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**IMPROVING THE UNDERSTANDING OF THE CONCEPT
COMPARE TWO FRACTIONS ORDINAL TYPE THROUGH
COOPERATIVE LEARNING GROUP INVESTIGATION IN THIRD
GRADE OF ELEMENTARY SCHOOL NO.64
OF THE CITY EASTERN IN GORONTALO CITY.**

BY

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Abstract:

The issue in the study were understanding of the concept of compare two fraction ordinary may through learning cooperatively type Group investigations? The research aimed at improve the understanding of draff compare two fraction usual through learning cooperatively type group investigations. Methods used method is research acts class. Research results show the understanding students 59% reach it is not in accordance with indicators that in charge, investigations so proceed at two cycle. On the cycle of the understanding students have reached 81,76%, so investigators as not continu to the next cycle. Of research results there of may be conclude that learning cooperatively type group investigations understanding can improve the concept of compare two fraction on graders third elementary school No.64 of the city eastern in Gorontalo city.

Key Word: understanding concept, fraction unusual, learning cooperative type investigation group

PRELIMINARY

Important rote in and the life of a day it's fraction need known by students from the period of a boy and a boy. Due to understand the students can do a thing like buy sugar and a half kilogram, buy oil foorth liter, ect. It is necessary to fraction early on. Understanding fraction in this compare the fraction ordinary may be conducted with involve the students activity to compare on two way fraction ordinary such, not only provided by the teacher for later in the memorized by students merely.

On the basis of the observation on elementary scool No.64 of the city eastern in Gorontalo cities, material that is fraction among other compare two

fraction ordinary the same not less overrun the students that. From 34 studentes, only 10 students or 29,41% the concept of the compare two faraction and 24 students or 70,59% not understand. Teacher graders third elementary school No.64 of the city eastern already using the granting of duty. Method of demonstrations but not yet success. Based upon experience to clear on the presentation of the concept of compares two fraction usual require teacher. This matter in accordance with statement by Kennedy and Tipps (1994:421) that the form low principled behavior still difficult to understood students. Therefore it iis necessary environment learn students the real situation with a simple to understand the concept of abstract especially in concept fraction.

On the basis such need to be an act in an effort improve the process of learning the research then on the fraction especially in understanding compare two fraction usual, namely with an alternative the implementing the strategy of cooperatively to the students third grade elementary school.

The adoption of learning cooperative require skill special of the teacher, because of all teachers in applying learning cooperatively. Through, thus teachers may apply trained learning cooperatively. Cooperatively learning, consists of same fashion, such as Stad mode, Jigsaw, Group investigations (Slavin, 1995:5, Eggen and Kauchak,1996:297). Researchers choose the type of learning cooperative investigation group because it can spur of the students cooperate received each other than differences capability, ethnicity, and region in solve the problem in the silvering through investigation. In learning compare ordinary students did not just learned compares two fraction in ordinary expected, students are expected learn compares two broken usual way not memorize, but students trying to find patterns usual way noty memorize, but students trying to find patterns compares two fraction through investigation in such ordinary.

In accordance with the rear, it shall be formula problems in the study were "if the understanding grade 3 elementary shool on the concept of compares two fraction ordinary may rising through the learning cooperatifvely type group investigation? And this research aim for increasing understanding students grade 3

elementary school in concept of compare two fraction ordinary may rising through the learning cooperatifvely type group investigation.

Importance of in Learning Maths.

Maths arise because the human mind, connected with the idea, the process of reasoning (Rusefendi,1980:48). According Hudojo (1990:3), math in connection with the ideas or notion, rules of rules and relationship provided for in logical mathematical concepts relating to the abstract. Whereas Sutawidjaja (1997:176), declare that math reviewing the objects abstract computed in a system axiomatic by using a symbol (of emblem) and reasoning.

Beause math relating to the ideals, notion, the rules and relationship provided for in logical, so the person who want to learn math must reach understanding that perceived of some help in daily life. Katona (in Orton,1992:103) confirmed that the learners are learning to be more successful than learn by understanding. This means that understanding of draft easier remembered, because may reducing the amount of information that should be memorized. So that thus and issue already will facilitate the students to find completion. For example, if to face on the issue of compares two fractions $\frac{1}{2}$ and $\frac{1}{4}$. If students already understand the concept of praction, demi, one third, quarter, ect. So students not need too memorize the relus certain rules, why $\frac{1}{2} > \frac{1}{4}$. But students create an idea why $\frac{1}{4} > \frac{1}{2}$. From the idea of obtained a sense to more in problem. So if understanding have embedded in his mind, if so then will be a little more things that need to memorized.

Understanding math need to put on the right of information or knowledge is studied into network a process structure cognitive students (Hilbert and Carpenter in Asri,1998:4). May be right of information or material math learned info internal network for done to pay, attention to relation ship or the difference between the information similarities. Example to give understanding students to compares two fraction concept to $\frac{1}{2}$ and $\frac{1}{4}$, hope that the students can understand relationship or the concept of the similarities.

Yolk Concept Fraction.

In The daily life we often distributed cake or food even objects to children, friends, and neighborhood. The distribution of the same not matter if the abundance of object that will we like equal to or from the abundance of multiple be people are we going to. And it is otherwise division shall be matter if object that will we for less than or more of the same not a multiple of the abundance of the person shall be divided.

Defenisi Fraction

Fraction defined as number in symbol written in the form $\frac{a}{b}$ whereby a and b of integers and $b \neq 0$. Fraction $\frac{a}{b}$, a called numerator and b called denominator (Hudojo,1993:1020. According to Karim (1996:6.4), fraction is (1) comparison the same objects to the overall the objects. Supposed to mean an object divided into several parts of the same it comparison of any part of it noun with the overall create a fraction. Comparison community part of a community original same. Supposed to mean when a community divided over a community the same, then comparison of any part of the same overall community against original shall create emblem of association of a fraction.

Word fraction means difference, there are interpret numbers rational and there is also the interpret emblem of number to number rational (Darhim,1991:163). Whereas Sutawidjaja (1997:154) say that fraction as comparison of the two numbers tattoo with divide not zero. Numbers is arbitrary that maybe given name $\frac{a}{b}$ with a and b numbers tattoo and numbers in other words of $b \neq 0$. From the different arguments that is numbers in symbol maybe written in whereby a and b of enteges, and fraction $\frac{a}{b}$ called counting and b called denominator of the fraction.

The Types of Fractions

Fractions according Darhim (1991: 173) is divided into three kinds, namely.

1. Denomination of pure or true, the fraction whose numerator is smaller than the denominator and the fraction can not be simplified further.

Example : $\frac{1}{2}$, $\frac{1}{3}$, $\frac{5}{7}$, $\frac{11}{15}$, ect.

2. Smithers usual, the fraction consisting of the numerator and denominator, where the numerator is smaller than the denominator, but the fraction can be simplified still further.

Example : $\frac{2}{4}$, $\frac{3}{12}$, $\frac{5}{15}$, $\frac{20}{28}$, ect.

3. Denomination mixture, the fraction whose numerator over the denominator. The fraction consisting of pure integers and fractions.

Example : $\frac{11}{2}$, $5\frac{1}{3}$, $6\frac{5}{7}$, $1\frac{11}{15}$, ect.

Cooperative Learning Group Investigation

Investigation group is cooperative learning strategies that put students into groups to investigate a topic. Investigation Group utilized the assistance and cooperation of the students as a basic learning tool, like other cooperative learning strategies. It's just Investigation Group has primary focus is to investigate an object or a specific topic (Eggen & Kauchak, 1996:304).

Investigation Group models to perform as well as other models of cooperative learning is through planning. Planning Investigations Group conducted through five stages, namely: (1) setting goals, (2) plan for the collection of information, (3) form a group, (4) designing the group's activities, (5) planning activities of the group as a whole.

1. Determine the destination

Activities in Investigative Group is designed to achieve three main objectives, namely to develop skills discovery (inquiry), develop teamwork skills, and

gain a deep understanding of the material. Investigation Group is very effective models to help students to develop problem solving skills and ability to work together.

2. Information gathering plan

Information gathering can be a collection of text books or work with the library to ensure that the necessary resources are available. Other sources of information include text books from class, public library books, encyclopedias or other reference, tapes and video recording, and a human resources such as experts and scientists. To develop research skills, the teacher can view the acquisition of information as part of the investigation. The point is how students access their own information.

3. Forming a group

Learning Cooperative Investigation Group members consist of 4-6 students heterogeneously to cooperate. Investigation group members an opportunity to students to enhance cooperation and teamwork, as Investigating Group in achieving its objectives derived from forming groups with diverse members.

4. Designing the group's activities.

Investigation Group requires a level of cooperation that is greater than the STAD and Jigsaw. In STAD and Jigsaw students are assigned roles well. In Group Investigation, students should work together in making decisions regarding their roles.

5. Designing activities of the group as a whole

Last planning activity is designed to introduce the purpose Investigation Group. This activity is designed to make students understand the purpose of the activity and form of desired results. Introductions are also required to obtain the expected results. Introductions can be show important steps through OHP, diagram, or whiteboard.

Excess and Weaknesses Group Investigation

According to Eggen and Kauchak (1996:304), the excess Investigation Group are:

- 1) Focusing on the investigation of a topic or concept;
- 2) Provide opportunities for students to form or ask meaningful questions;
- 3) Effective in helping students to work in groups with different backgrounds and
- 4) Provide a context so that students can learn about themselves and others.

Furthermore Eggen and Kauchak (1996:306), weakness Investigation Group which students form their own groups and determine the topics that will be studied as they wish, as a result of a group to study the materials are different from other groups. However, this drawback can be overcome by forming groups and the determination made by the subject teacher.

Meanwhile, according to Slavin, (1995:19) weakness Investigation Group in completing a task group that can happen a hard working student and the other students are busy doing activities that are not assigned. To avoid this drawback is recommended in a group, each member of the group gets a different task and supervised by teachers.

Investigating the Implementation Group Comparing Two Fraction Ordinary

Model Investigation Group emphasizes the concept of discovery through investigation group. Thus, this model not only put some information into the minds of students or considered finished, but the students themselves who construct their knowledge through the investigation found a pattern common to compare two fractions. In Group Investigation is needed in learning mathematics and the emphasis is on the process not the outcome.

Learning to compare two fractions common to the Group Investigation in this study focused on two main objectives, namely:

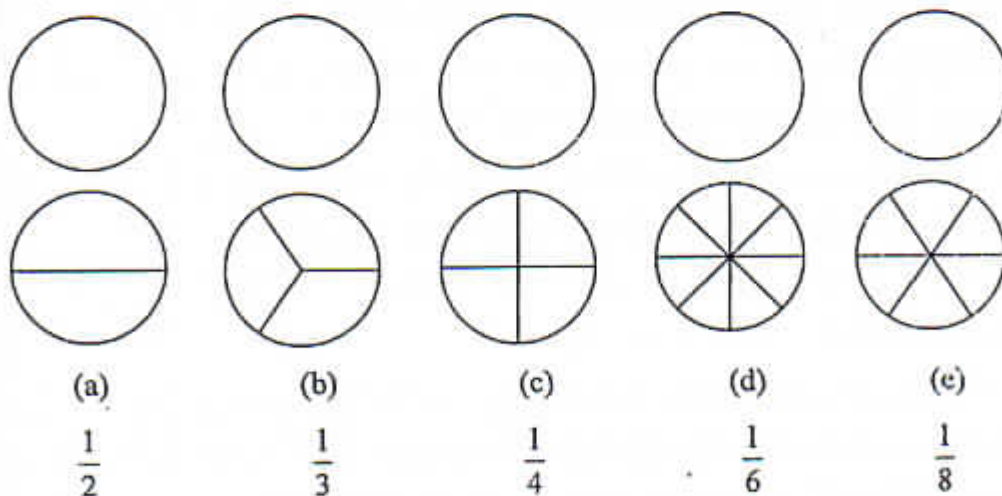
1. Students can find a pattern of two common fractions and
2. Students can demonstrate the truth of comparing two common fractions.
Shows the truth done two ways, the first way to use media Cycle fraction and the second ways to use the media fraction Square.

According to Karim (1996:6-8) explain the concept of comparing how two common fractions to elementary school students, which we introduced at the

beginning of learning fractions in students using concrete media, such as fruit, a loaf of bread, Cycle fraction, fraction Square, and other concrete objects and can use the image circle fractions (fraction Cycle), fractional square (Square fraction) or rectangular. It is expected that students can understand the concepts being studied in order to facilitate the process of learning, with the following steps.

- 1) Teachers distribute media cycle fraction for each student, so the opportunity to observe and learn about the media in a time of 3 minutes;
- 2) The teacher asks students to classify media circle fraction pieces on:
 - a. Dua bagian yang sama besar sesuai keinginan siswa,
 - b. Three equal parts as desired student
 - c. Four equal parts as desired student
 - d. Six equal parts as desired student
 - e. Four equal parts as desired student
 - f. Eight equal parts as desired student

While categorizing the results, students counted one by one fractional scale, with the following demonstration.



- 3) After the grouping cycle fraction, each student in the group was asked to report the results groups many pieces from the pieces of the same fraction of the cycle, corresponding to the fractional amount required to compare two common fraction. This activity was followed by a question and answer to determine students' understanding of comparing two common fraction. This is done by asking questions related to the concept, for example:

- a. Which was bigger chunks in (a) or (b)?
- b. Which was bigger chunks in (a) or (c)?
- c. Is the pieces on (a) the same as the pieces on (e)?
- d. How does the relationship between the fraction cycle formed pieces so the result is the desired fraction form?

Similarly to the process is the same fraction square media, so that by using the two ways that students find patterns common to compare two fractions.

During the learning process, teachers need to maintain and improve student engagement in learning activities. These activities include the motivating students who are less active, giving a positive response to students who berpartisipasi during learning activities take place. In addition, monitor the development or ability level of students during the learning process.

To reach the learning process of students working in groups of as many as three times, namely:

- a. Investigation to find patterns common to compare two fractions.
- b. Investigation to demonstrate the truth of comparing two fractions usual way I
- c. Investigation to compare two fractions show the truth in a way ordinary II, which involves steps Group Investigation Model

The method used in this study is the method of action research, in order to improve the process of learning to compare two common fraction.

Research Results

In the first cycle when the investigation, all groups trying to find the relationship between the numerator and denominator. In LKS, already known as the value of the numerator of a fraction. Numerator is a, while the denominator is

- b. By providing a and b are varied, all groups should determine the value of a and b, so that all members of the active group filled worksheets that will lead to a formulation that may be equal to zero but b can not be equal to zero.

For example, to help groups that have difficulty finding relations a and b, the researchers asked the question "try to see columns 2 and 3, what can be found?. In addition, the researchers activate cooperation in groups by asking the

"do not work on their own, try to work together" or "to get the job done fast guys, you guys need to work together". In this case, the researchers sought to spur students to help each other work friends and work together. The investigation lasted for 35 minutes as planned.

LKS reported somewhat lengthy and material prerequisites for study material compare two fractions ordinary yet completely understood by students. Therefore the material needs to be explained again until they can understand it very well. The material in question is a pre-requisite knowledge of the numerator and denominator of the fraction and the initial conception of understanding common fraction.

Based on the observations of investigators to report worksheets, each group may find that $a = 0$ but $b \neq 0$. This invention is based on the results they obtained in LKS. Of the findings of all groups can be summarized as follows.

1. Material prerequisites of the numerator and denominator of the fraction is the main requirement to compare two fractions ordinary
2. Numerator must be zero or $a = 0$ but the denominator can not be equal to zero or $b \neq 0$
3. Conclusion that the students in this group were unexpected, because each group is only expected to find the relationship between the numerator and denominator. Students are sometimes asked to determine the value of a and b . To determine the value in question, it is possible for students to produce their own relationship numerator should be zero or $a = 0$ but the denominator can not be equal to zero or $b \neq 0$

Based on the observations of the researcher during the learning activities that students seem very happy in learning. They are very active in their respective groups, and active in the discussions.

In relation to students' understanding after participating in learning models Investigation Group, the seventh group stated that their understanding increased and more easily understand the material. This is because in the study group, they can ask each other between a group of friends.

Based on the results of the data analysis described above, it is found that the learning cycle I have achieved success criteria both in terms of process and in terms of results. Thus it was decided that the first cycle of action need not be repeated.

Learning in the second cycle is the implementation of the model to show the truth Investigation Group comparing two common fraction way I. On investigative activities, each group manipulating the cycle fraction to decide which is the value of the numerator and denominator of this step can be seen in Figure 1 below.

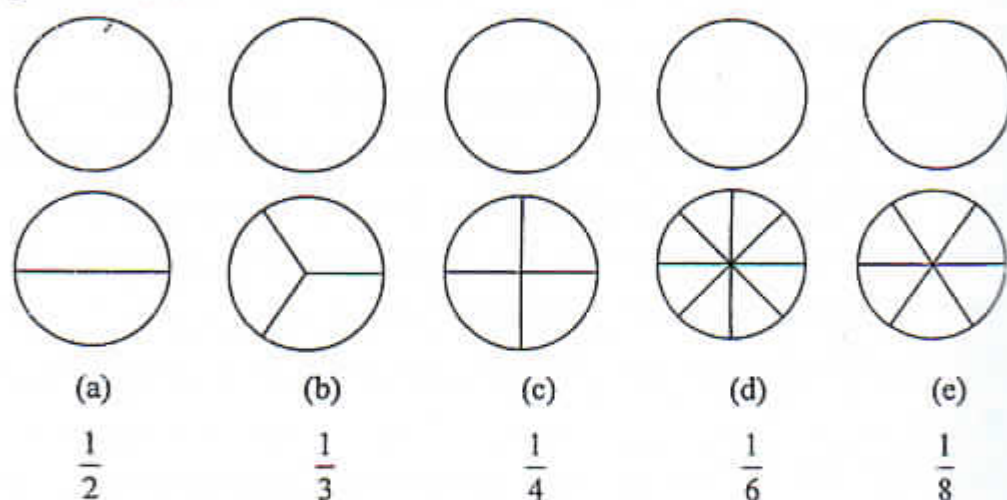


Figure 1. Step Group by LKS

The next group was asked to compare the value of fractional image (d) the same size as the first (figure a). Then all the groups perform two activities. First, determine the value of the group by using the fractional *cycle fraction* for image (d) such that the formed piece *cycle fraction* is desired. Secondly, all the groups to determine the value of fractions by using *cycle fraction* to the image (a) is formed such that the desired fractional value. All members of the group are actively trying to complete the task group. They share the task by arranging the pieces *cycle fraction*, no lying, no gluing, and no one thought about how to compare them. Each member of the group tried to propose the idea to compose on demand in LKS.

In the discussion, each group in turn report the results of the investigation. During the discussion, the representative of a group read their findings according worksheets that have their contents, while the other group responded to reports of the reporting group. Discussion begins at random. Researchers gave the opportunity for the group is not ready to appear in sequence. In addition, researchers also explained that should appear should not be the same as those, appearing in the previous meeting.

Discussion on the implementation of the second cycle is faster than the discussion on the first cycle of action, this is due to the presentation of each group takes place rather quickly. LKS results they present are shorter than the results of the action cycle worksheets I. Despite the frequently asked questions during the presentation of different pictures and some descriptions of different reasons, which made the final conclusion is the same group. So the question that appears more focused on presenting the image and the reason is not the conclusion. This, in contrast to the first cycle of action that questioned the conclusions.

Based on the observations of researchers to report and LKS each group found that each group can follow all of the instructions in the LKS. The use of LKS is very helpful towards working students, so that all groups can compare two fractions usual way I. All groups can conclude that compare two fractions that had the denominator is not the same as using *cycles fraction* without doing the proper order and without counting the number of pieces obtained *cycle fraction* will produce answers that are not appropriate. As a final conclusion, all the group concluded that to compare two fractions are not the same should determine the amount of fragments obtained were then followed to compare the results of the two fractions. Conclusions made by the students rather different conclusions on the action cycle I. In the first cycle of action, the only group I can make such conclusions as expected. At the second cycle, all the group can make the same conclusion though with a different editor. It can be caused by group consciousness during the discussion on the action cycle I.

To demonstrate the truth of comparing two fractions denominator is not the same as the way I made each image a different group, each group stated that

the two pieces of the cycle fraction has the same value. This is because the amount of fractions obtained from the second cycle of the same fraction, namely $\frac{1}{2}$ and $\frac{3}{6}$ so that the amount of each is the same. Nonetheless, to ensure that the amount of the same piece of cycle fraction, group V do so by inductive First, the group V composed pieces cycle fraction $\frac{1}{2}$ There are 2 pieces of the same magnitude and $\frac{3}{6}$ there are 3 pieces of the same magnitude of 6 pieces intact. After stacking and heaped them.

Based on the observations and data analysis the researcher during the learning activities that students seem very happy in learning and working in groups. They are very active in their respective groups, and active in the discussions. they are even more easily understand the material. This is, because in the study group they can ask each other between friends numerarics.

Based on the data described above, it was found that the second cycle of learning has achieved success criteria both in terms of process and in terms of results. Thus it was decided that the second cycle does not need to be repeated, although the use of time was 10 minutes slower than planned. Continued with the action learning cycle III.

In the third cycle of discussion, each group in turn report the results of the investigation. During the discussion, the representative of a group read their findings according worksheets that have their contents, while the other group responded to reports of the reporting group. Implementation of this discussion is going well, but not "as warm" previous discussions. This is due to report each group equally. Way of working, the results and conclusions of each group is the same, so that between groups feel confused what should they ask. Implementation discussions lasted about 30 minutes. This time 5 minutes faster than planned. In addition, all students stated that the cooperative learning models Investigation Group, they are easier to understand the learning materials.

Based on some analysis of the data described above, it is obtained that the action learning cycle III has achieved success criteria both in terms of process and in terms of results. Thus it was decided that the third act does not need to be repeated.

CONCLUSION

Based on the results of the study concluded that cooperative learning groups to increase understanding of the concept of Investigation compared two common fractions in class III Elementary School No. 64 east of Gorontalo City.

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