Team A and Team B were in the adequate category and Team C was in the good category (B). The test results in cycle I showed that of the 23 students who were research subjects, the level of achievement of student learning outcomes had not reached the category. Where the percentage at the first meeting was only 30% reaching the category with a frequency of 7 students achieving it and 16 students not achieving it, while at the second meeting it reached 48% with 11 students reaching the category and 12 students not yet reaching the category.
Based on the description above, it can be concluded that the research carried out in cycle I has not been achieved. Therefore, researchers continued research in cycle II.

Cycle II

The learning activities carried out in science subjects by applying the team quiz learning model are the result of reflection in cycle I, the implementation phase of cycle II can be described as follows:

a.   Planning
Activities carried out at the planning stage of cycle II, namely researchers together with teachers analyzing the curriculum and teaching modules then determining the

learning implementation plan for each meeting, preparing learning scenarios for implementation in implementing the team quiz learning model, compiling worksheets according to the science learning material, preparing questions evaluation test questions to determine the level of mastery and development of students in understanding the material being taught, and preparing teacher and student observation sheets.

b.   Implementation
Implementation of science and science learning in class IV SD No. 126 Presidential Instruction Pa'rappunganta 1 Takalar Regency in cycle II was held in two meetings. The first meeting was held on 23 May 2023 and the second meeting was held on 24 May 2023, which was attended by 23 class IV students at SD No. 126 Presidential Instruction Pa'rappunganta 1 Takalar Regency. The actions taken in implementing the team quiz learning model are:

Cycle II Meeting First Meeting
Meeting I was held on Tuesday 23 May 2023 at 7.30-8.40 WITA with a time allocation of 2×35 minutes to discuss Indonesia's cultural diversity. At this meeting, there were two observers.
The initial activity begins with the teacher preparing students to learn by praying and taking attendance, the teacher gives a perception as the first step in learning, then continues by conveying the learning objectives after that divides the students into three groups. Next, the teacher explained the learning scenario and then delivered material about Indonesian cultural diversity. Students actively participate in explaining the material, in terms of contributing ideas and answering questions from the teacher.
After the teacher explains the material, the teacher gives each group ± 15 minutes to discuss, ask questions, and study the material determined by the teacher. Students make 3-4 questions in the form of essay questions. After that, a team quiz match was held, but before the quiz match started the teacher explained the rules of the game first. The teacher explains that the team that can answer the question correctly will get 10 points, the team that answers incorrectly will have 5 points deducted, while the team that is asked the question and can answer correctly will have their score added 15 points. This quiz consists of three segments. The quiz begins with the first segment, namely team A as the questioning team. Team A gives questions to team B, if team B can answer the question, then the question is thrown to team C. After the first question is read then move on to the second question, Team A again gives questions to team C, if team C cannot answer then the question is thrown to team B. After the first segment ends, the second segment continues, namely team B as the questioning team. Team B asks questions to team C, if team C cannot answer the question, then the question is thrown to team A, and repeats itself until it reaches segment three with team C as the asking team.
When the quiz is finished, the teacher distributes the LKPD to each group after which the teacher explains the instructions for working on the LKPD. The time given to

work on the LKPD is 10 minutes. After the LKPD is collected, the teacher gives an evaluation to each student with a processing time of ± 10 minutes.

Cycle II Meeting II Meeting
Meeting II was held on Wednesday 24 May 2023 at 7.30-8.40 WITA with a time allocation of 2 × 35 minutes to discuss Indonesia's cultural diversity. At this meeting, there were two observers. The initial activity begins with the teacher preparing students to study, namely praying and taking attendance. The teacher provides perceptions in the form of questions regarding the previous material, the teacher then continues by conveying the learning objectives orally and in writing via the whiteboard.

This activity begins by dividing students into three groups. Next, the teacher delivered material about Indonesia's cultural diversity. The teacher then held a quiz competition consisting of three segments. The quiz begins with the first segment, namely team A as the questioning team. Team A gives questions to team B, if team B cannot answer the question, then the question is thrown to team C. After the first question is read then proceed to the second question, Team A again gives questions to team C, if team C cannot answer then the question thrown to team B. After the first segment ended, the second segment continued, namely team B as the questioner team up to the third segment with team C as the questioner.

When the quiz is finished, the teacher distributes the LKPD to each student to work on individually, after which the teacher explains the instructions for working on the LKPD. The time given to work on the LKPD is 10 minutes. When the LKPD has been collected the teacher gives an evaluation test with a processing time of ±10 minutes. After all students have finished taking the evaluation test, the teacher together with the students concludes what they have learned, the teacher also does not forget to give appreciation to the team that won the quiz and the team that was the most orderly during the quiz.

c.   Observation

Data from Observation of Teacher Activities
The results of observations of teacher activities in cycle II, meeting I, contained aspects of implementing the team quiz learning model which had increased, namely in the good category (B), the percentage of achievement was 81%. There are 3 aspects in the good category (B), namely; selection of material, when the teacher controls the course of the quiz, and when directing students to conclude the material. Aspects of teacher activity that are in the sufficient category (C) consist of four aspects, namely: heterogeneous grouping of students, explanation of material, guiding students to work on LKPD, and giving evaluation tests.

The results of observations of teacher teaching activities in the second cycle of the second meeting were in the good category, namely 90.47%. There are five aspects that are in the good category (B), namely: in terms of selecting material, grouping students heterogeneously, controlling the course of quizzes, guiding students when working on LKPD, and when directing students to conclude the lesson material.

Meanwhile, there are two aspects in the sufficient category (C), namely: when explaining the material and giving evaluation tests.

Based on data from observations of teacher teaching activities in cycle II (meetings I and II) using the Team Quiz learning model, it can be displayed in the following table:

Table 8. Observation Results of Teacher Teaching Activities in Cycle II

Cycle II	Total score Acquisition	Score Maximum	Percentage	Category
Meeting I	17	21	81%	Good
Meeting II	19	21	90.47%	Good

Based on table 8 above, it can be concluded that the results of teacher teaching observations in cycle II above, meeting I obtained an overall score of 17 scores out of a maximum score of 21 with a percentage of 81% which was categorized as good (B), and meeting II obtained an overall score of 19 from a maximum score of 21 with a percentage of 90.47% which is categorized as good (B).

Data from Observation of Student Activities
Observation of learning activities of fourth grade students at SD No. 126 Presidential Instruction Pa'rappunganta 1 Takalar Regency through the implementation of the team quiz learning model using a rating scale of very good (SB), good (B), sufficient (C), and poor (K). The results of student observations in cycle II of the first meeting of TEAM A were in the good category with an achievement percentage of 75%. TEAM B is in the good category with an achievement percentage of 75%, TEAM C is in the good category with an achievement percentage of 83.33%.
The results of student observations at the second meeting of cycle II experienced an increase where TEAM A was in the good category with an achievement percentage of 87.5%, TEAM B was in the good category with an achievement percentage of 79.16%, TEAM C was in the good category with an achievement percentage of 91, 66%.
Based on data from observations of teacher teaching activities in cycle I (meetings I and II) using the Team Quiz learning model, it can be displayed in the following table:

Table 9. Observation Results of Cycle II Student Learning Activities

Cycle II	Total score Acquisition	Maximum Score	Percentage	Category
Meeting I				
Team A	18	24	75%	Good
Team B	18	24	75%	Good
Team C	20	24	83.33%	Good

Meeting II				
Team A	21	24	87.5%	Good
Team B	19	24	79.16%	Good
Team C	22	24	91.66%	Good

Description of Cycle II Student Learning Outcomes

The learning outcomes of cycle II students from meeting I and meeting II are based on data obtained from 23 class IV students who took the evaluation test. In the first meeting, there was 1 student who got a score of 90-100 in the very good category (SB) or 4%, 19 students who got a score of 75-89 in the good category (B) or 83%, and 3 students who got a score of 65-74 with sufficient category (C) or 13%. Meanwhile, at the second meeting, 3 students got a score of 90-100 in the very good category (SB) or 13%, 18 students got a score of 75-89 in the good category (B) or 78%, and 2 students got a score of 65- 74 with sufficient category (C) or 9%. The results of student learning tests in cycle II can be seen as follows:

Table 10. Data on Frequency and Percentage of Student Learning Outcome Test Scores Cycle II Meeting I

Score	Category	Frequency	Percentage%
90-100	Very good	1	4%
75-89	Good	19	83%
65-74	Enough	3	13%
46-64	Not enough	-	-
Amount		23	100

Table 11. Data on Frequency and Percentage of Student Learning Outcome Test Scores Cycle II Meeting II

Score	Category	Frequency	Percentage%
90-100	Very good	3	13%
75-89	Good	18	78%
65-74	Enough	2	9%
46-64	Not enough	-	-
Amount		23	100

As for the achievement of learning outcomes for fourth grade students at SD No. 126 Presidential Instruction Pa'rappunganta 1 Takalar Regency can be seen in the following table:

Table 12. Data on Frequency and Percentage of Completion of Student Learning Outcomes Cycle II Meeting I

Score	Category	Frequency	Percentage
75-100	Achieved	20	87%
0-74	Not achieved	3	13%
Amount		23	100

Table 13. Data on Frequency and Percentage of Completion of Student Learning Outcomes Cycle II Meeting II

Score	Category	Frequency	Percentage
75-100	Achieved	21	91%
0-74	Not achieved	2	9%
Amount		23	100

Based on the data in tables 12 and 13 above at meeting I, it was stated that out of 23 students, 20 students with a percentage of 87% were in the achieved category and 3 students with a percentage of 13% were in the not achieved category. Meanwhile, at meeting II, 21 students with a percentage of 91% were in the achieved category, 2 students with a percentage of 9% were in the not achieved category. This shows that in cycle II, the achievement of student learning outcomes in the science and science subject has been achieved classically because the number of students achieved has been more than 80% of students who obtained a score according to the KKTP, namely >75 in the science and science subject by applying the team quiz learning model. classic.

The frequency data table and percentage of completeness of cycle II student learning outcomes can be depicted in the following histogram:
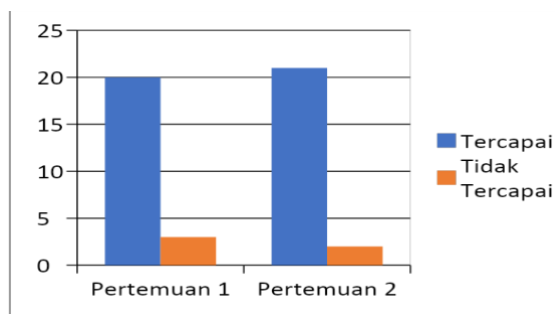
Figure 4. Histogram of frequency data and percentage of completeness of cycle II student learning outcomes.

d.   Reflection

The implementation of learning in cycle II is focused on increasing teacher and student activity so that it is hoped that student learning outcomes can also increase. The results of the analysis and reflection from the implementation of this action are:
1) Teachers have improved the implementation of learning according to the learning module created by applying the team quiz learning model.
2) The teacher has increased student discussion time from 10 minutes to 15 minutes to work together to create quiz questions and study the material.
3) The classical completeness achieved by students for cycle II was 91% and they had achieved classical completeness.

Based on the results of observations of teacher and student activities during the learning process, they have reached the good category (B), while the test results in cycle II show that of the 23 students who were research subjects, the level of achievement of student learning outcomes has reached the good category with the percentage at the first meeting reaching 87 % of 20 students were achieved and 3 students had not been achieved, while meeting II reached 91% of 21 students had been achieved and 2 students had not been achieved.

This data shows that the researcher has carried out his research well and the implementation of cycle II has achieved the predetermined percentage of success, namely good qualifications with a score of 68-100%. This shows that the research carried out by the class in class IV of SD No. 126 Presidential Instruction Pa'rappunganta 1 Takalar Regency does not need to be continued to the next stage, although there are things that researchers need to pay attention to in the learning process which is input from the class IV teacher, namely that class mastery needs to be improved and the use of time must be more efficient.

4.2.   Discussion

This research was conducted to determine the success of the team quiz learning model applied in improving student learning outcomes by taking research subjects, namely fourth grade students at SD No. 126 Presidential Instruction Pa'rappunganta 1 Takalar Regency consisting of 23 students. This classroom action research consists of 2 cycles, where in each cycle there are 2 meetings which are carried out in accordance with research procedures, namely planning, implementation, observation and reflection.

Based on the results of the first cycle evaluation at the first meeting, teacher teaching activities were in the sufficient category with a percentage of 47.61% and student learning activities were assessed in groups where team A was in the sufficient category with a percentage of 41.66%, team B was in the sufficient category with a percentage 45.83%, and team C in the sufficient category with a percentage of 41.66%. Meeting II, the teacher's teaching activities were in the good category with a percentage of 71.42%. Of the 23 students, at the first meeting there were 7 students who had scored >75 and 16 students who had scored <75. In other words, the

achievement percentage for cycle I at meeting I was 30% while at meeting II it was 48%, this has not yet reached the standard percentage of success. Meanwhile, cycle II showed improvement, namely at meeting I there were 20 students who got a score >75 with an achievement percentage of 87% and 3 students got a score <75 with a percentage of 13% while at meeting II there were 21 students who got a score >75 with a percentage of 91 % and 2 students who scored <75 with a percentage of 9%.

From the results of the implementation of cycle II, it can be seen that there has been an increase in the quality of learning, both from process indicators and outcome indicators. Judging from the process indicators at the first meeting, the teacher's teaching activities were in the good category with an achievement percentage of 81%, while student learning activities assessed as a group experienced a fairly high increase, from the previous meeting being in the fair category to the next meeting being in the good category. This can be seen from the aspect of listening to the material when the teacher explains, students' creativity in creating questions for the quiz and students' creativity during the quiz.

At the second meeting, the teacher's teaching activities were in the good category, namely 90.47% and student learning activities assessed as a group had increased in percentage where team A obtained 21 scores out of 24 maximum scores with a percentage of 87.5% in the good category, team B obtained 19 scores out of 24 maximum scores with a percentage of 79.16% in the good category, and team C obtained 22 scores out of 24 maximum scores with a percentage of 91.66% in the good category, seen from the aspect when students listen to the material explained by the teacher, student creativity in creating questions, and student activity during the quiz. Student learning outcomes for outcome indicators based on cycle II test results have reached the target, namely 21 out of 23 students (91%) have achieved a KKTP score of ≥75. With this, the learning results in cycle II by applying the team quiz learning model have reached the predetermined percentage of success so that the research cannot be continued in the next cycle.

The entire process that has been carried out by researchers, both in planning, implementation, observation and reflection, shows that learning based on these discussions by implementing the team quiz learning model if implemented well and in accordance with the steps is proven to improve student learning outcomes. Teachers' teaching activities also increased from cycle I to cycle II so it can be concluded that the application of the team quiz learning model can make it easier for students to understand the science learning material, train students to speak and express their opinions, students are more active in learning, especially during quizzes, students are more enthusiastic and motivated to learn. This is in line with previous research, namely research conducted by Mutakin, D. (2022) which showed an increase in learning outcomes after using the Team Quiz learning model. Similar research was also conducted by Ahmad, F. (2022) with the results of his research showing an increase in the average score from cycle 1 to cycle 2, this can occur due to several things, namely learning that applies the Team Quiz model can change learning which was initially centered on for teachers, it becomes student-centered learning, so that this learning model is expected to improve student learning outcomes in learning.

In general, the implementation of actions in cycles I and II have not been carried out well because there are still shortcomings both in terms of researcher and student activities, including class mastery that needs to be improved and more efficient use of time during the learning process. However, there are many positive impacts obtained during learning by implementing the team quiz learning model, including students becoming more active during learning, discussing more with their friends, and becoming learning material for future researchers.

5   Conclusion

Data on student learning outcomes in science subjects after being given the action of implementing the team quiz learning model showed an increase in the average student score from cycle I with the sufficient category (C) to cycle II with the good category (B). Likewise, the percentage of classical completion has increased, where in cycle I it was in the sufficient category (C) while in cycle II it was in the good category (B). Based on the results of this research, it was concluded that the application of the team quiz learning model in science learning improved student learning outcomes.

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