Efforts to Improve Understanding and Use Concept of Additive Fractions and Reduction Using Media Comics on Model Cooperative Learning Type Student Team Achievement Division (STAD)

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***Abstract*— This study aims to improve the understanding and use of the concept of fractions to the addition and subtraction using comics media through cooperative learning type STAD in teaching materials fractions in fourth grade elementary school 064025 T.A. 2014/2015. Subjects in this study were students of class IV-B totaling 33 people. This type of research is the Classroom Action Research (PTK). Criteria for success of this study is if you reach your goal every indicator ≥ 65%. In the first cycle by the students have been able to understand the concept (distinguishing example and not an example) as much as 57.58%, the students have been able to use the concept of the sum of as much as 69.69%, the students have been able to use the concept of reduction of as much as 42.42%, and the students have been able uses the concept of a combined 60.61%. In the second cycle was obtained 96.97% of students have been able to understand the concept, 75.76% of students have been able to use the concept of addition, 72.73% of students have been able to use the concept of subtraction, and 78.79% students have able to use the combined concept. Based on the above inferred using comics media through STAD cooperative learning model can improve the understanding and use of the concept of fractions to the addition and subtraction.**

Keywords— understanding and using concepts denomination; media comics; cooperative learning STAD

I. INTRODUCTION

According to the Education For All Global Monitoring Report 2012 issued by UNESCO annually (http://www.unitomo.ac.id/), education in Indonesia is ranked 64th for education worldwide from 120 countries. Data Education Development Index (EDI), Indonesia, in 2011 Indonesia was ranked 69th out of 127 countries.

Education is one of the important factors in the development of a country. Education is also a vehicle to improve and develop the quality of human resources. The development of education is rapidly increasing, requires educational institutions to work better in adjusting to the development of science education in our country.

Mathematics is one of the very important field of study in education, both for students and for the development of other disciplines. Position of mathematics in education is very beneficial because mathematics is an educational vehicle that has a meaningful contribution to the future of the nation, especially in the intellectual life of the nation. Moreover, mathematics is also inseparable from science and technology. This is due to the learning of mathematics anyone can develop the ability to think mathematically, logically, critically, creatively and skillfully to solve problems in everyday life.

This is supported by a statement Cocrof (in Abdurahman, 2003) argues that: Mathematical need idajarkan to students because it (1) is always used in all of life, (2) all boding studies require math skills appropriate, (3) requires the target of strong communication, (4) can be used to present information in a variety of ways, (5) improve the ability to think logically, accuracy, and awareness of the room, and (6) give satisfaction to the efforts to solve challenging problems.

But the reality is often the case and face, mathematics is one of the subjects that are very difficult to study, boring, not interested to learn lessons daunting, ranging from education elementary, junior high, high school and even through college. Thus, understanding and mastery of math concepts students is reduced, resulting in student learning outcomes in mathematics has an average value is low.

The material is one of the subjects taught in school fourth grade is fractional. With sub discussion fractions studied by researchers is addition and subtraction of fractions. Here, the students are expected to understand and be able to use the

concept of fractions on the operations of addition and subtraction so that the material and high school students do not feel the confusion in understanding and using the concept of fractions on the operations of addition and subtraction. Because so far there are still many high school students are still confusion in understanding the concept of fractions and master the concept of fractions on the operations of addition and subtraction.

Based on the results of diagnostic tests conducted by researchers at the fourth grade primary school 064 025 Tanjung Selamat conducted on August 5, 2014 obtained a problem where researchers get 3 (9.09%) persons from 33 students have not been able to achieve sufficient category in solving diagnostic tests , with details of 28 (84.85%) students are still not able to achieve the minimum category enough to understand the concept, then 13 (39.39%) students have not been able to achieve minimal category enough in using the concept in addition, 29 (87.88 %) person has not been able to achieve minimal category enough in using the concept of reduction and 24 (72.73%) of people have not been able to achieve minimal category enough in using the concepts of addition and subtraction.

And based on the debriefing conducted by researchers to the three teachers say that students' lack of interest, lack of motivation, and attention given to students who come from outside especially those of parents who cause the child is not in the spirit of learning. Attention in question is to see the development of children's learning in school, teach or supervise children in learning. Not only that, the lack of communication to cooperate between parents and teachers in educating and teaching the child.

Based on that data, mathematical learning still needs to be increased again by making changes in the learning process. Changes in the learning process carried out by teachers, for teachers is an important factor in the overall education system. Teaching styles and media used in the delivery of learning materials that have a teacher to determine the success of learning mathematics As Soemosasmito (in Trianto, 2009):

Effective teachers are teachers who find ways and always trying to get her students involved appropriately in a subject by the presentation of high academic learning time and learning to walk without the use of force techniques, negative or punishment.

As for the changes in the learning process that will be conducted by researchers is to use different models and learning media. The learning model used in this study is a cooperative learning model type STAD. This model is ideal to use on students because the students happy in doing math problems to discuss. And the media used in this study is a comic media since students are still in play.

By using this model, teachers formed a discussion group consisting of sexes and different abilities. Then the teacher presents the material to be taught before teachers give assignments to students for discussion groups with friends group. After the discussion finished, the teacher gives a test individually to see how each member of the group and individual responsibility. In doing these tests, students are not allowed to cooperate among group members but rather the student to take the test individually.

By using the medium of comics through STAD cooperative models, researchers are expected to make changes for the students of SD Negeri 064 025 Tanjung Selamat in the study material especially its fractions in the material addition and subtraction so that the students' understanding and use of the concept increasing.

II. METHODS

This research was conducted in SD Negeri Tanjung Selamat 064 025 which is located at the Flamboyan Raya near Medan Housing Tuntungan. The research was conducted in the fourth grade the first semester of Academic Year 2014/2015. Subjects in this study were students of class IV-B 064 025 Tanjung Selamat Elementary School Academic Year 2014/2015 as many as 33 people. Which is the object of this research is to increase understanding and use of the concept of fractions to the addition and subtraction using comics media through cooperative learning model STAD in fourth grade elementary school Tanjung Selamat 064025 Academic Year 2014/2015. This research is a classroom action research.

III. RESULT AND DISCUSSION

Based on the achievement of results obtained in early diagnostic tests and diagnostic tests the understanding and use of the concept in the first cycle, the data obtained in the following Table 1

Table 1: Description Level results Ability Every Aspect Understanding and Use of Concepts Students At Home Diagnostic Tests and Cycle I. Referring On Performance Indicators

performance indicators	Early		first cycle		Target	
	%	Category	%	Category	%	Category
Understanding the concept	15,15	Very bad	57.58	Bad	65	Pretty good
Using the concept of summation	60.61	Bad	69.69	Pretty good	70	Pretty good
Using the concept of the reduction	12.12	Very bad	42.42	Very bad	65	Pretty good
Using the concepts of addition and subtraction	27.27	Very bad	60.61	Bad	65	Pretty good

According to the table above, obtained the category on one aspect of the understanding and use of the concept has increased but in other aspects decline. If seen from the initial diagnostic test showed that the percentage of students who understand the concept as much as 15.15% (Very bad), but after learning by using comics media through kooperatiff

STAD learning model, increased to 57.58% (Poor). Similarly, the percentage of students who use the concept of the sum of as much as 60.61% (recent), increased to 69.69% (Pretty good). Likewise, the percentage of students who use the concept of reduction of as much as 12.12% (Very bad), having taught using the medium of comics through cooperative learning model STAD increased become 42.42%. (Very bad). And the last with the percentage of students who were able to use the concept of addition and subtraction of as much as 27.27% (Very bad), increased to 60.61% (Poor).

Meaning it can be concluded that an increase in the percentage of students at each aspect of the understanding and use of the concept, but has not reached the specified targets on performance indicators. Thus, the problem on the understanding and use of mathematical concepts students unresolved then learning should be continued in cycle II.

Meaning it can be concluded that the use of media comics through kooperatiff STAD learning model needs to be done next cycle with the additional refinement of the previous cycle.

Based on the achievement of results obtained in the initial diagnostic tests, diagnostic tests understanding of the concept of the I and diagnostic tests understanding of the concept in the second cycle, the data obtained in the following Table 2

Table 2: Results of Level Capabilities Every Aspect Understanding and Use of Concepts Students At Home Diagnostic Tests, Cycle I and Cycle II

Performance Indicators	Early		Cycle I		Cycle II		Target	
	%	Category	%	Category	%	Category	%	Category
Understanding the conc	15,15	Very bad	57.58	Bad	96.97	Very good	65	Pretty good
Using the concept of summation	60.61	Bad	69.69	Pretty good	75,76	Pretty good	70	Pretty good
Using the concept of the reduction	12.12	Very bad	42.42	Very bad	72.73	Pretty good	65	Pretty good
Using the concepts of addition and subtraction	27.27	Very bad	60.61	Bad	78.79	Pretty good	65	Pretty good

According to the table above, obtained the category in every aspect of the understanding and use of the concept has increased, the percentage of students who understand the concept of 15.15% (Very bad), but after learning by using comics media through cooperative learning model STAD in the first cycle increased to be 57.58% (recent) and after repair on the second cycle increased to 96.97% (Very good). Likewise, the percentage of students who are able to use the concept of the sum of the initial diagnostic test as much as 60.61% (bad), but after learning by using comics media through cooperative learning model STAD in the first cycle increased to 69.69% (Pretty Good) and after repair on the second cycle increased to 75.76% (Pretty good). Likewise, the percentage of students who are able to use the concept to a reduction in the initial diagnostic test as much as 12.12% (Very bad), but after learning by using comics media through cooperative learning model STAD in the first cycle increased to 42.42% (very bad) and after repair on the second cycle increased to 72.73% (Pretty good). Likewise, the percentage of students who are able to use the concepts of addition and subtraction in the initial diagnostic test as much as 27.27% (Very bad), but after learning by using comics media through cooperative learning model STAD in the first cycle increased to 60.61 % (recent) and after repair on the second cycle increased to 78.79% (Pretty good).

Meaning it can be concluded that an increase in the percentage of students at each aspect of the understanding and use of the concept and all aspects have reached the specified targets on performance indicators. Meaning it can be concluded that the problem of understanding and use of mathematical concepts students have been resolved and the use of media comics through kooperatiff STAD learning model has been performed optimally, so no need to do the next cycle.

The results of the final value of observation learning cycle I was 70 with enough categories. In the implementation of the teacher is not motivating to students and explain the purpose of learning. And at the end of the second cycle of observation learning value is 88.44 with very good category. In doing so, the teacher has to motivate the students well and the teacher had explained the purpose of learning well.

The final value of the observation activities of the students in the first cycle is not good 50 categories. In practice, there are still students who do not listen and pay attention to the teacher's explanations, the involvement of students in learning by using comics media in receiving less amsih learning and students' ability to take tests understanding and use of the concept of the material being discussed is also lacking. While on the second cycle students' final grades observation activity was 82.14 with both categories. In practice, all students had to listen and pay attention to the explanation of the teacher, student involvement in learning by using comics media in accepting the teaching has improved, and the ability of students to take the test the understanding and use of the concept of the material being discussed is already good.

IV. CONCLUSION

Based on the results of the research presented in Chapter IV it could be concluded as follows:

1. Understanding and use of the concept of fractions to the addition and subtraction in the fourth grade Tanjung Selamat Negeri 064 025 Academic Year 2014/2015 increased by using the medium of comics through cooperative learning model STAD.
2. The process is done in the classroom in order to increase student achievement is good.

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