

# The Implementation of Think Pair Share Model with Interactive CD Assistance to Improve The Learning Outcomes of Natural Science Subject OF Elementary School Students

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**Abstract**—The purpose of this study is to improve the learning outcomes of natural science subject with think pair share model with Interactive CD assistance. Moreover, students' activities in learning are also revealed with think pair share models with interactive CD assistance. This research was a participatory collaborative classroom action research. Each cycle was held in three meetings, consisting of planning, implementation, observation, and reflection. The subjects of this study were students class VI B of SD Negeri 2 Merauke, amounting to 33 students. Data collection was obtained through observation, interviews, and tests. The form of data analysis was qualitative descriptive. The results of this study indicate an increase in each cycle, based on preliminary observers before the applied think pair share model the value of student learning outcomes obtained by 45.5% increased to 63.6% in Cycle I, and in Cycle II by 87.9%. The average increase in cycle I and II was 24.3. The results of this study indicate that the think pair share model with Interactive CD assistance has a very good impact on improving students' learning outcomes.

**Keywords**-component, think pair share, Interactive CD, Learning Outcomes of Natural Science

## I. INTRODUCTION

Natural Sciences learning should emphasize the provision of hands-on experience to develop students' cognitive abilities and competencies. The science process skills are a way to teach science as a process. This question is in accordance with the constructivist paradigm which emphasizes the importance of

students building their knowledge through active involvement and seeing firsthand what they learned. This is the guidance for a teacher in teaching students in the classroom because the teacher is the spearhead that deals directly with students as subjects and objects of learning. Thus, the teacher is guided to be able to develop models, approaches, and methods that can make students able to participate in learning.

Based on the results of the Program for International Study Assessment (PISA) under the Organization of Economic Coordination and Development (OECD), it shows that Indonesia is a country with a relatively low level of ability. Focusing on literacy concerning natural science, Indonesia ranks 62 of 70 participating countries with an average score of 403 [1]. The science aspect measured by PISA aims to determine students' ability to identify global perspectives in the everyday environment to be able to compete at the international level. Science learning outcomes achieved by students in Indonesia who are classified as low are influenced by many factors, namely the characteristics of students and families, reading abilities, learning motivation, self-interest, and concept, learning strategies, level of attendance and sense of belonging [2].

Various studies have been carried out to improve student learning outcomes, which are specifically on the ability of students who can find concepts from what they have learned. One of them is by involving students directly or doing experiments directly, this is an important role in the success of

students in the ability of students to find concepts in science learning [3]. The role of the teacher in carrying out natural science learning is inseparable from the teachers' own efforts to develop their ability to be able to achieve the learning objectives, therefore a learning model that is sufficient to the learning process of students is required. The model used plays an important role in classroom learning since learning approach may serve as a background to the implementation model, strategy, or learning method [4]. Based on observations made on natural science learning in class VI B of SD Negeri 2 Kelurahan Maro, Merauke Regency, Papua Province, the following facts were found: (1) the process of learning implementation tended to still use the teacher-centered approach, which means the teacher becomes the center of learning and becomes one only source of information in the classroom; (2) the teacher provides little opportunity for students to be active and yet has not provided the opportunity for students to speak (3) based on the class teacher assessment documents, students' learning outcomes of 2018/2019 school year is still far from this KKM (learning mastery standard), with only 45.5% of 33 students able to pass the base standard. According to the interviews with the teachers, so far, they are seldom to use certain learning model in the classroom and only using the available standard textbook as the media. The facts that were obtained in class IV B of the SD Negeri 2 Merauke were a problem that had to be sought immediately. Therefore, the researcher will implement think pair share learning model with Interactive CD assistance at natural science subject, especially on the course of the characteristics a living being.

Think pair share learning model is one of the cooperative learning models. Cooperative is a learning model that gives students time to learn from other students and friends and is able to improve students' independent learning skills. The think pair share learning model has the following syntax: (1) think, the teacher gives a question related to learning and asks students to think about and to look for answers individually; (2) pair, students sit in pairs with their peers to discuss what has been obtained at the Think stage to be completed in the group Pair stage; (3) students present the result of their discussion to the class while the others giving response. Therefore, the application of think pair share models with interactive CD assistance at class VI B of SD Negeri 2 Merauke is expected to provide an improvement in each cycle towards the achievement of learning objectives, especially in an effort to improve students' learning outcomes in the classroom.

## II. RESEARCH METHOD

The research was classroom action research (CAR) which consisted of two cycles, in which each cycle consists of four meetings. This type of classroom action research model was adapted from [5]. The researchers acted as a full participant and assisted by the classroom teacher as collaborative ranging from action planning, preparing tools and media, being a model teacher, to being an observer and reporter of data in the study, while the class teacher became an observer that aims to find out all activities observed when the implementation is thorough

and accurate, so that there is no missing important data during the learning process [6].

Subjects in this study were students of class VIB of SDN Merauke 2 in 2018/2019 school year totaled 33 students. Research data was collected the odd semester of 2018-2019. The data in this study were (a) observation sheets, in the form of student activity sheets with think pair share model with interactive CD assistance, (b) assessment of students' cognitive learning outcomes, in the form of evaluations at the end of each cycle.

The individual results of the cognitive domain test were collected and those with score  $\geq 80$  were considered pass whereas the minimal learning mastery of natural science subject at SD Negeri Merauke 2 for class VIB is 72. If more than 80% of the students able to achieve or surpass the learning mastery standard (KKM), then the classical mastery learning has been achieved.

The criteria for determining the level of each action can be seen in table 1 below.

Table 1 Grade level of each cycle

No	Average score	Category
1	81-100	Very Good
2	61-80	Good
3	41-60	Fair
4	21-40	Low
5	0-20	Very Low

Data analysis used in this study was descriptive analysis. The data obtained in the form of qualitative data and converted into quantitative scoring based on observers' observations during the learning process in each meeting, while to calculate the results of the increase in each cycle, the following formula was used.

## III. RESULTS AND DISCUSSION

The action of a cycle I consist of four main parts which are very important, namely action planning, action implementation, observation, and reflection. The implementation of the first cycle action is carried out on Thursday 27, 30 and 31 June 2018.

### A. The Findings of the Implementation of Cycle I

The implementation of the activities carried out in this study begins with planning which includes the preparation of Learning Implementation Plans (RPP) in accordance to the material to be discussed namely the characteristics of a living being particularly the characteristics of animals and plants. The media used in this study are Internative CDs, Student Worksheet, student activity observation sheets and student learning outcomes test sheets given at the end of the cycle.

Actions and observations made on June 27, 2018, initiated by the teacher doing apperception with questions and answers about the special characteristics of a living being. At the core activity, students listen to the teacher's explanation of what was discussed on that day about the special characteristics of a

living being. The teacher tries to explore the students' abilities in the presentation of material by asking questions about (1) try to mention one of the special characteristics of a living being; (2) what is the use of the creature? Students individually answer questions given by the teacher and according to the steps of think share visualization. Then, the students together with their group pairs discuss what has been obtained at the Think stage to be re-analyzed at the Pair stage. After the students discuss, the teacher asked representatives from the group to come forward to present the results of the group in front of class or Share stage. Students were still less active in responding to answers from the group that was presenting.

Based on observations of students' activities in learning, it can be said that, at the first meeting, not all activities in the think pair share model can be achieved by students since the students have yet to fully understand the learning model. Moreover, the teacher was also failed in timekeeping so that the allocated time was not appropriate for the needs of the class, aside from the lack of discussion conducted between the pair of students. Of 29 students, only six students answered the teacher's questions which implies that most of the students have yet to participate in the learning model. Hence, the first meeting of the cycle I have not been optimally conducted.

The second meeting was conducted on June 30 and initiated by a review of the previous materials related to the characteristics of a living being. In the initial activity, the students were asked to watch the video concerning the special characteristics of animals. The teacher attempted to reveal the students' comprehension of the materials by suggesting them to asking questions and stating opinions regarding the recently watched interactive video. For the Think stage, the students particularly paid attention to the special characteristics of animals around them, then proceed to discuss the matter with their pair and work on the Worksheet as for Pair stage. For the Share stage, the students entered the discussion with the entire class and present was discussed previously with their pair related to the special characteristics of animals around them. The discussion ran smoothly even though there were several less active students. At the last activity, the teacher finally gave the final statement of the special characteristics of animals around them. Based on the results of observation, it is concluded that all the stages have been completed by the students.

The implementation of the third meeting included apperception activities conducted by the teacher by reviewing the lessons at the previous meeting about the special characteristics of animals. At the core activity, students were invited to listen to interactive CDs prepared by the teacher. Then the teacher distributed LKS (Worksheet) to students to do at the Think stage. Students were given the opportunity to express their opinions regarding what students have seen on the student worksheet. This activity is associated with the next task, namely that students in groups of pairs see pictures prepared by the teacher about special characteristics of ducks and lizards. In this case, the teacher was assisted by an observer to see the students' activities after seeing the pictures

distributed by the teacher in the Pair stage. In addition, observers also saw the implementation of think pair share conducted by the teacher whether it was in accordance with the syntax. The students were seen actively watching the pictures shared by the teacher in the classroom, then the discussion stage in the classroom students presented the results of the discussion in pairs about the special characteristics of duck and lizard animals.

In the final activity, the teacher gives an affirmation of the special characteristics of the two animals, students reflect on learning, at the end of the student's lesson. Students do a cycle I evaluation test in the form of essay questions consisting of 10 items. Students answered the questions as well as possible and run in an orderly manner. Based on the observation sheet of students' activities in think pair share learning model, it was obtained data that the third meeting of all stages of activities could be achieved by the teacher. Students who were less active when participating in learning have started to decrease. The decrease in the level of difficulty of students in the think pair share model was seen when the teacher gave the opportunity to ask questions that have not been understood and try to answer the questions given by the teacher even though the students' answers were wrong. Students have dared to put their ideas into LKS and were already independent in learning. However, at the time of presentation, students still seemed to be less active and less confident in conveying the results of their partner group work. Other groups provide input and questions on the results of the discussions presented. Observers' data said that some students were still not focused on paying attention to the group of couples who were presenting, there were groups who tried to complete their tasks individually without being done together with the group.

#### *B. Reflection of the Activities of Cycle I*

The results of the reflection of the action seen from the observation sheet that was carried out by the observer during three meetings and seeing students' cognitive learning outcomes. Based on the results of student activity observation sheets, the learning with the think pair share model yields good outcome, so that it can be concluded that this learning model is able to improve students' activities in learning natural science subject. The presentation of students' activities based on the observation of the Cycle I can be seen in the following Table 2:

Table 2 Students' Learning Activities at Cycle I

Aspect	Score of Each Meeting		
	P. 1	P. 2	P. 3
Preliminary Activity	11	13	14
Think stage	10	11	13
Pair stage	10	11	12
Share stage	7	9	10
Final Activity	11	12	13
<b>Total</b>	49	56	62
<b>Average</b>	64.5	73.7	81.6
<b>Success Rate</b>	73.2		

Student learning outcomes are seen in the cognitive domain of students. The cognitive domain is obtained from the learning outcomes of the final test of the cycle. Data on students' cognitive learning outcomes can be seen in table 3.

**Table 3 Students' Learning Outcomes of Cycle I**

Learning Outcomes Data	Average	Percentage of Learning Mastery
Cognitive Domain	74, 0	63.6%

The analysis results indicate that improvement in the next cycle is required because the completeness of classical learning has not reached the minimum learning completeness criteria set by the researcher, which is 80% of all students in the class who have achieved the score of  $\geq$  KKM. Although the value of student learning activities at each stage has shown in either criteria or 73.2% it has not determined that the implementation of the first cycle has been carried out well. The researcher re-conducted the reflection together with the observer to correct the problems and implementation which had not been implemented at every think pair Share stage in cycle I to be able to improve student learning outcomes in the next cycle.

### C. *The Findings of the Implementation of Cycle II*

Activities carried out at the planning stage include the preparation of RPP concerning the specific characteristics of plants. The media used in this learning include subject matter, student worksheets, students' cognitive test equipment in the form of essay questions which consist of 8 items, student learning activity sheets, and internal CDs and facilities that are around the school environment. The implementation plan for cycle II was made for 3 meetings.

The implementation of the second cycle of the first meeting was held on August 6, 2018. The teacher entered the classroom to greet the students and apperception by asking a learning video in the form of an interactive CD. The core activities included questions and answers for strengthening the concept to students about the special characteristics possessed in plants. The teacher distributes LKS to students to do at the individual Think stage by observing the video displayed by the teacher. Then students paired to share ideas about the problems that have been done at the Think stage to be completed at the Pair stage. At the Share stage, students discuss in class presenting the results of discussions about the special characteristics of plants. The students have begun to be confident in the presentation by delivering their answers in front of the class and the other students were focused on paying attention to the presentations presented by the presenter group. Other groups provide input and questions related to the special traits possessed by plants, students are no longer shy in delivering their discussions in front of the class, talking and listening to their partners or other group members in discussing problems. The way students asking questions was also getting better. The teacher has done all the stages in the RPP very well. However, there was a decline in learning outcomes in this meeting compared to the third meeting of Cycle I. According to the interview, this decline was due to harder materials.

The second cycle implementation activity began with the teacher reviewing the previous meeting material about the special characteristics possessed by plants. Then the teacher gave motivation to students by presenting an Interactive CD learning video and then asks students to give their opinions about the learning videos observed and deliver a deeper understanding of the video display that has been observed by students. Then, the teacher distributes LKS to students to do at the Think stage. Students were very excited about working on the worksheets distributed by the teacher, the teacher then collected worksheets that have been done by the students.

The teacher then formed students into groups and distributes flower plants prepared by the teacher. The teacher assigned students to observe the flowers that have been distributed by the teacher and fill out the worksheets according to those observed. Students were very happy to observe the flowers and look for special features on the flower and write it into the student worksheet. Students were very happy to follow the learning and every group was very active. The teacher asked students to present the results of their group work in front of the class at the Share stage, students provided input and questions to the group that is presenting. In the final activity, the teacher gave an affirmation of the specific characteristics of the flowering plant, then gave the task to students to observe the characteristics of plants in their home environment.

Students work on these tasks outside school hours. The teacher carried out all the stages contained in the RPP very well. The cognitive learning outcomes of students were better compared to the first meeting, which can be seen from the student observation sheet that all students understand all the stages in the think pair share model.

The implementation of the third meeting began with the teacher reviewing the previous meeting material about the special characteristics possessed by flower then convey the things that will be assessed and asked for last week's assignment. At the Share stage, students discuss the results of the identification and analyze the worksheet in front of the class. Students were very eager to submit reports on the work of groups in front of the class and other groups respond and provide input questions regarding the presenter group report. Students were seen actively participating in learning and paying attention to the group that was presenting. At the end of the lesson, students worked on the test sheet given by the teacher, this test sheet to determine the level of knowledge of students in cycle II in the form of essay questions consisting of 8 items. Students did the questions as well as possible. Based on the activities observation sheet, students in the think pair share model are in the very good category.

### D. *Reflection of the Activities of Cycle II*

Based on the results of the observation sheet conducted by the teacher in cycle II, the results of the analysis are considered as very good criteria. Thus, the application of think pair share learning models with Interactive CD can increase student

learning activities. The percentage of student learning activities based on observation sheets with the application of the think pair share model can be seen in table 4 below:

Table 4 Students' Learning Activities at Cycle II

Aspect	Score of Each Meeting		
	P. 1	P. 2	P. 3
Preliminary Activity	14	14	15
Think stage	11	13	15
Pair stage	14	15	16
Share stage	11	12	12
Final Activity	14	15	16
<b>Total</b>	64	69	74
<b>Average</b>	84.2	90.8	97.4
<b>Success Rate</b>	90.8		

Analysis of students' cognitive learning outcomes can be seen in the following table 5 below:

Table 5 Students' Learning Outcomes of Cycle II

Learning Outcomes Data	Average	Percentage of Learning Mastery
Cognitive Domain	80,3	87,9%

Based on the analysis of the data obtained at Cycle II, it can be seen that the classical learning achievement of students has reached the criteria of minimum learning outcomes that have been determined: 80% of all students in the class who have achieved the score of  $\geq$  KKM. The average score of students obtained in cycle II was 80.3. Students have carried out the Think Pair Share learning model stage very well. The think pair share learning model has been carried out appropriately as can be seen by the improvement from Cycle I to Cycle II so that no further Cycle is needed. The reflection of Cycle II is the final reflection of this study.

#### IV. DISCUSSION

The students' learning outcomes cover the cognitive domain in the implementation of think pair share assisted by interactive CD model on the students of class VIB SD Negeri 2 Merauke concerning the special characteristics of a living being. The improved learning outcomes are due to two factors namely the inner motivation from the students (internal) and the implementation of model and media by the teacher (external). The internal factor was caused by the eagerness of the students to be involved in the implementation of the model. The improvement is shown by the observation sheet brought by the observer at during every meeting.

Based on the analysis in cycle I, it can be considered that student activity is classified as good. This is shown by students' enthusiasm the moment the teacher stepped into the class, the attention they pay at the interactive video (Think stage), and when they answered the worksheet given by the teacher which yielded a score of 73.2% (categorized as good). At Cycle II, students' learning activities improve in each meeting as evidenced by increasing focus of the students in doing the worksheet. Based on the observation, the teacher always tried to arouse students' attention by, (1) using various learning

media, such as books, pictures, Interactive CDs, LCDs, and real plants; (2) use mop on the sidelines of learning; (3) using good questioning techniques to foster students' enthusiasm for learning.

External factor influencing the improvement of student learning outcomes is the implementation of the learning model used by the teacher, namely the think pair share learning model with interactive CD. By using the model, the students have experienced increased learning outcomes compared to the previous model implemented in the class. The percentage of the students' passing in Cycle I and Cycle II can be seen in the following table 6:

Table 6 Students' Learning Outcomes at Cycle I and II

Learning Outcomes Data	Cycle	Average	Percentage of Learning Mastery
Cognitive Domain	I	74,0	63,6%
	II	84,2	87,9%

Based on table 6, it can be seen that the cognitive learning outcomes of students in the second cycle have increased. It can be seen from the percentage of classical student learning mastery in the first cycle of 63.6% with an average value of 74.0. A total of 21 students completed learning with a value of  $\geq$  72, while students who had not completed as many as 12 students. However, this result has not achieved the previously determined score namely 80% of the students should have achieved a score higher than 72. Based on the observations of the teacher observer, students did not complete the cycle I because students were not able to master the concepts learned which can see when students did test questions at the end of the first cycle. There were still students who asked their friends so that the learning process in the first cycle needs to be improved in order to able the students to master the learning materials.

Improvements in cycle II done by teachers and observer teachers significantly and positively affect the students learning outcomes. Classical student learning mastery is 87.9% with an average score of 84.2. A total of 29 students achieved  $\geq$  72 scores, while 4 students did not complete the study. This shows that the mastery of cognitive learning outcomes of students has increased and has reached a predetermined success indicator of 80%. This is in accordance with what was proposed by [7] that each individual is able to develop one own knowledge possessed by oneself.

Based on the description, it can be concluded that the implementation of a think pair share model with interactive CD assistance can improve student learning outcomes. The stage of the model and the assistance of interactive CD was able to make the students comprehend the natural science more easily.

#### V. CONCLUSION

Based on the findings and discussion, the conclusions can be drawn as follows: (1) the think pair share with Interactive CD assistance can increase students' science activities and

learning outcomes. Students are very enthusiastic about learning science which is shown by several behaviors such as, active students, dare to express opinions, and confidence to appear in front, (2) the results of this study indicate that think pair share learning model with interactive CD assistance can improve cognitive learning outcomes in students. The improvement is proven by the increased learning mastery, from 63.6 with an average score of 74.0 at Cycle I to learning mastery of 87.9% and average score of 84.2 at Cycle II. The classical students' learning mastery of from Cycle I to Cycle II is 24.3%.

#### ACKNOWLEDGMENT

We thank Universitas Musamus for facilities and supports. This project was supported by Belmawa Ristekdikti and the publication was supported by Universitas Musamus.

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