

**THE IMPLEMENTATION OF GUIDANCE INQUIRY FOR IMPROVING
UNDERSTANDING THE CONCEPT OF FRACTION ADDITION AT
FOURTH GRADE STUDENTS OF STATE MADRASAH IBTIDAIYAH
MALANG 2**

THESIS

BY :

RIZAL FAHROZI

09140048



EDUCATION DEPARTMENT FOR PRIMARY SCHOOL TEACHER

TARBIYAH FACULTY

**THE STATE ISLAMIC UNIVERSITY OF MAULANA MALIK IBRAHIM
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THESIS

Presented to

The State Islamic University Of Maulana Malik Ibrahim Malang

In Partial Fulfilment of The Requirements For The (S- 1) Degree

Sarjana Education (S. Pd)

BY :

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2013

APPROVAL SHEET

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LEGITIMATION SHEET

**THE APPLICATION OF TAI (TEAM-ASSISTED INDIVIDUALIZATION)
METHOD TO IMPROVE 5TH GRADE STUDENTS' ACHIEVEMENT ON
SCIENCE AT MI MIFTAHUL ULUM SINGOSARI MALANG**

THESIS

Prepared and compiled by
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Has been defended in front of the board of examiners on
Monday, April 8th 2013 and has been stated
PASSED

And has been approved by the board of examiners as the requirement to obtain
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DEDICATION

This thesis is proudly dedicated to my beloved parents (Asroji and Kusmyati) , Grandparents, Uncle, Brother and sister, and ms Afiana Yuli Eviyanti and special person who always give me spirit and beautiful love.



MOTTO

Where there is will there is way
(dimana ada kemauan disitu ada jalan)

إِنَّ اللَّهَ لَا يُغَيِّرُ مَا بِقَوْمٍ حَتَّى يُغَيِّرُوا مَا بِأَنْفُسِهِمْ

Artinya: Sesungguhnya Allah tidak merubah Keadaan sesuatu kaum sehingga mereka merubah keadaan yang ada pada diri mereka sendiri. (Qs. Ar-Ra'd : 11)

Alfiana Yuli Efiyanti, M.A.
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ADVISOR OFFICIAL NOTE

Matter : Thesis of Rizal Fahrozi

Malang, 30 March 2013

Appendices : 4 (four) exemplars

The Excellency,
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Assalamu'alaikum Wr. Wb.

After carrying out several times for guidance, both in terms of content, language and writing technique, and after reading the following thesis:

Name : Rizal Fahrozi

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FOR IMPROVING UNDERSTANDING THE
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IBTIDAIYAH MALANG 2

As the advisor, we argue that this thesis has been proposed and tested decent. Thus, please tolerate presence.

Wassalamu'alaikum Wr. Wb.

Advisor,

Alfiana Yuli Efiyanti, M.A.
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STATEMENT LETTER

Hereby I declare that on this thesis there is no work that ever submitted to obtain bachelor degree on one university, and as far as I know, there is no work or opinion that ever written or published by another person, except for in writes that is referenced on this thesis and mentioned on the bibliography.

Malang, 30 March 2013

Rizal Fahrozi

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All praises and gratitude be to Allah SWT, who has given me power and health in finishing my thesis entitled *The Implementation of Guidance Inquiry For Improving Understanding The Concept of Fraction Addition At Fourth Grade Students of State Madrasah Ibtidaiyah Malang 2*, his mercy and peace are given for the prophet Muhammad SAW who has brought us from the darkness to the lightness era by Islamic Values of The Holy Quran.

This thesis is intended to fulfill the requirements to achieve degree of sarjana Education in Education Department of Primary School Teacher Tarbiyah Faculty The State Islamic University of Maulana Malik Ibrahim Malang. Yet hopefully through this thesis i can give contribution to the richness of the knowledge, especially in the field of Classroom Action Research.

Furthermore in completing this thesis, i do realize that i will not get succeeded without any supports from other people, firstly i would like to thank those who guided me in writing of this thesis. I express my gratitude for

1. My beloved Parents (Asroji and Kusmyati)
2. Mr. Prof. Dr. Imam Suprayogo as the Rector of The State Islamic University of Maulana Malik Ibrahim Malang,
3. Mr. Dr. Zainuddin, MA as the Dean of Tarbiyah Faculty.
4. Mrs. Dr. Hj. Sulalah, M. Ag as the head of Education Department of Primary School Teacher
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7. Mrs. Eko Ufi Nuskhayati S. Pd as the mathematics teacher in MIN Malang 2
8. My Best Person who always encourage me (Wielda Noer Arifiana), and my best friends around me (all friends in the boarding house)
9. and all elements which help me in all aspects of writing this thesis

The Author, realize there are many mistakes and have not perfect writing yet in this research, we are waiting for critics and commands that able to make

this thesis better. The author hopes this thesis able to give valuable contribution knowldge.

Amiin- amiin ya Robbal Alamiin

Malang, 28 March 2013

Author



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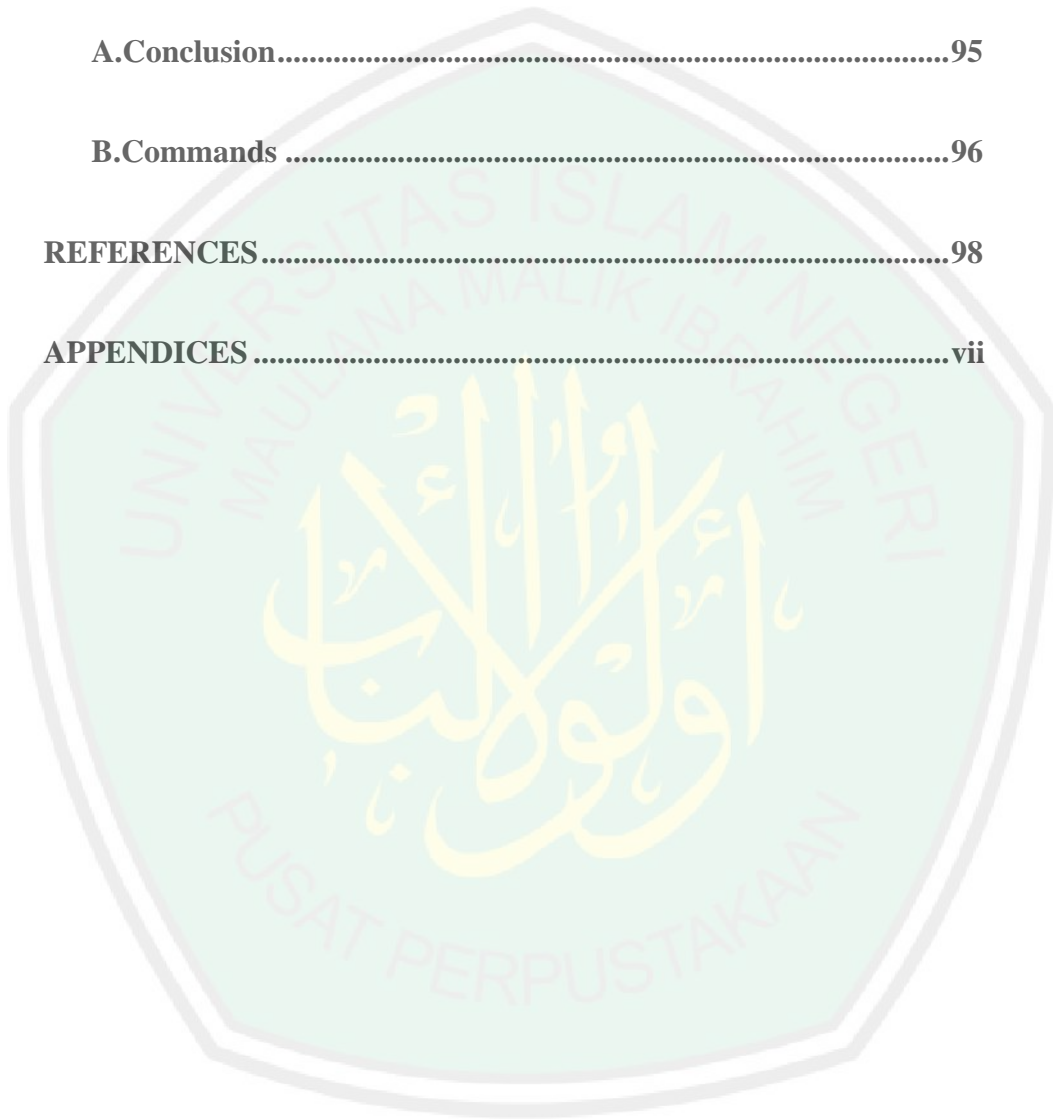
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ABSTRACT

Fahrozi, Rizal. *The Implementation of Guidance Inquiry For Improving Understanding The Concept of Fraction Addition at Fourth Grade Students of State Madrasah Ibtidaiyah Malang 2*. Thesis. Education Department For Primary School Teacher Tarbiyah Faculty The State Islamic University Of Maulana Malik Ibrahim Malang. Advisor: Afniana Yuli Ehyanti, M. A

Key Words : Guidance Inquiry, Understanding The Concept, Fraction Addition

According to standard of DEPDIKNAS, Mathematics learning is the learning that stress students in the process of gaining knowledge both of two aspects (understanding the concept and result achievement of students. In the fact both of aspects are have not achieved yet, it seen from many of schools still targeting on students result achievement, for example in the State of Madrasah Ibtidaiyah Malang 2, especially in the fourth grade students (IV A), in the field and interview result by math's teacher the problem os this class in understanding the concept. Fortunately the materials of mathematics of the day is Fraction addition.

Fraction addition is divided on the main parts, first fraction addition with equal denominator (*Penyebut*) and unequal denominator. From we are still in the primary school we always confused with the origins of how to add fraction addition with unequal denominator, teachers also say (Doctrine) you have to equalizing the denominator, it cases also described by the math's teacher in the MIN Malang 2. It problem is rised because high of standard achievement in this school, overthere many of teachers take a shortcut way. In order to respon and solve this problem researcher conducted to do research in this class or we call it as The Classroom Action Research (CAR),

Classroom Action Research here, is using thei qualitative descriptive approach for describing the result of research, which positioning researcher as the data collector, observer and reporter of the research result. To over come the problem in the fraction addition, for improving understanding the concept of students by implementing guidance inquiry and using folding paper (*kertas lipat*) for helping students activity to find and prove the concept truly. The research activity of this research is begin from pre test give the treatment tru the cycle and do the post test in the final meeting.

From the observation and the findings of research there happened improvement of students understanding the concept of fraction addition by

guidance inquiry there are students average achievement and The improvement of students in understanding the concept of fraction addition is totaled by percentage of each students improvement in the Cycle I is 56 % and in the Cycle II is 27,17 % it means average improvement of student's understanding the concept of fraction addition is 83, 17 %. For supporting and proving students really understanding the concept of fraction addition there are also describe the pre- test result with average students achievement is 51, 48 and the post test result average of students have achieved become 84, 62.



ABSTRAK

Fahrozi, Rizal. *The Implementation of Guidance Inquiry For Improving Understanding The Concept of Fraction Addition at Fourth Grade Students of State Madrasah Ibtidaiyah Malang 2*. Thesis. Education Department For Primary School Teacher Tarbiyah Faculty The State Islamic University Of Maulana Malik Ibrahim Malang. Advisor: Ainiyati Yuni Enyanti, M. A

Key Words : Guidance Inquiry, Understanding The Concept, Fraction Addition

Berdasarkan standar pendidikan nasional dalam DEPDIKNAS, pembelajaran matematika adalah pembelajaran yang menekankan dalam proses pemerolehan pengetahuan dalam dua aspek (dalam memahami konsep dan prestasi belajar siswa). Pada kenyataannya kedua aspek tersebut belum dapat tercapai secara maksimal di sekolah, sekolah masih menekankan pencapaian pada hasil belajar saja. Contohnya adalah pada sekolah MIN Malang 2 yang terdapat pada kelas IV A. Berdasarkan penelitian di lapangan dan hasil interview dengan guru matematika, kesulitan belajar siswa terdapat dalam pemahaman konsep pembelajaran tersebut, contohnya pada pemahaman konsep pada materi penjumlahan pecahan.

Penjumlahan pecahan dibagi dalam dua bagian yaitu penjumlahan dengan berpenyebut sama dan tidak berpenyebut sama. Sejak kita berada pada jenjang pendidikan di sekolah dasar, kita selalu di bingungkan dengan asal usul bagaimana menjumlahkan pecahan yang berpenyebut tidak sama, dan kiat terbiasa dengan gaya belajar yang diberikan pada guru secara doktrinasi. Hal ini dipaparkan oleh guru matematika MIN Malang 2. Hal ini muncul akibat tingginya standar hasil belajar dalam pendidikan yang ditargetkan, sehingga guru mengambil jalan pintas dengan melakukan gaya belajar dengan konvensional. Dari beberapa penjelasan singkat diatas maka penelitian disini harus dilakukan untuk meningkatkan pemahaman konsep belajar siswa dengan melakukan Penelitian Tindakan Kelas (PTK).

Dalam PTK ini pendekatan yang digunakan adalah menggunakan pendekatan kualitatif deskriptif untuk memaparkan hasil dari penelitiannya, dimana peneliti sebagai instrumen utama. Untuk meningkatkan pemahaman konsep penjumlahan pecahan siswa, dalam Penelitian Tindakan Kelas ini menggunakan pendekatan inquiry secara terbimbing dengan bantuan media kertas lipat agar siswa mampu memahami konsep secara mendalam.

Dari hasil penelitian yang dilakukan selama 2 siklus diperoleh bahwa pada siklus I peningkatan pemahaman konsep siswa sebesar 56% dan pada akhir siklus II bertambah 27,17% menjadi 83,17%. Pemahaman siswa tersebut juga dapat dikategorikan maksimal karena didukung dengan hasil pre tes yang semula rata-rata pencapaian belajar siswa adalah 51,48%, dan pada akhir pertemuan di siklus 2 menjadi 84,62%, dalam hasil penelitian ini menunjukkan bahwa pemahaman belajar siswa dapat ditingkatkan melalui pendekatan belajar dengan menggunakan pendekatan inquiry terbimbing.





CHAPTER I

INTRODUCTION

A. The Background of Study

Mathematics is universal science as the basic of modern technology development, has the important role of several discipline to make high level thinking for human.¹ Based on DEPDIKNAS 2006 about the goal of Mathematics purposeful the *learners able to have these capabilities*:

1. Understanding the concept of mathematics, explaining the relation among of concept, implicating concept of algorithm, flexibly, accurate, efficient, in problem solving.
2. Using their logical thinking in pose of seam, doing manipulation of mathematic in generalization, arranging proof, explaining conception, and mathematic statement.
3. Solving the problem that include capability to understand the problem, designing model of mathematic, and interpreting solution.
4. Communicating the conception by symbols, table, diagram, or be
5. Students have respect attitude toward function of mathematics in daily life, there are curious thinking, attention, and interest to learn

¹ Standar kurikulum Pendidikan Nasional tentang standar pembelajaran Matematika. 2006. page 416

about mathematics, self confident, and hard work to solve the problem.²

The effective planning of Learning activity can be seen from the methodology which used by teacher in that implementation, a good methodology is used by teacher in learning process which the content of that methodology including student activity, students able to mastery the learning material conceptually, that has described in PERMENDIKNAS MATEMATIKA above, there are Mathematics is the object of study which has abstract object, and established by deductive thinking process, it means concept gotten as logic effect from the previous truth and the result is strong and clear relation of mathematics concept.

In the learning process, the teacher expected able to make the atmosphere of learning activity to invite and stimulate students interest to active in the learning process, for achieving the goal of mathematics learning that has described by PERMENDIKNAS about mastery of concept mathematics is being something important that must be done by teacher, teacher must arrange the best learning methodology for students by using the approaches, methods, in syllabus and lesson plan which proper by students development, to be applied in the classroom for understanding the materials in the mathematics subject, the proper

² Ibid. page 417

learning will make easy students for understanding the context of learning which studied.³

Education in basic level, ideally is the education which stress the mastery concept in every materials on subject, when the concept implanted truly it will make student understand comprehensively and meaningfully, student can prove like in mathematics materials by making hypothesis, investigating, doing, and proving, it also call by the part of inquiry, however in the fact learning process in basic level always stress the result of basic competence achievement. For an example in State of Madrasah Ibtidaiyah Malang 2 (MIN Malang 2), this school is good enough school or we can call it as representative school in academic and non academic aspect, it can be seen from number of achievement from the students. In the field, of MIN Malang 2 has paralel class in every level of grade there are three paralel class in every level. A good object that must be researched in researcher oppinion on the fourth grade, in this level learners are in transition condition, in cognitive, affective, and pshycomotor. In the earlier grade on first grade, second grade, and third grade, the condition of learning process chracterstic of arrange of planning and learning are use the concrete learning, but on upper class especially in fourth grade begins found the problems, it is the effect of transition condiotion. “In the fourth grade students find average problem, for an example in mathematics, mathenatics in this school as the favorite student’s subject, they able to master content of matterials nicely, but when we ask to prove and connect

³ PERMENDIKNAS p. 3

it by their own knowledge in daily life, they can not life it, it problem almost happened to every students” said math’s teacher.⁴

Students in fourth grade having process of mathematics subject quick and effective on result process, but whe we look back standard of mathematics learnindg process that conveyed by government. There are mathematic learning is process of studets thinking conceptually, and in the fourth grade students have not achieved yet this standard. Dominanly learning characteristic is stressing in learning result skill, absolutly it’s not meanningfull and still far correlation by the standard of governance mathematics leaning.

Materials in mathematics which often rise the problem is Fraction. In the fact, this mattrerials always be the obstacle of student. For litle example in the fraction addition, students able to overcome the problem of fraction additon if the denominator (penyebut) of fraction is equal, however when the content of this matterials on unequal fraction denominator, and students must prove it conceptually students, begin felling hard and confused to solve it, and student have can not yet do and prove it conceptually and realicticaly, these phenomenon as the reason of researcher do a reaserch in classroom which expected to solve these problem for students, especially on equation of unequal denominator of fraction.

In the fraction learning materials, many obstacle faced by teacher, usually teacher uses shortcut, for achieving indicator of learning in the final result of

⁴ Interview by math’s teacher on 31 January 2013

students learning. Something like this is effecting hard to prove that mathematics is the science which focusing in process of investigating, proving, finding, and concluding toward materials (Fraction), overthere approach of learning can be maximalized.

The approach which focus on construct the learning knowledge of students is the approach which researcher choose as the approach of this research. One of example as the ideal and recomended by researcher to be used in claasroom is Inquiry . Inquiry approach is the approach that stressing students active in the learning activity and students able to construct the knowldege according their activity on gaining knowledge. Inquiry approach that researcher used is not pure inquiry, but in the impenatation use inquiry by direct teacher guides, we can call it as (Guidance Inquiry), the reason of researcher uses guidance inquiry, condition of students in fourth grade, especially Class A is students which various background of skill of thinking. In this atmosphere teacher must be able to make active learning condition whose be done by students, overthere teacher needs to choose approaches and methods of learning in increasing mastery of concept by considering of student development.

Accurate learning will make easy the process of learning and helpfull the students in understanding materials that studied, by implementing guidance inquiry it can be proved in the clasroom, absolutly teacher can not let his students to do all activities in the process of implementation of inquiry independently be done by student. Teacher must guide, begins from earlier activity untill the end of activity, in the fase of investigating, finding, and

conculsing, absoulutly done by students, but we have to remember teacher must guide all of the steps of activity, it means learning activity do not be manipulated by students, and avoid the missconception of learning in the fraction for example.

According to several statetment above, overthere we nee to do a claaasroom action reseach which expected able to increase and understand the cocnept of mathematics, especially in the addition of Fraction.

Here, researcher do a reaserch by using guidance inquiry as the approach to solve the problem in the Classroom Action Reaserch, and the tittle of this reaserch is : **THE IMPLEMENTATION OF GUIDANCE INQUIRY FOR IMPROVING UNDERSTANDING THE CONCEPT OF FRACTION ADDITION AT FOURTH GRADE STUDENTS OF STATE MADRASAH IBTIDAIYAH MALANG 2**

B. The Focus of Study

Based on th description of background of study above. The focus of study of this research the focus of study are as follows :

1. How is the preparation of implementation of guidance inquiry for improving understanding the concept of fraction addition at fourth grade students of State Madrasah Ibtidaiyah Malang 2?
2. How is the process of the implementation of guidance inquiry for improving understanding the concept of fraction addition at fourth grade students of State Madrasah Ibtidaiyah Malang 2?
3. How is the evaluation of the implementation of guidance inquiry for improving understanding the concept of fraction addition at fourth grade students of State Madrasah Ibtidaiyah Malang 2?

C. The Objectives of Study

Based on the focus of study stated above, the objectives of study of this research are as follows :

1. To describe the preparation in the implementation of guidance inquiry for improving understanding the concept of fraction addition at fourth grade students of State Madrasah Ibtidaiyah Malang 2
2. To describe the process of the implementation of guidance inquiry for improving understanding the concept of fraction addition at fourth grade students of State Madrasah Ibtidaiyah Malang 2

3. To describe the evaluation of the implementation of guidance inquiry for improving understanding the concept of fraction addition at fourth grade students of State Madrasah Ibtidaiyah Malang 2

D. Significances of Study

This research is described empiric data, for the important of improvement quality of learning in the school, especially of concept learning in mathematics students, result of this research can be used as the basic of thinking of management of approach development, strategy, and method of teaching and learning in the class, especially significance of this research are as follows :

1. Teacher or researcher :

This paper expected to help teacher in conveying mathematic learning as the literature of learning approach, overthere the goal of mathematics learning can be achieved as good as it can, not only about the result of learning but process of gaining the concept of learning.

2. Student :

By this classroom action research, will helpfull students to active in learning process, including their activity to get the knowledge by their own experiences, and able to understand concept of mathematics comprehensively.

3. School :

The significance of this research for the institution (school), As the consideration thing to fix the system of teaching learning skill for the teachers as the main elements as the instructor of teaching and learning, and also to solve the problem related by teaching and learning process, overthere it will add confidence from internal and external institution

E. Limitation of the Study

In order to avoid rife of discussion of this study, the researcher gives limitation of this study are as follows :

1. Subject of study : the subject of this study is Fourth grade students of State of Madrasah Ibtidaiyah Malang 2
2. Object of study : the main object this study is the improvement of understanding the concept of fraction addition
3. Approach of learning : the researcher uses Guidance Inquiry

F. Operational Definition

To avoid miss understanding in this research, researcher needs to clarify the operational definition as below :

1. Guided Inquiry : is the approach that teacher gives question for students, in order to conduct students to the discussion. That teacher has main role to determin the problem and by teacher's guide students solve the problem, in order to understand the concept of subject matter⁵.

⁵ Jauhar Mohammad, *Implementasi PAIKEM: dari behavioristik sampai konstruktivistik*, (Jakarta: Pustaka Raya, 2011), page 69

2. Fraction addition: is the part of mathematic material that becomes main problem of it is students in undersanding of the concept
3. Denominator : in the mathematics is known as the (*penyebut*)
4. Numenator : in the mathematics is known as the (*pembilang*)

G. Previous Research

In this part, researchers describe some relevean research with classroom action research will be doing research, the subject of previous research literature is the reason for researchers to conduct research in the Madrasah Ibtida'iyah Malang II, the following are the results of previous studies:

- (1) From preivous research that has done by Harni Ningsih, Gustimal Witri in the Journa of Education entitled *Penerapan Pembelajaran Inquiry Terbimbing Untuk Meningkatkan Hasil Belajar Matematika Kelas IV SD Negeri 105 Pekanbaru*.in their journal have gotten the result of research are as following description : in the daily test of cycle I is gotten average of students achievement who complete 18 students, the achievemen was 68, 14 %. On the cycle II who did not complet are 3 students.who complet by 28 students, the achievement was 88, 7%, the increase from cycle I and cycle II was 20, 3%, from the data of result the research in the journal that conducted by Hari is

proving that guided inquiry is able to improve students outcomes or achievement.⁶

- (2) Research conducted by Nur Rohman *Pendekatan Contextual Teaching and Learning dengan metode Inquiry untuk meningkatkan motivasi belajar siswa MI Al Huda Malang*. From the conclusion of the research conducted by Nur Rohman are learning are used by teachers is still conventional, so the lessons learned by the students seem boring, because learning is dominated by the paradigm of learning Teacher-Centered, after the holding of studies using the Inquiry as an approach to learning, students become more lively and exciting so the motivation, mastery of concepts, as well as student achievement can be improved, the exposure of the research data Nur Rohman is on the first cycle known student interest in the class is very low, 40%, the data is known from enthusiastic students participating in learning activities in science, from the questions students posed questions to the teacher. In the second cycle appears there is an increase in the activity of learning that is about 55%, it is enough to prove that the Inquiry approach that researchers use to produce reasonably good results, and at last the Cycle III Cycle Inquiry approach that researchers use in the classroom to foster students' interest in learning , search the students to be active in the learning information, students can interact with both among

⁶ Harni Ningsih. Journal. *Penerapan Pembelajaran Inquiry Terbimbing Untuk Meningkatkan Hasil Belajar Matematika Kelas IV SD Negeri 105 Pekanbaru*. 2010. Primary School Teacher Department Of Riau Universtiy

fellow students, so the performance can be improved mastery learning well with the percentage of 80%.⁷

- (3) Further research conducted by Mikrotul Jamilah, "*Penerapan Pendekatan CTL melalui metode Inquiry dan Tanya Jawab Untuk Meningkatkan Pemahaman Konsep Energi Bunyi Pada Siswa Kelas IV MI Al Fattah Banjarejo Pakis Malang*". Based on the results of research conducted by Jamilah Mikrotul that learning methods Inquiry in class IV MI Al Fattah Pakis Malang, comprehension skills of students in sound energy can be increased, which in its early learning system that teachers use the traditional look (ie in the absence of authentic evidence of student learning material), which lead to an understanding (mastery) concept students are not embedded. Having conducted research with Inquiry approach increased student understanding of concepts. Improving the quality and effectiveness of learning in research Mikrotul Jamilah seen from two cycles performed in foster research progress is excellent, an increase from cycle I to cycle II is from 58% until 87%.⁸

H. The Systematic of Discussion

The writing of this the thesis will be divided into chapters, with a view to facilitate the reader in understanding the content and review of this paper. The following systematic are:

⁷. Nur Rohman, Thesis *Pendekatan Contextual Teaching and Learning dengan metode Inquiry untuk meningkatkan motivasi belajar siswa MI Al Huda Malang*. 201

⁸. Mikrotul Jamilah, Thesis "*Penerapan Pendekatan CTL melalui metode Inquiry dan Tanya Jawab Untuk Meningkatkan Pemahaman Konsep Energi Bunyi Pada Siswa Kelas IV MI Al Fattah Banjarejo Pakis Malang*".2009

- Chapter I** : An introduction. In which consists of the key points are: background of the research, problem of the research, objectives of the research, the significance of the research, Limitation of the study, Operational definition and Systematic of discussion.
- Chapter II** : Review of Literature. In this chapter the researcher discusses about the fraction, math learning, inquiry approach, and understanding the concept
- Chapter III** : Discuss about research method, approach and type of research, the attendance of researcher, research setting, data source, technique of data collection, analysis of data, checking validity, cycle of research, achievement criteria.
- Chapter IV** : The result of the research. In this discussion contains about the object of research that includes the discussion about the result of research data in the form of description of fourth grade students, pre test and post test, planning of action, action, reflection, and evaluation.
- Chapter V** : In this chapter is discussion, in this chapter is discuss the result of research that has formulated on focus the study like in the point of preparation, process and evaluation
- Chapter VI** : The closing which contains the conclusion and suggestion of the research.

CHAPTER II

STUDY OF LITERATURE

A. Fraction

Fraction is known since old the time in the *Old Egypt*, arround 1500 before Masehi. Egyptian uses the fraction in their system of their fraction like ,

$\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{6}$. for the example figure of the fraction is like it :

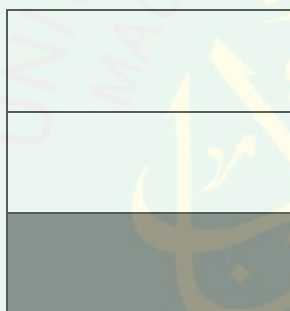


Figure 2. 1 (*Figure of fraction*),

It means the blocked area is $\frac{1}{3}$ part of all area, the fraction also called by multiplication. $\frac{1}{3}$, that fraction can be assumed as the 1 divided by 3 or 1 : 3

Generally fraction us conducted by formula $\frac{a}{b}$, by the note a = numenator (*Pembilang*), and b = denominator (*penyebut*).¹

B. Fraction Addition

In the Fraction matterials in the mathematics subject, there are known the matterial of raction addition (with equal denominator and

¹ Abdussakir. *Matematika 1 kajian integratif matematika dan Alquran*. Malang. 2009. UIN Press

unequal denominator), fraction addition is described as fraction that

added by another fraction for example $\frac{1}{4} + \frac{2}{4}$,

The illustration of that fraction addition with equal denominator is as follow :

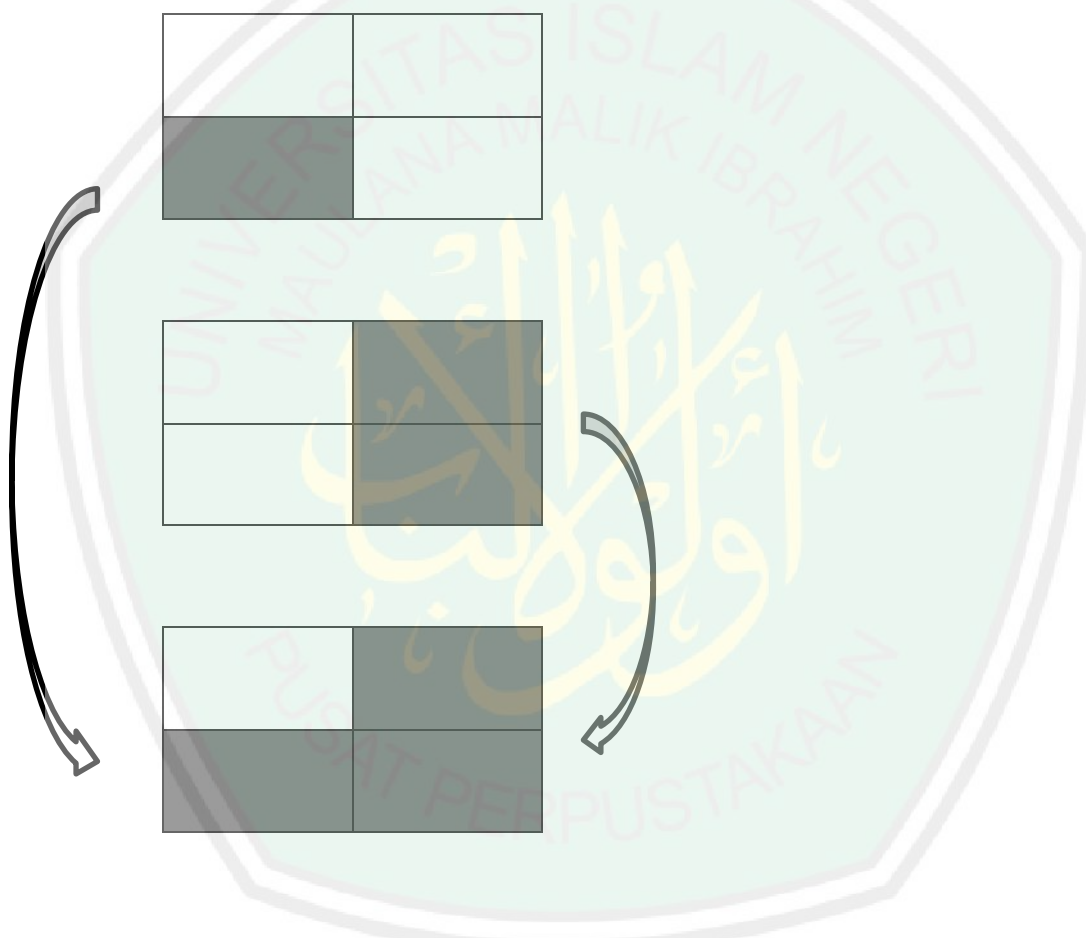


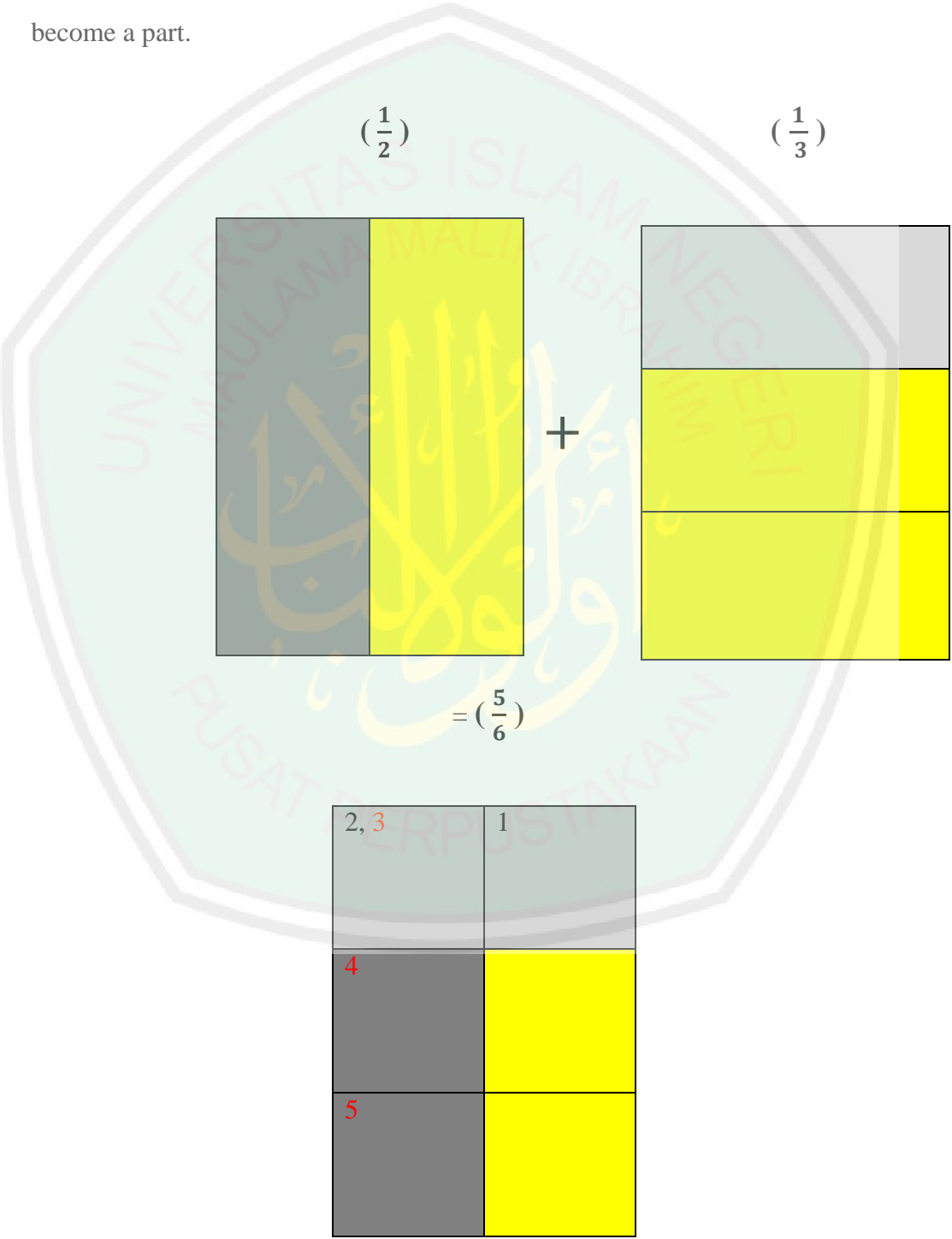
Figure 2. 2 (fraction addition Scheme $\frac{1}{4} + \frac{2}{4} = \frac{3}{4}$)

In the another materials ther are another topic with fraction addition with unequal denominator and the illustration of the matterial as follow :

Example = $\frac{1}{2} + \frac{1}{3}$, by the formula it can be answered

$$\left(\frac{1}{2} + \frac{1}{3} \right) = \frac{5}{6} = \rightarrow \left(\frac{1 \times 3}{2 \times 3} + \frac{1 \times 2}{3 \times 2} \right) = \frac{5}{6}$$

Fraction addition ($\frac{1}{2} + \frac{1}{3}$), in the illustration is the 2 papers have combined become a part.



*The blocked boxes are **Numenator**, and the number total of boxes are **denominator**.*

Figure 2. 3 (fraction addition Scheme with unequal denominator $\frac{1}{2} + \frac{1}{3} = \frac{5}{6}$)

C. Learning of Mathematics

Erman Suherman (2003: 8) states that the learning event, along with the learning process will be more focused and systematic than learning solely from experience in the social life of the community. Learning with the learning process, include the role of teachers, teaching materials, and enabling environment deliberately created. Thus, in this case the ability to organize the components in the learning is needed, so the components can interact optimally so that educational goals can be achieved.²

"Learning is persisting change in human performance or performance of potential [brought] about as a result of learner's interaction with the environment to change (or have the capacity to change) one's level of ability or knowledge".

In the learning of mathematics in schools, teachers should select and use strategies, approaches, methods, and techniques that actively involve students in learning, both mentally, physically, and socially. In active learning math should not form a group, active learning in large

² ²Nuri Rokhayati. *Peningkatan Penguasaan konsep matematika melalui model pembelajaran guided Discovery-Inquiry pada Siswa kelas IIV*. page 9

classes can be happened.in the learning mathematics students brought to the watch, guess, to do, to try, to answer the question why, and if it might be argued. The principle of active learning is expected to foster a creative learning in objectives of mathematics and critical mathematics learning, Stressing not only on training skills and memorized facts, but on the understanding of the concept. Not just the "how" of a problem to be solved, but also the "why" question can be resolved in a particular way. In practice, of course adjusted to the level of mathematical thinking of student . On the early stage form of the human experience in a world empirically, since mathematics as a human activity then processed the experience in the world of ratios, prepared an analysis and synthesis with the reasoning in the cognitive structure, so comes the a conclusion in the form of mathematical concepts.³

D. Math Concepts

In order for the mathematical concepts that have formed it to understand other people and can easily be manipulated precisely, we use the notation and terminology carefully agreed global (universal), known as the language of mathematics. According to Johnson and Rising (Erman Suherman, et al, 2001: 19) mathematics is thought patterns, patterns of organization, logical proof. Mathematics is a language that uses terms defined carefully, it is clear, accurate, representation with symbols, more a

³ Ibid p. 30

symbol of the idea of language in the sound. Meanwhile, Reys, et al (1984) in his book says that matematika is already about patterns and relationships, a road or way of thinking, an art, a language, and a tool. Then, Kline (1973) in his book also said that mathematics is not science alone that can be perfect for himself, but the math is primarily to help people to understand and master the social, economic, and natural. According to Cornelius cited by Mulyono Abdurrahman (2003:253) mathematics should be taught to students because:

- a. Means a clear and logical thinking
- b. Means to solve the problems of everyday life
- c. Means recognize the patterns of relationships and the generalization of experience
- d. Means to develop creativity
- e. Means to raise awareness of culture development.⁴

The presentation of mathematical concepts or new ideas should be based on previous experience because the students will remember the new concepts better if the concept does not conflict with the concept that has been known previously. In the mastery of mathematical concepts and structures, students must form a concept or structure through previous experience. Concept or a new structure should be meaningful to students means the concept is compatible with the capabilities of the students and relevant to cognitive ability.

⁴ Ibid p. 11-14

Some steps can a teacher teach a concept in mathematics include:

- a. Defining an object
- b. Provide one or more examples of an object
- c. Giving an object instance stating the reasons why the object is an instance
- d. Compare and confirm objects shown by a concept
- e. Stating necessary and sufficient condition that an object can categorized into different types of objects
- f. Provide one or more of an object that is not an example of other objects
- g. Giving reasons why an object that is not an example of other objects
- h. Provide characteristics that are not necessary and sufficient condition objects shown by a concept.⁵

E. Inquiry Approach

1. Definition of Inquiry Approach

Inquiry approach is a series of learning activities that emphasize the process of thinking critically and analytically to seek and find their own answer to the problem in question. The process of thinking itself is usually done through a question and answer between teacher and student.

⁵ Ibid. 34

This learning approach is often also called *heuristic* strategies, which is derived from the Greek, meaning that *heurisken* (find).

Inquiry approach departs from the assumption that since man is born into the world, humans have the urge to find their own knowledge. Curiosity about the circumstances surrounding nature is human nature since he was born into the world. Since childhood, people have a desire to know all things through the senses of taste, hearing, vision, and other senses. To adult human curiosity is continuously evolving to use the brain and mind. Human knowledge would be meaningless (*meaningfull*) when it is based on curiosity. In order that inquiry approach was developed.⁶

Inquiry approach was based on the view that students as subjects and objects in the study, have a basic ability to develop optimally according to ability. The learning process should be viewed as a stimulus to challenge students to perform learning activities. The role of teachers putting themselves more as mentors or leaders of learning and learning facilitators. Thus, students are conducting their own or in a group to solve problems with teacher guidance.

Inquiry approach is an approach to teaching that seeks lay the groundwork and develop scientific thinking. This approach puts more students to learn on their own, develop creativity in problem solving. Students are strongly placed as the subject of the study. The teacher's role in the inquiry approach to learning is a mentor and facilitator of learning.

⁶ Wina Sanjaya, *Strategi Pembelajaran*, Kencana Prenada Media Group, Jakarta 2007, hal: 196

The main task of the teacher is to select a problem that needs to be posed to the class to be solved by the students themselves. The next task of the teacher is to provide learning resources for students in order to solve the problem. Of course, the guidance and supervision of the teachers are still needed, but such interference or intervention to the students in problem-solving activities, should be reduced.⁷

Perform using the inquiry method of learning means that students learn to control the situation at hand when dealing with the physical world, using the techniques of research carried out by experts. To know the issues, ask questions, suggested research measures, giving a clear exposure, make predictions, and explanations that support experience.⁸

Conducting learning using inquiry method means Learnt to students to control the situation faced when dealing with the physical world, using a technique performed by the trialists. To know the issues, ask questions, suggested research measures, giving a clear exposure, make predictions, and explanations that support experience.⁹

2. Types of Inquiry Approach

Inquiry approach can be divided into two general categories: (1) guided inquiry (*guided inquiry*) and (2) independent inquiry or open (*open-ended inquiry*). The difference between the two lies in who is asking the question and what the purpose of the activity. In guided inquiry activities teachers guide students with

⁷ Nana Sudjana, *Dasar-dasar Proses Belajar Mengajar*, Sinar Baru Algesindo, Bandung 2005, page: 154

⁸ Nuryani, *Strategi Belajar Mengajar Biologi*, Universitas Negeri Malang, Malang 2005, page: 95

⁹ Ibid, page 96

provide initial questions and lead a discussion. Inquiry guided to do at the beginning of a lesson for students not used, to then be followed by the *open ended inquiry* or open inquiry. In open inquiry teacher acts as a facilitator, a question raised by the students and the solution was designed by students. The results from the breakdown may lead to new questions which is a development of the previous problem.¹⁰

3. Chararcters of Inquiry

There are several things that characterize the main method of inquiry, namely:

- a. Inquiry Approach emphasizes the student activity maximally to seek and find, that the method of inquiry puts students as a subject of study. in the process learning, students not only acts as a receiver lessons through teacher's explanation verbally, but they role is to find itself the core of the subject matter that itself.
- b. The entire activity of the student is directed to seek and find the answers themselves of something in question, which is expected to cultivate an attitude confidence (*self belief*). Thus, the method of inquiry put the teacher rather than as a source of learning, but as a facilitator and motivator of student learning.

¹⁰ Ibid. page 97

- c. The purpose of inquiry is to develop methods ability to think in a systematic, logical, critical, or develop intellectual abilities as part of the mental processes. Thus, the inquiry method of students not only required in order to master the subject matter, but how they can use their potential.

4. Inquiry Approach Principles

In the use of methods of inquiry, there are some principles that must be considered by every teacher. These principles namely:

- a. Oriented to the development of intellectual.

The main purpose of the inquiry method is the development of thinking skills. Thus, the approach to this inquiry besides oriented learning outcomes are also oriented the learning process.

- b. The principle of interaction.

The learning process is essentially a process of interaction, better interaction between students and student interaction with the teacher, even the interaction between students and the environment.

- c. Principles of asking.

The role of teachers should be done in using the inquiry method is a teacher as questioner. Therefore, the ability

students to answer every question was essentially is part of the thought process.

d. The principle of learning to think.

Learning is not just to remember the facts, but learning is a process of thinking (*learning how to think*), namely the process of developing the potential of the whole brain, left brain both and right brain; either reptilian brain, the limbic brain, and the brain neokortek.

e. The principle of openness.

Learning is a process of trying different possibilities. Everything is possible. Therefore, children should be given the freedom to try out along with the growth of logic and his reason.

5. Implementation Steps of Inquiry Approach

Inquiry approach of teaching, including a modern approach, very desirable to be implemented in every school. Allegations that the school created a culture of silence, do not be occur when this approach is used. Inquiry method can implemented if met the following requirements:

- a. Teachers should be skilled to choose issues that are relevant to presented to the class (the problem comes from teaching materials that challenge students / problematic) and in accordance with reason students.
- b. Teachers should be skilled foster student motivation and creating a fun learning situation.
- c. The existence of facilities and learning resources are sufficient.
- d. The freedom of students to think, work, and discuss.
- e. Participation of each student in each learning activity.
- f. Teachers are not a lot of interference and intervention against student activities.¹¹

In general, the learning process by using inquiry can be conducted by using the steps as follows:

- a. Orientation.

Orientation step is a step to foster an atmosphere or climate responsive learning. In this step the condition that the student teacher is ready to implement the learning process.

Some things that can be done in stages orientations are:

- (1) Describe the topic, objectives, and expected learning outcomes can be achieved by the students.

¹¹ Nana Sudjana, *op cit*, page: 154-155

(2) Describe the main points of the activities to be done by the students to achieve the goal. At this stage described measures of inquiry and the purpose of each step, starting of steps to formulate the problem to formulate conclusions.

(3) Explain the importance of the topics and learning activities. It is done in order to give students the motivation to learn.

b. Formulate the problem.

Formulate the problem is a step to bring students a question that contains a puzzle. The issues served was an issue that challenges students to think solve the puzzle. It is said, the puzzles in the formulation of the problem to be studied because it is certainly a problem there is an answer, and students are encouraged to look for the right answer. Some things must be considered in formulating the problem, including:

(1) The problem should be formulated by the students. Students will have a high motivation to learn when involved in formulating the problem was about to be reviewed.

(2) The problem studied is the problem of containing puzzles definite answer. That is,

teachers should encourage students to formulate answers to problems that require the teacher is already there, the student seek and obtain the answer for sure.

- (3) The concepts in the problem are concepts that have been known in advance by the student. That is, before the matter was examined further through the process of inquiry, teachers need to be sure in advance that the students already have an understanding of the concepts in the formulation of the problem.

c. Formulate hypotheses.

The hypothesis is a temporary answer to a problem under review. As an interim response, the hypothesis needs to be verifiable. Individual's ability or potential for thinking has basically been owned since the individual was born. Potential thinking starts from the ability of each individual to guess or think-think (hypothesize) of a problem.

d. Collecting data.

Collecting data is the activity of capturing the information needed to test the hypothesis. In the inquiry method,

collecting data is a very important mental processes in intellectual development. The data collection process not only requires a strong motivation in learning, but also requires patience and the ability to use the potential of thinking. Therefore, the task and the role of the teacher in this stage is to ask questions that encourage students to think of looking for the information needed.

e. Proving the hypothesis.

Testing the hypothesis is the process of determining the answer that is considered acceptable in accordance with the data or information obtained by collecting data. The important thing is to find a hypothesis to test students' level of confidence in the answers given. In addition, testing the hypothesis also means developing the ability to think rationally. That is, the truth of the answer given not only by argument, but must be supported by the data found and accountable.

f. Formulate conclusions.

Formulate conclusions are describing the findings obtained by the results of hypothesis testing. Formulate his conclusions are main part in the learning process. It often happens, because of the multitude of data obtained, leading to conclusions that are formulated, do not focus on the

problem to be solved. Therefore, to reach accurate conclusions teacher should be able to demonstrate to students the data where relevant.¹²

6. Assessment of Inquiry

Assessment of inquiry should include three aspects capabilities, namely:

- (1) the cognitive
- (2) aspects of psychomotor and
- (3) the affective aspect of which is done through tests and non-test.

Assessment is done using a written test can be done with a variety of techniques such as essay, short answer and multiple choice portions balanced. While the assessment is done by using a non-test is through the provision of reading assignments, conclude, make observations, interviews, summarize, clippings and so forth. For the assessment of the attitude, the teacher needs to make observations using the guidelines attitude scale.

Assessment results should be followed up. For students who achieve an average value below need to be improved in various ways according to the type of weakness being owned by learners. Improvements can be enriching as reading, or providing additional duties in accordance with an excess of talents and

¹² Wina Sanjaya, *op cit*, page: 202-205

interests of each student. After completion of the learning process, teachers need to provide extra tasks to all students in accordance with the interests, attention and talent.¹³



¹³ Rannayulis, *Metodologi Pendidikan Agama Islam*, Kalam Mulia, Jakarta : 2005. P. 199

CHAPTER III

REASERCH METHOD

A. Site of Reaserch :

The setting of this reaserch in the State of Madrasah Ibtidaiyah Malang 2, this classroom action reaserch done in fourth grade students (IV A), in Kemantren Street II/ 14 A Bandungrejosari- Sukun – Malang City. In this reaserch subject of reaserch is 27 students, this reaserch is done in years of academic 2012/2013, by one cycle in duration of time is three meetings.

State of Madrasah Ibtidaiyah Malang 2 is the madrasah which has developed, it can be seen from number of teachers are hve graduated from S1 degree. In the MIN Malang 2 is completed by good media of learning for mathematics. In the classroom, completed by white board, table, chair, and LCD Projector as the complement media of technology Information development.

B. Reaserch Design

Design of this reaserch is Classroom Action Reaserch (CAR) by Qualitatative approach, because the purpose of this study was to result in descriptive data in the form of words written or spoken of the people and and observable behavior. The purpose of qualitative research is to describe and

analyze phenomena, events, social activities, attitudes, beliefs, perceptions, thoughts of an individual and group.¹

As the explanation that has conveyed by Bogdan and Biklen (1998) there are the characteristics of qualitative research are as follows :

1. Using scientific background
2. Descriptive
3. Domain on process rather than result
4. Inductive
5. The Significance as the main thing.

In this study, the design of the study is a classroom action research with the kind of collaborative patoris.research partition is designed to use the class action research study conducted by researchers who colaborates with the teachers in the classroom, with the aim to improve performance in the learning process so that quality and improved student learningoutcomes. Classroom action research is research aimed at improving learning on an ongoing basis, that there was essentially inherent in the mission to proof professional teacher education in the waistband. Classroom action research is one of approach for improving quality of result of learnig. In short explanation, we can described the Classroom Action Research are as follows :

1. Reseacrh means as the activity of obseving the object by using the system and the role of some methodology, to get meaningfull data and

¹ Nana Syaodih Sukmadinata, Metode Penelitian Pendidikan (Bandung: Remaja Rosda Karya, 2007), page. 60

information in order to increase the quality of important object for reasercher

2. Action means is the activity that deliberate be done as the specific goal of it is activity
3. Class is not related by classroom means, but it has the specific mean, that is action of research which is done in the class.

By using the ofthree words there are: (1) research, action, and classroom, can be concluded CAR is action of observing of learning activity in the action pattern, in deliberating action in the class by concerted action.²

C. Attendance of researcher

The attendance of researcher as the main instrument, because related with the type of research, that is classroom action research by qualitative colaborative participant approach. During of research, researcher as the data hoarder, observer, data analyzer, reporter of research result. The position of researcher are; analyzer, data interpreter, and as the reporter of data research. The another instruments like interview, and observation enough to be seconder data.³

D. Instrument of Reaserch

A Reaserch instrument is a tool that is used by the researcher to collect data in order to make research process done easily, systematically, and

² Rochiati Wiriattmaja, *Metode Penelitian Tindakan Kelas*, Remaja Rosdakarya, Bandung 2007, p. 10

³ S. Margono, *Metodologi Penelitian Pendidikan*, Jakarta, 2000 p. 38

completely. In this case the researcher as the main instrument of this research, and the statute of researcher in this research is very complex, because researcher as the planner, data collector, analyzer, and reporter of research results after the research being completed.⁴

E. The Sources of Data

A data sources of this research absolutely come from the students of fourth grade of State Madrasah Ibtidaiyah Malang 2, because they are the subject of this Classroom Action Research, and another data is gotten from the mathematics teacher, and all secondary data in state of Madrasah Ibtidaiyah Malang 2.

F. Technique of Data Collection

Technique of data collection of this research are as follows :

1) Observation

Observation method is method for collecting data by observing and writing systematically toward the occurrence in the research.

Observation method often interpreted as the scrutiny, it means an activity that focused to the object of research by using all of human senses (visual, sound, smell, tongue, and hand).⁵ When we

⁴Lexy Moelong, *Metodologi Penelitian Kualitatif*, PT Remaja Rosda Karya. 2008. Bandung. P. 168

⁵ Suharsimi Arikunto. *Prosedur Penelitian Suatu Pendekatan Praktek*, 2002, Yogyakarta : Rineka Cipta, p. 146

look it from the relation of observer and it is observation, can be separated to become two kinds of observation:

a) Participant Observation

In the participant observation, the observer has double role in the observation activities, as the observer and one of part of the observation.

b) Non participant observation

Observer role only as the observer. Concentration of the observer focused to the main object part of the research, his activity is observing, recording, capturing, and writing all of phenomenon in the observation.⁶

Related by the title of this thesis, over the role of researcher in this research included in participant observation, through the observation is gotten data concerns of class condition in MIN Malang 2, Learning process, and the results of research.

2) Interview

Interview used as technique of collecting data if the researcher wants to do introduction or preface study to find the problem and to know the respondent condition in depth, in this case is students. Esterberg (2002) defined interview as follow. "A meeting of two persons to exchange information and idea through question and responses, resulting

⁶ Iin Tri Rahayu and Tristiadi Ardi Ardani, *observasi dan Wawancara*, 2004, Banyu Media.
P 15

in communication and joint construction of meaning about a particular topic”⁷. The Interview Process has done by researcher and informant (the teacher of Mathematics), both of us discussed about the problem of mathematics teaching and learning in the fourth grade, interview by teacher of mathematics in this research also used as the reflective steps of this research to correct and give addition about problems of learning during research.

3) Documentation

Document is record of the phenomena in the field both in past time and during the process of research. Document can be in the form of writing, picture, or monumental creation. Document study is the complement of observation and interview in qualitative research. In case of document Bogdan stated “In most tradition of qualitative research, the phrase personal document is used broadly to refer to any first person narrative produced by an individual which describes his or her own actions, experience, and belief,”⁸

The documentation of this research include documenting of writing results, by descriptive text, and documenting photos of activities in this research

4) Test

Test is done for knowing the progress of research, from the earlier meetings until the end of meeting of this research, the test also as the part

⁷ Sugiyono, *Metode Penelitian Kuantitatif Kualitatif dan R&D*(Bandung: Alfabeta, 2011), hal. 225

⁸ Ibid. P 226

of activities in this research especially on the pre- test and post- test of implementation of guidance inquiry for improving understanding the concept of fraction addition. Test is done one by one of every students or group discussion for knowing the progress of this research.

G. Procedure of Research

The Procedure of this research is done participatory and reflectively, the process of activity is done by this steps of procedure, refer to the model research by Elliot, the research begins from identifying the problem, checking the research location, planning the research activity, implementation of planning (actuating), observing, reflecting, and revising the planning.⁹

The specific description stages of this research are as follows :

1) Problem identification

For the first step, researcher comes to the location of research, to convey the intention of this research to all members of school, such as Headmaster, Teachers, especially mathematics teacher to ask about teaching and learning process of this madrasah, and some of problem that have been faced by students.

2) Checking the research location

After researcher knowing the problem of teaching and learning in mathematics, researcher is going to the first phase of research to

⁹ Rochiati Wiriaatmaja, op cit, P 64

implement learning approach by conventional approach and explicit guidance inquiry approach in order to know the situation of teaching and learning there, for knowing the result of checking of research location, researcher does the pre- test in the last of first meetings by implementing explicit inquiry

3) Planning of action

After getting the data of previous activity (checking the research location), the research arranges the planning of next meeting to solve the problem of research. These are steps of planning for next meeting are as follows :

- a. Make Syllabus and lesson plan by using guidance inquiry
- b. Preparing media of teaching and learning
- c. Make the observation sheet to write the progress of student in understanding the concept of fraction addition

4) Implementation (Action)

The implementation in the research is according to planning of action which has made in the class on mathematics.

5) Observation

In the activity of action, all of students activity researcher watches and writes based on what moment happened during of teaching and learning. The observation is done structurely, focusely, and, systematically. Structurely observation is writing the note in the sheet of observation, focuslyd observation is watching, writing

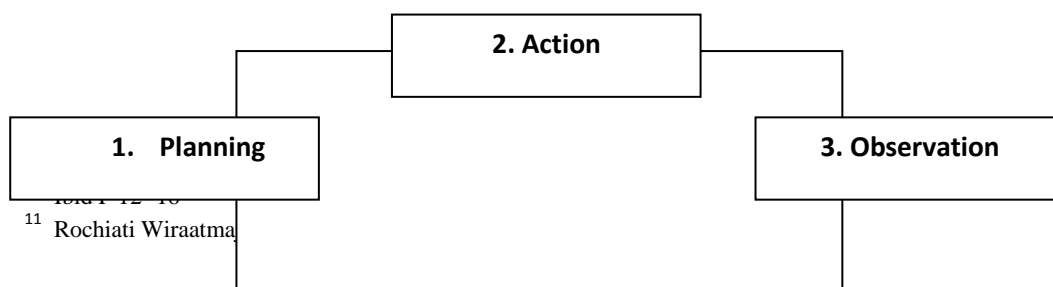
every important moment of the research. Systematically observation is done by arranging solutions on the indicators of understanding the concept of fraction addition.¹⁰

6) Reflection

Researcher does this activity by asking the help of math's teacher, in order to discuss the result of action of research, also respond the problems that rised out of in the planning to be continued in the next meeting, when the reflection of research hav not achieved the standar of research, it means we must add meeting intecity or solve by the another way.

Like the description of this is a classroom action research, over there the model and procedure of this research thaht researcher used refers to the model and procedure of research that addopted from model of Lewin according Elliot is as follows:¹¹

This research is conducted by four Main Scheme (Planning of action, Acting of action, obervation, relection), we can call it as cycycal phase, reseacrher prepare two cycle for doing this research, however when this research can achive the standar of measurement of this research, researcher think this research is enough to be ended.



4. Reflection

Figure 3. 1 (CAR Classroom Action Research Scheme)

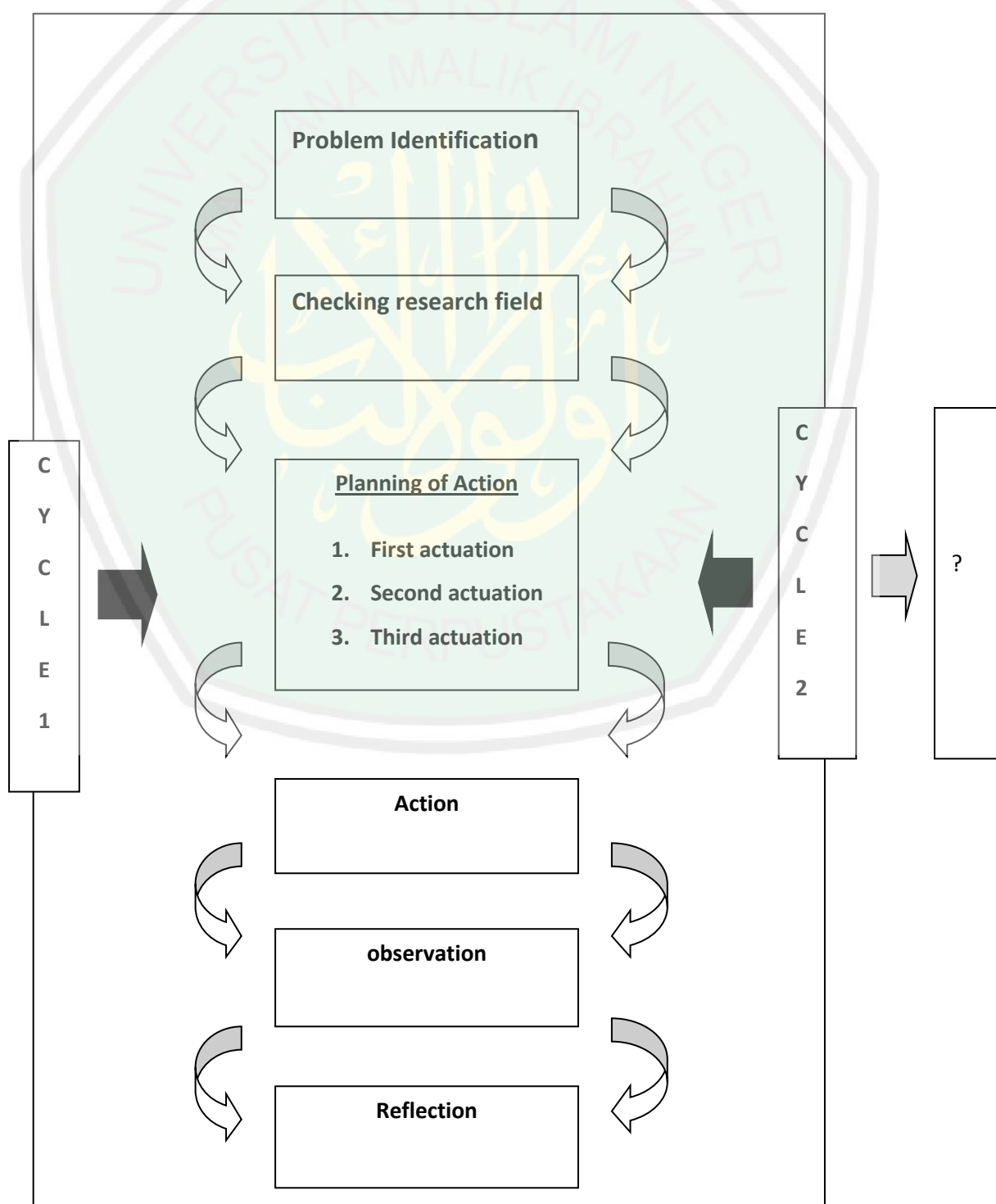


Figure 3.2 (*Model and Procedure of CAR (Classroom Action Research)*
addopted from Lewin according Elliot)

H. Cycles of Research

This Classroom Action Research is prepared by two cycle, however like in previous discussion when this research has achieved the stadard of measurement of research, overther this research is enough to be finished, and reported, in this research there are three meetings. The first meeting focused on pre-test activity, second meeting to treat and actuat the problem by guidance inquiry, last meeting is post- test to measure,what does this research sucess or not yet.

I. Data Analysis

Analysing activity is discussing structure of object in the field. Analysis is done by dechiper phnomeneon comperhensively, or towards the parts which is forming phenomenon it self.¹²

The steps of data analysis in the model of Miles and Hiberman are as Follows : (1) Data Reduction (2) Data Display (3) Verivication Data

1. Data Reduction

¹² Iskandar, *Metodologi Penelitian Pendidikan dan Sosial,(Kualitatif dan Kuantitatif)* Jakarta : Gaung Persada Pers, 2009, P 220-221

Data reduction means summarizing, selecting the important point, focusing on important thing, looking for its theme and pattern. Data reduction can be helped by utilizing electronic device such as mini computer, by giving code in particular aspect. In reducing data, every researcher will be guided by the purpose that will be achieved. The main purpose of qualitative research is research finding. Therefore, if there is something strange, uncommon, unknown, hasn't pattern, it should be treated as the object of research in reducing data.¹³

2. Data Display

In qualitative research, data display can be in the form of brief description, chart, relations among the category, flowchart, and so forth. In this case Miles and Huberman (1984) stated that “the most frequent form of display data for qualitative research data in the past has been narrative text. Through data display, the resulted data is organized well, arranged in interrelated pattern, so that can be understood easier. Miles and Huberman stated that “looking at displays help us to understand what is happening and to do some thing-further analysis or caution on that understanding.¹⁴

3. Data Verification

¹³ Ibid P. 223

¹⁴ Ibid P. 223

The third analysis data of this research is data verification, in the data verification of this research uses descriptive analysis technique, from the result of observation, interview, and documentation. There fore taking the conclusion by narrative text for qualitative data.

In the result of research like in result teaching and learning the researcher write in qauntitative data, to see the progress of research from previous condition by this formula¹⁵ :

$$N = \frac{T}{M} \times 100 \%$$

Note :

$$\text{Final Result} = \frac{\text{Total Score} \times 100}{\text{Maximal Skor}} \%$$

Maximal score is 100, covert by (standar of evaluation score)¹⁶

J. Checking the Validity of Data

Checking validity in qualitative research include, credibility (interbal validity), transferability (external validity), dependability (reliability), and conformability (objectivity).

a. Credibility

¹⁵ Matthew B. Miles dan A. Michael Huberman, *Analisis Data Kualitatif*, Tjetjep Rohendi Rohidi “ Terj” Jakarta : Universitas Indonesia, P. 25

¹⁶ Nana Sudjana, *Penilaian Hasil Proses Belajar Mengajar* (Bandung : PT Remaja Rosda Karya, 2008), P. 133

Credibility in qualitative research can be checked in several ways such as extension of observation, improving persistence in the research, triangulation, discussion with the colleague, and member check.

1) The extension of observation

Through the extension of observation means the researcher come back to the field to do the observation and make interview.

2) The improving persistence

Improving persistence means observing more accurately and continually. By such way the assurance of data and the sequence of event can be recorded certainly and systematically.

3) Triangulation

Triangulation is qualitative cross-validation. It assessed the sufficiency of the data according to the convergence of multiple data sources or multiple data collection procedures (William Wiersma, 1986)¹⁷ According to Lexy Moleong "Trianggulation data validity checking is a technique that utilizes something other than the data for checking purposes or as a comparison against the data. Data obtained from one source will be compared with data obtained from other sources with different techniques and different time.¹⁸

b. Transferability

¹⁷ Ibid. Page 273

¹⁸ Lexy J. Moleong, *Metodologi Penelitian Kualitatif*. (Bandung : PT Remaja Rosda Karya, 2002), p. 178

Transferability is external validity in qualitative research. External validity shows the level of accuracy. The result of data can be applied into the population where the sample is taken.

c. Dependability

In qualitative research dependability is called as reliability. A research is reliable if another people can re-observe the research. In qualitative research, checking dependability can be done by doing audit toward all process of research.

d. Confirmability

Confirmability in qualitative research can be defined as checking the objectivity of research. A research is objective if the result of research is agreed by many people.

K. Research Achievement Criteria

In this research achievement criteria, students can be categorized achieved the achievement if have pass 70 criteria if able to pass the KKM (minimum avhievement evaluation), that has been becoming standart of school.¹⁹ The cycle of this research can be categorized succesful if 70 % of total number of students able to mastery and understand the concept of fraction addition, when the cycle of this research have not achived achievement criteria, it can be said the cycle of this research is have not succesful yet.

¹⁹ *Standar Kriteria Ketuntasan Minimum Mapel Matematika MIN Malang 2 2012/ 2013*



CHAPTER IV

DATA AND RESULT OF RESEACH

A. Before Research (Preparation of research)

In this Classroom Action Research (CAR), not directly done but through the preparations to this research like in observation (to know the problem identification, and to know the research location and the subject of research, also prepare the first action in this research, the specific description of preparation of this are ase below:

1) Problem Identification

For the first step, researcher comes to the location of research on (09:15 – 10:00 on 30 January 2013), in order to convey the intention of this research to all members of school, the first informant of this research is the Headmaster, and Teachers, especially mathematics teacher, because mathematic is the hard subject from the old time ago till this era, intention of researcher to meet with math's teacher to ask about teaching and learning process of this madrasah, and some of problem that have been faced by students, and from this activity researcher found some of problem that must be solved by a research activity, the problem that have gotten in this research is the student is weak on understanding the concept of mathematics subject matter, it happens beacause mathematics teacher stress student on

result of learning, is not concerning the process gaining, and meaningful learning activity.

2) Research Location

The setting of this research in the State of Madrasah Ibtidaiyah Malang 2, this classroom action research done in fourth grade students (IV A), in Kemantren Street II/ 14 A Bandungrejosari-Sukun – Malang City. In this research, subject of research is 27 students, 14 girls and 13 boys, this research is done in years of academic 2012/2013,

3) Planning of Action

After the researcher comes to the school and got some of informations that become identification of problem that students of fourth grade A is hard to understand the concept of mathematics, fortunately the this material is the fraction addition. To prove it researcher by math's teacher help, make sure to do pre test in order to measure the problem that has described in the problem identification. In the pre test, researcher with teacher help, make the question of pre test and make the lesson plan, syllabus and do the pre- test, and observation sheet.

B. Result and Data of Research (Process of Research)

Adopting to the Elliot model of research, over there the phases of this research are as below

1. Cycle I

in this cycle is done by two meetings, in the first meeting is conducted on the pre – test, checking the students condition, and use conventional method, in the next of meeting researcher used guidance inquiry.

First Meeting

a. Pre- test

In this research is be done pre test activity, pretest activity is done to get and measure the early condition of students fourth grade of Madrasah Ibtidaiyah Malang 2, to do pre-test we need some of phases for doing it, there are several phase of pre –test :

(1) Pre- test Design

The Design of this Pre-test is consist of some of needs that as the basic plan to achieve best result data of this pre- test, it has discussed and prepared by help math's teacher, teacher and researcher collaborate to make the question sheet of pre-test and make the lesson plan that arranged independently and consulted as suitable with students condition, the specific it such as bms of planning in the pre test as below :

- (1) Do the discussion related condition of learning obstacle in the class
- (2) Prepare lesson plan
- (3) Prepare observation sheet
- (4) Prepare pre- test question

(2) Pre- test Activity

These are the students and teacher activity during of teaching learning in the pre- test, that has done as proper by lesson plan has made and it done on Tuesday, 5 of February 2013, followed by 27 students, it be done in the second schedule time of the day, for math in the Fraction Material. The fraction material is Fraction addition on equal and equal denominator. The subject research is students fourth grade A, in this activity is consist of some activities include view of observation before pre test, and do a pre test in the end of learning activity to know the effectiveness of previous method that teacher used before this research done. The activity of this meeting is separated to become three main parts (opening, core activity, closing activity) .



Picture 4.1 : pre test activity

During 10 minutes of Opening Activity, Teacher and students give greeting one and each other, Teacher conveyed the goal of learning activity of today, Teacher ask student knowledge about fraction. On the core activity around 15 minutes, teacher do the Exploration for knowing student condition and early

knowledge by doing these activity. Teacher quarries the information of students skill about the manner of fraction addition, Students answer teacher's question by their intuition, Teacher gives reward for students whose brave to answer, Teacher insctructs the students to draw form of fraction addition that has be done. In the Elaboration activity Teacher gives explanation related the fraction with equal denominator (*Penyebut*) and Students are given chance to ask unclear thing, after all activities done Teacher gives example of fraction addition of fraction with unequal dorminator by using lecuture (*Doctrine Approach*). Teacher asks to student about what that obstacle faced of student befor Students are given pre-test sheet, the pre- test is done arround ten 10 minutes,and after doing it Teacher instructs student to do the pretest pre-test sheet Students do pre- test sheet Students submit their pre- test result. By teacher's guide students check the result of pre-test. In the Confirmation activity Teacher instructs student to show the way of adding fraction with unequal dorminator and Students that able to do and show the manner of adding unequal dorminator, stands in front of class to do it, after doing it, student asked to tell and clarify it within prove of paper, or picture, researcher finds obstacle here, because average of students can describe it clearly and conceptually. In the end of meeting or Closing activity Teacher infoms the next activity

meeting in order to prepare students readiness. After all activities done, Students and teacher close meeting by reciting Hamdalah

(3) Observation of Pre test

The observation is done in order to know what the condition students during in the class, observatio is done by teacher in the class and do it directly and after the pre test done include students obstacle, student's understanding concept and the result of pre- test. During this meeting, we found some of problem that rised, " how to solve this question?" ($\frac{1}{2} + \frac{1}{2}$). Easily, student answer the manner of doing equal denominator fraction, the answer of students almost same there are " we can add it directly, sir", this answer make teacher happy and begin to give next question by this question

" any student able to draw how does the figure of ($\frac{1}{2} + \frac{1}{2}$)", it question becomes new obstcle for students, something like this is became basic research of researcher to do a research in this class relates with understanding of concept that shown in this class mathematic problem is weak on concept understanding, for example in this case, because during of previous interview with mathematic teacher of this class, "here is focusing of standar of comeptency mastered, and result of study, less of stressing concept unsuitable with standard of mathematics learning in the Government,.



Picture 4.2 : Researcher gives students question to prove the fraction concept

The next problem is raised in the finishing of unequal denominator fraction question, this question ($\frac{1}{2} + \frac{1}{3}$), can't be realised in the prove by students, they can speak " we must do it like in equal denominator fraction addition, absolutely they do it like in previous question because they are not understand about concept of fraction addition correctly and comprehensively, to overcome this problem teacher gives temporary solution to do the question above by conventional way (doctrine and lecture), in order students able to solve and able to do pre- test sheet. Pre – test sheet is given by teacher for one by one student, around 20 minutes students do pre- test independently by their own knowledge gotten at previous time.

The result of pre- test is average of students get under standard of value, the another result of students can not

prove and draw the picture of addition correctly, only some of student able to draw fraction, but can not show it correctly. It happens on addition of equal and unequal dorminator fraction. The another result of interview by srtudents of this class related this learning activtiy is like it “ we feel confused and bored in this learning activity sir”, absolutly it makes researcher must try to bring them in another way of leaning, and the description of result of first meeting are as follows:

Table 4.1

Table of Pre test Result

NO	NAME	SCORE
1	Aditya Fandi P	60
2	Alysia Qodratun N	70
3	Andra Saifullah	30
4	Anisa Riski Saqinah	50
5	Aurelia Nanda P	70
6	Dimas Arya Y	70
7	Diva Khoirun N	50
8	Elfahryan Putra D	40
9	FarachIzzah	40
10	Farah Tania S	30
11	Hanata Akhmad	40
12	Hildan Ahmad	60
13	Janice Marsha A	40
14	Kevian Dzaky P	30

15	Khansa Cahaya D	70
16	M. Ibnu A	70
17	M. Suryo A	40
18	M. Edwin D	70
19	M. Iskandar	30
20	Nabilla Safa S	80
21	Nadia	40
22	Naldo Kusindarta A	40
23	Nathan Abid M	50
24	Rahmawati Indira	30
25	Rona Rifitriana D	40
26	SyafiraAulia P	70
27	Viga Rahmaria Dhani C	70
TOTAL		1390
AVERAGE		51, 48

(Resources : Result of pre-test of fourth grade students at State Madrasah Ibtidaiyah Malang 2)

The table above is describing result of pre- test of students fourth grade of State Madrasah Ibytidaiyah Malang 2. From the table we can see from 27 students, average of students achievement average is 51, 48. We can see only 9 students or 33 % able to pass The achievement criteria, and arround 67 % have not achieve yet the standard achievement criteria, there are still 18 students need to be given the treatment, however, in the end of meeting when researcher ask to explain clearly about “ how the

manner to solve that problem and ask to prove in the figure and form in the paper”, they were feel hard to do it.

(4) Reflection of Pre- test

The result of pre- test can be concluded by using or implementing coventinal learning approach that focused on teacher centered, depend on what teacher said (lecture and doctrine), and not invite students actived in stud, and not relate the matterials of learning by student experience by student needs of matterials in daily life, student achievement of understanding concept and result achivement are weak, with average percentage of student achievement of Fraction addition 33 % and Student who have not pass achievement criteria is 63 %, is showing un effective learnig by conventional approach, based on result of result of observation above, there for researcher must look for the solution to over come it, the solution to improve students understanding concept and the result achievement needs to do the implementation of guidance inquiry in the cycles.

b. Planning of Cycle I

In this cycle of research, researcher set the cycle to treat all problem rised in the first meeting (Pre- test result), in this cycle researcher implement the Guidance Inquiry Approach in order to help students to improve understanding the concept of fraction

addition, in this cycle is focused on a meeting (Wednesday, on 6 February 2013) and, the planning of this research is done with help and consultation by mathematics teacher, researcher ordered guidance inquiry and use the folding paper as the media to do this meeting in the cycle 1, specific preparation of this research are as follows:

- (1) Preparing Syllabus as the requirement of teaching and learning
- (2) Preparing Lesson Plan to choose the good steps for implementing guidance inquiry
- (3) Preparing Media of Learning folding paper (*kertas lipat*) as the media to help students for understanding the concept
- (4) Preparing observation sheet for checking and writing students improvement understanding the concept.

c. Action of Cycle I

The action of this research is done on two meetings, the first meeting is pre test activity (07:00 – 08.00 a. m) Tuesday 5 of February 2013) and second meeting is done on (08.00- 09.00 a.m Wednesday, 6 February 2013)

First Meeting

In the first meeting here, researcher do the activity of learning by using conventional approach in the doctination and lecture

method for knowing the early students understanding the concept and students achievement in the pre –test.

Second Meeting

The second meeting of this cycle is done on (Wednesday, 6 of February 2013) , in the first meeting is focused on looking for understanding the concept of fraction figure, and cut the papers to be pieces of real fraction and implant the concept of fraction addition with equal denominator (*Berpenyebut sama*). The specific description of first meeting is divided on three main parts, exploration, elaboration and confirmation. In the opening session, Teacher and students give greeting one and each other continued by Teacher conveys the goal of learning activity of today, to stimulate students brain, Teacher ask student knowledge about fraction addition with equal and unequal denominator.

In the core activity, on the exploration activity Teacher gives student question about the manner to solve this question $(\frac{1}{2} + \frac{1}{2})$ and, $(\frac{1}{2} + \frac{1}{3})$, by this question, Students answer the questions by their understanding. Teacher gives review and clarification about their answers. After doing exploration teacher guides Students make Group 5 discussion. Group discussion is consist of 5 and 6 members of group discussion.



Picture 4.3 : group and students activity of cycle 1 in understanding the basic concept of fraction

This activity is continued by elaboration session. After making group discussion, teacher gives work sheet for each group discussion and Teacher guides students to do the work sheet, by teacher after Students and their group discussion, finishing the task in the worksheet, in the Confirmation session, By teacher's guide, students discuss the result of their worksheet, Teacher gives feed back for students about the worksheet result, finally Students return to their chair in of each students.

In the Closing session Teacher informs the next activity meeting, in order to prepare they readiness to follow the activity and keep their sit position in eachs group closed by Students and teacher by reciting hamdalah.

d. Observation of Cycle I

During research is done The attendance of researcher as the main instrument, but still with help of math's teacher, some of problem and moments that happend and rised in the class also

written and checked in observation sheet, because related with the type of research, that is classroom action research by qualitative collaborative participant approach. During of research, researcher as the data hoarder, observer, data analyzer, reporter of research result. The position of researcher are; analyzer, data interpreter, and as the reporter of data research. The another instruments like interview, and observation enough to be seconder data.¹

In the first cycle some datas are gotten by researcher from the first meeting and second meeting, the first meeting (pre – test) is described that students from 27 students, average of students achievement average is 51, 48. We can see only 9 students or 33 % able to pass The achievement criteria, and arround 67 % have not achieve yet the standard achievement criteria, there are still 18 students need to be given the treatment. In the second meeting Researcher seen atmosphere and siprit of learning students look better from the previous meeting, why we can talk like it? It seen from their eyes that focus on and look to what teacher bring. Techer or researcher bring media of learning that covered in the box, “ *what does fill of it is box sir*’?”, researcher feels happy by what has happened, quickly researcher answer “ *these are folding papers with various colour*”, some of students ask again “ *what for those papers sir* ”, Resarcher “ *Ok, if you all want to know the*

¹ S. Margono, Loc. cit, p. 38

function of these papers, let we make groups of discussion, but before we making group discussion any one of you can answer it

*($\frac{1}{2} + \frac{1}{2}$) and, ($\frac{1}{2} + \frac{1}{3}$) ?” One of them come on front of class to solve those question, “ *I will do it, like the manner with make the equal of denominator first*”, Teacher “ *Okay, but you must able to show us the manner that you used can be proved,*” student “*I think I find hard to draw ($\frac{1}{2} + \frac{1}{3}$) sir,*” Teacher “*Well any one can draw it?*” one by one of them to draw it, average of their answer are not accurate and correctly, because they have not know yet the concept of fraction addition truly.*

After we knowing there are has been rising the principles in the guidance inquiry (principle of intelectual, principle of ask, principle of think, principle of intarction, and principle of opened) teacher guuides student to make group discussion randomly. Teacher guides student to make five group of discussion. The members of group discussion is consisted by heterogen member, it means to avoid the domination capability in a group. Every group get the equal work sheet within the duty, and every members of group get folding paper (*kertas lipat*) as the media of this activity. All members of grooup are given paper it is intended the duty of wroksheet can be solved by each member of group, and they are not passive students in this activity.

In the elaboration session teacher stress the member of group discussion to prove the fraction in the picture of fraction, the fractions on the worksheet must be drawn by every students in the group, in this part teacher guides them to block like in fraction

$(\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6})$ on their worksheet, for example :

$$\frac{1}{2} =$$



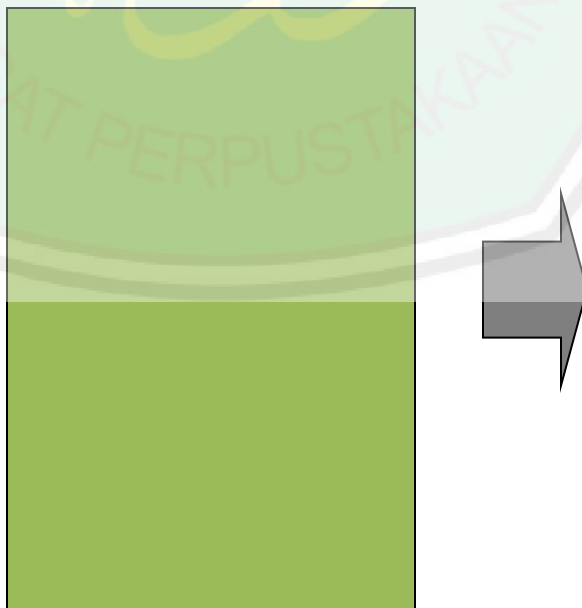
, than they cut it into this part



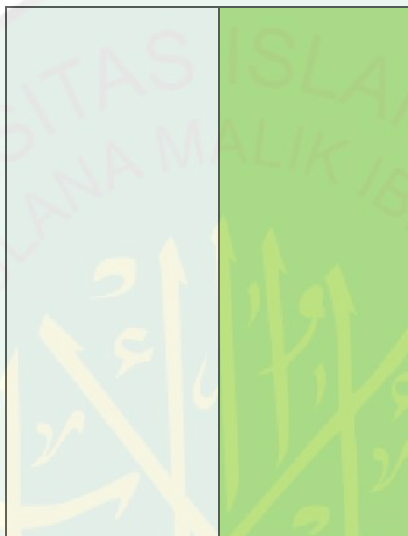
Almost the students able to do this duty, average of this resarch is 98 % can draw it, coorectly and accuratly. In the steps student instructed to prove the fraction that have drawn in th piece of paper, the goal of this activity is implantin explicitly concept of fraction in daily life, for the previous activity taecher instructs them to prove the fraction $(\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6})$ as the early duty, easily they can do it, they have worekd this duty by a manner, block side of part that become values of fraction, than they cut it, and stamp on the paper, all basic activity about fraction can be done nicely by student.

The next activity is stressed for finding, and reasoning the concept of fraction addition or we call it in inquiry process. For the first step teacher gives an stimulus for students to add the fraction with equal denominator by using folding fraction. The mannetr of this step is conducted to prove the fraction addition of equal denominator, there $(\frac{1}{2} + \frac{1}{2})$, before doing this activity we must check all members of group, do they have gotten folding papers or not yet. Each students must follow what instruction of teacher, as the teacher we just lead them and try to give help if needed only first setp they have to fold their paper to become fraction $(\frac{1}{2})$, the principle of this like in previous activity, there are form the folding paper like as follow :

1 piece of paper



Folded to be $(\frac{1}{2})$, or we separate it to become two parts as big, and as long, *remember*, we must fold it by vertically, And we must block it first, and the result is as follow :



The second step, they return the paper (open the same paper), and we have to add by another fraction form horizontally, that fraction form is $(\frac{1}{2})$, so we will do for adding this fraction

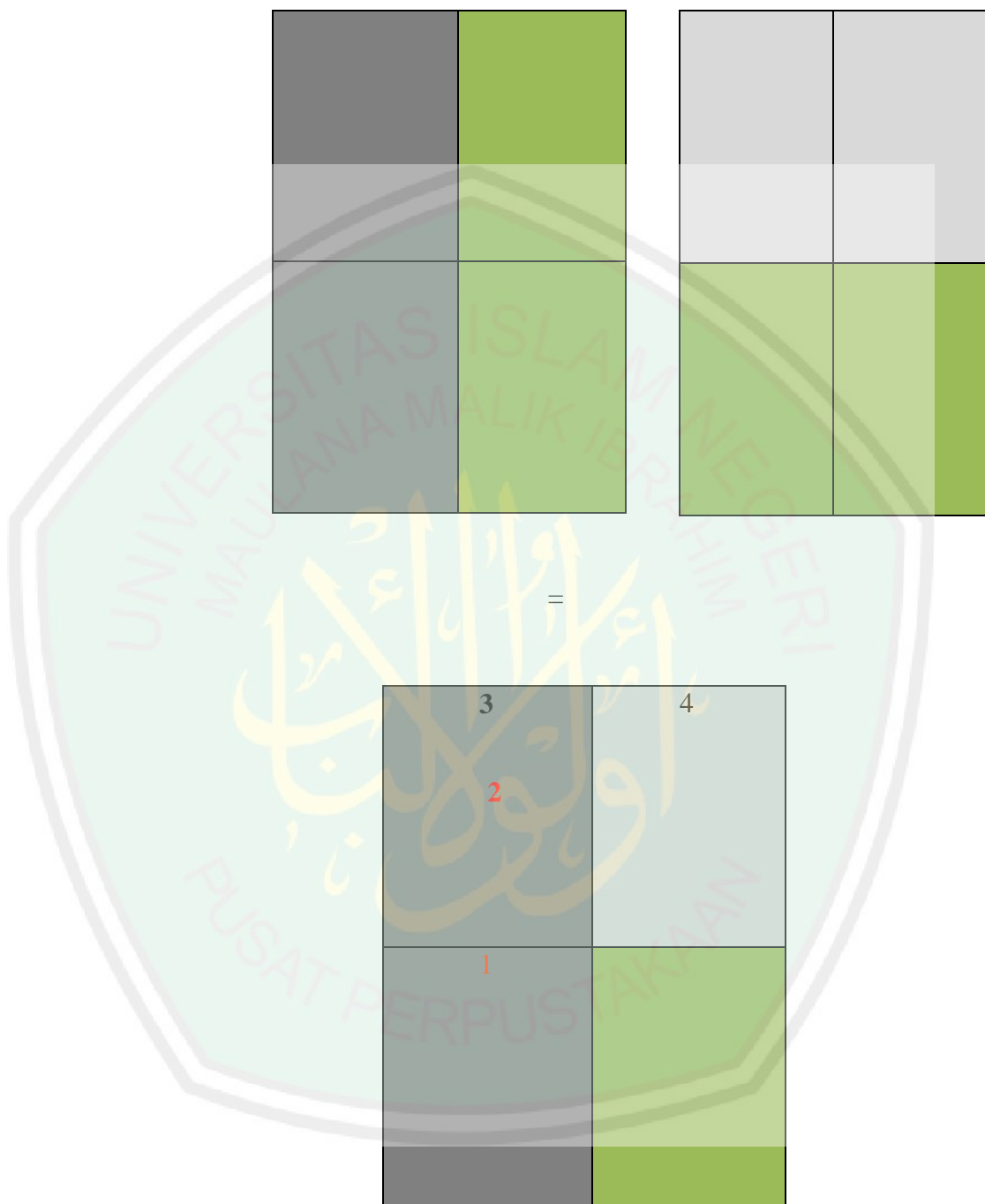
$(\frac{1}{2} + \frac{1}{2})$ *by illustration of the green paper is the combination result of 2 papers that have same colour, and have been to be a part of paper, we can fold for first $(\frac{1}{2})$ vertically and block it, then added by second fraction $(\frac{1}{2})$ horizontally.*

The result of their work of fold the paper in the on part of paper is like this picture

(A)

+

(B)



Note : The Red number (1, 2) is total blocks of Paper A, The black number (3, 4) is total block of paper B

*The blocked boxes are **Numenator**, and the number total of boxes are **denominator***

We must stress the students to count the number of blocked box (*arsiran*), as the **Numenator** (*pembilang*), and the number of total of box that resulted as the **Denominator** (*Penyebut*), the result of $(\frac{1}{2} + \frac{1}{2}) = \frac{4}{4}$, absolutely they are look so confused, because the result not same by what their gotten when they count manually without paper. Here we must reinforce the student, that the fraction is own the equaity fraction (*pecahan senilai*), it means we can make that fraction to be more simple, by devide between numenator and the denominator, for example $\frac{4}{4}$ to become $(\frac{2}{2})$, $(\frac{2}{2})$ is the ideal result for studet ever known, beacue they known and ever says “ *we can add equal denomintaor fraction directly, if the denominators are same*”, here the students begin to think and analyzing, how come it be. For improving their understanding of the concept of fraction in equal denominator.they must answer the questions of work sheet by using equal manner like in $(\frac{1}{2} + \frac{1}{2})$, for another question, than the final result they find concept independently.

Table 4. 2

Table of Criteria Understanding the Concept of fraction

NO	G R O U	Name	Understanding the concept of fraction Criteria					
			1	2	3	4		

	P							
1	1	Aditya Fandi P	v	v	v	v		
2		Alysia Qodratun N	v	v	v	v		
3		Andra Saifullah	v	v	v	v		
4		Anisa Riski Saqinah	v	-	v	v		
5		Aurelia Nanda P	v	v	v	v		
6	2	Dimas Arya Y	v	v	v	-		
7		Diva Khoirun N	v	v	v	-		
8		Elfahryan Putra D	v	-	v	-		
9		FarachIzzah	v	v	v	-		
10		Farah Tania S	v	v	v	-		
11	3	Hanata Akhmad	v	v	-	v		
12		Hildan Ahmad	v	v	-	v		
13		Janice Marsha A	v	v	-	v		
14		Kevian Dzaky P	v	v	-	v		
15		Khansa Cahaya D	v	v	v	v		
16	4	M. Ibnu A	-	v	v	v		
17		M. Suryo A	v	v	-	v		
18		M. Edwin D	v	v	v	v		
19		M. Iskandar	v	v	v	v		
20		Nabilla Safa S	v	v	v	v		
21		Nadia	v	v	v	v		
22	5	Naldo Kusindarta A	-	v	v	v		
23		Nathan Abid M	v	-	v	v		
24		Rahmawati Indira	v	v	-	v		
25		Rona Rifitriana D	v	v	v	v		

26		SyafiraAulia P	v	v	v	v		
27		Viga Rahmadhani C	v	v	v	v		
Appearance Percentage of Understanding the Concept of Frction Addition			92 %	89 %	74 %	81 %		
TOTAL PROGRESS			56 %					

(Resources : Result of CYCLE 1 of fourth grade students at State Madrasah Ibtidaiyah Malang 2)

Note : (v) = appear

(-) = disappear

Description of Understanding the concept fraction

Criteria

1. Drawing the Figure of Fraction
2. Cutting Paper to be parts of fraction
3. Matching value and shape of Fraction
4. Finding the manner of Adding the Fraction with equal denominator by folding paper
5. Finding the manner of Adding the Fraction with unequal denominator by folding paper
6. Finding the concept of equalyizing denomintor by KPK

In this activity, students and each group nicely able to do all activity, as good as researcher expects, they can make a statement, collect the data, brave to make hypothesis, prove their own hypothesis, and make all conclusion of their activity, all of process

of today, have they passed like as the process of inquiry by teacher guides, but they still can not fulfill understanding the concept item, in the items (5 and 6), it means they need to get understanding the concept deeper than it in the next cycle

e. Reflection

According the result of students activity in the first cycle, there are gotten result from 27 students, average of students achievement average is 51, 48. We can see only 9 students or 33 % able to pass The achievement criteria, and arround 67 % have not achieve yet the standard achievement criteria, there are still 18 students need to be given the treatment, and in the second meeting of the cycle I that seen students has mastered the and understand the concept of fraction in the basic level, such as drawing, cutting and matching the folding paper as the media for helping students in understanding the concept of fraction with equal denominator is 56%. To make sure that students able to understand the fraction addition with unequal denominator, perhaps this research need a meetin in the next cycle. By consultation of math's teacher this research needs planning revision in order to make students understand the concept of fraction addition deeply and comperhensively.

f. Planning Revision

Planning revision here is done by researcher and teacher of mathematics on the fourth grade, we need to make new planning revisoin for completing understanding the concept of fraction addition, because there are still 2 items that must achieved by students, specific description that need to complet learning activity for improving understanding the concept of students. The specific planning for next action are as below :

- a) Give instruction for students to keep their sit position in each group
- b) Guide rarely students activity, and conduct more complex in order they can thinking critically in order they can find the concept truly
- c) Give folding paper again to for each students, in order completing deficiency of cycle I, in order students achieve the understanding the concept of fraction addition comperhensively
- d) Give students worksheet as the students guide sheet
- e) Conduct students activity in the activity for finding the concept of fraction addition in the last meeting

2. Cycle II

In the cycle II is conducted on 2 meetings, and the focus of these learning stay on the improving understanding of the concept fraction addition, in the Cycle II, there are conducted on (08. 00 – 09. 00 a.m Tuesday 12 of February 2013) and (07. 00 – 08. 00 a.m Wednesday, 13 of February 2013), before researcher done researcher prepare some of planning that needs to be conducted as below :

a. Planning of Cycle II

In the cycle II, the researcher and math' teacher keep conducted the implementation of guidance inquiry for improving understanding the concept of fraction addition, in order to achieve the two items of the last understanding the concept of fraction addition, in order to achieve the understanding the concept researcher and math's teacher colaborete to solve the problem that rised in the Cycle I. The planning of this cycle is almost same with the cycle I, because worksheet and technique of guidance inquiry same with the previous cycle I, Specific planning of this research that has conducted by math's teacher are as follows :

- (1) Preparing Syllabus by teacher guide.
- (2) Preparing Lesson Plan for conducting students activity in the process of implementation guidance inquiry
- (3) Giving students worksheet as the their main activity in the guidance inquiry process

- (4) Preparing Media of Learning (folding paper) to make easy students do their worksheet for seeking the concept of fraction addition with unequal denominator
- (5) Preparing test instruments (post test to measure students achievement in the final of this cycle)
- (6) Preparing observation sheet for observing the improvement of understanding the concept of fraction addition

b. Action of Cycle II

FIRST MEETING

In the second meeting is done on Tuesday, on on (08. 00 – 09. 00 a.m Tuesday 12 of February 2013) in this activity is focused on understanding the concept of fraction addition with unequal denominator (*berpenyebut tidak sama*),. like in the students previous meeting this activity is conducted by students in their each groups like in the previous meeting. On this meeting there are three sessions such as daily, in the exploration, elaboration and confirmation. The specific description of second meeting are as follows:

In the oppening session Teacher and students give greeting one and each other and continued by Teacher conveyed the goal of learning activity of today, in opening session Teacher gives aperception by the question of second meeting ($\frac{1}{3} + \frac{1}{3}$), Teacher

also ask student knowledge about fraction with unequal denominator.



Picture 4. 4 students activity on the first meeting of cycle 2.

In the Core Activity there are three main sessions for the first is Exploration, in this session Teacher gives student question about the manner to solve this question $(\frac{1}{2} + \frac{1}{2})$ and, $(\frac{1}{2} + \frac{1}{3})$, Students answer the questions by their understanding. The result of students answers is related with Teacher gives review and clarification about their answers. Activity of this meeting is continued by Students make Group discussion like previous meeting, in the elaboration after making group discussion, teacher gives work sheet for each group discussion Teacher guides students to do the work sheet, Students and their group discussion finish the task in the worksheet. In the Confirmation session By teacher's guide students discuss the result of their worksheet and Teacher gives feed back for students about the worksheet result. In the closing session, Teacher informs the next

activity meeting and Students instructed by teacher to keep their sit position in their group discussion for the next meeting, when all activities done Students and teacher close meeting by reciting hamdalah.

SECOND MEETING (Post-Test)

In the third meeting, researcher focuses the activity on evaluation in order to measure students understanding the concept in the question sheet (Post - test), but before doing the pre test, teacher must make sure students able to do post – test without use the media in previous meeting, and able to implement the manner that have they gotten at second meeting. The description activity is separated to become three parts activity: there are exploration, elaboration, and confirmation.

Post test is done on (07.00 – 08.00 a.m Wednesday, 13 of February 2013),. Started by opening session like in daily activity. Opened by reciting Basmallah, and teacher and students give greeting one and each other, teacher informs activity of this meeting , related by Post test activity,

In exploration session around 15 minutes teacher try to ask students , about what they have gotten yesterday, and teacher give opportunity to students to ask more about Fraction that not understood, before doing pre- test, teacher gives question

$(\frac{3}{8} + \frac{5}{9})$, students whose able to do it pleased to come in front of class. Teacher gives reward for students.



Picture 4.5 Post Test Activity in the Cycle II

In elaboration session teacher give question sheet for all students, teacher instruct students to do the post test sheet independently, teacher instructs student to do the post test without use the media, students finish the post test in 20 minutes. In the confirmation session during 20 minutes teacher and students check the result of post –test. Students whose able to answer post test be pleased to do on the white board. Teacher gives reward for students, and teacher give reinforcement to students related the fraction addition materials conceptly or theoritically. After all activities done, Students and teacher close meeting by reciting Hamdalah

c. Observation of Cycle II

During research is done The attendance of researcher as the main instrument, because related with the type of research, that is classroom action research by qualitative collaborative participant approach. During of research, researcher as the data hoarder, observer, data analyzer, reporter of research result. The position of researcher are; analyzer, data interpreter, and as the reporter of data research. The another instruments like interview, and observation enough to be seconder data.²

Researcher as the teacher and observer in this meeting try to continue second meeting actiity,. In this meeting students return to their group discussion of second meeting. The taecher gives them folding paper as the media like in previous meeting, they also get the independent task to avoid dominant work by leader of the group, in this activity student stressed to find the understanding the concept of fraction addition with unequal denominator, this activity will be ended when student able to find the concept unequal denominator by saying “equalyizing denominator by findig (**KPK**)” **KPK** is the basic of fraction addition formula when we solve the addition of fraction with unequal denominator. Before enter to inquiry process, any student asked by teacher to solve the question example, they must look for the manner of solve the fraction addition with unequal denominator, they said “*Alright, we*

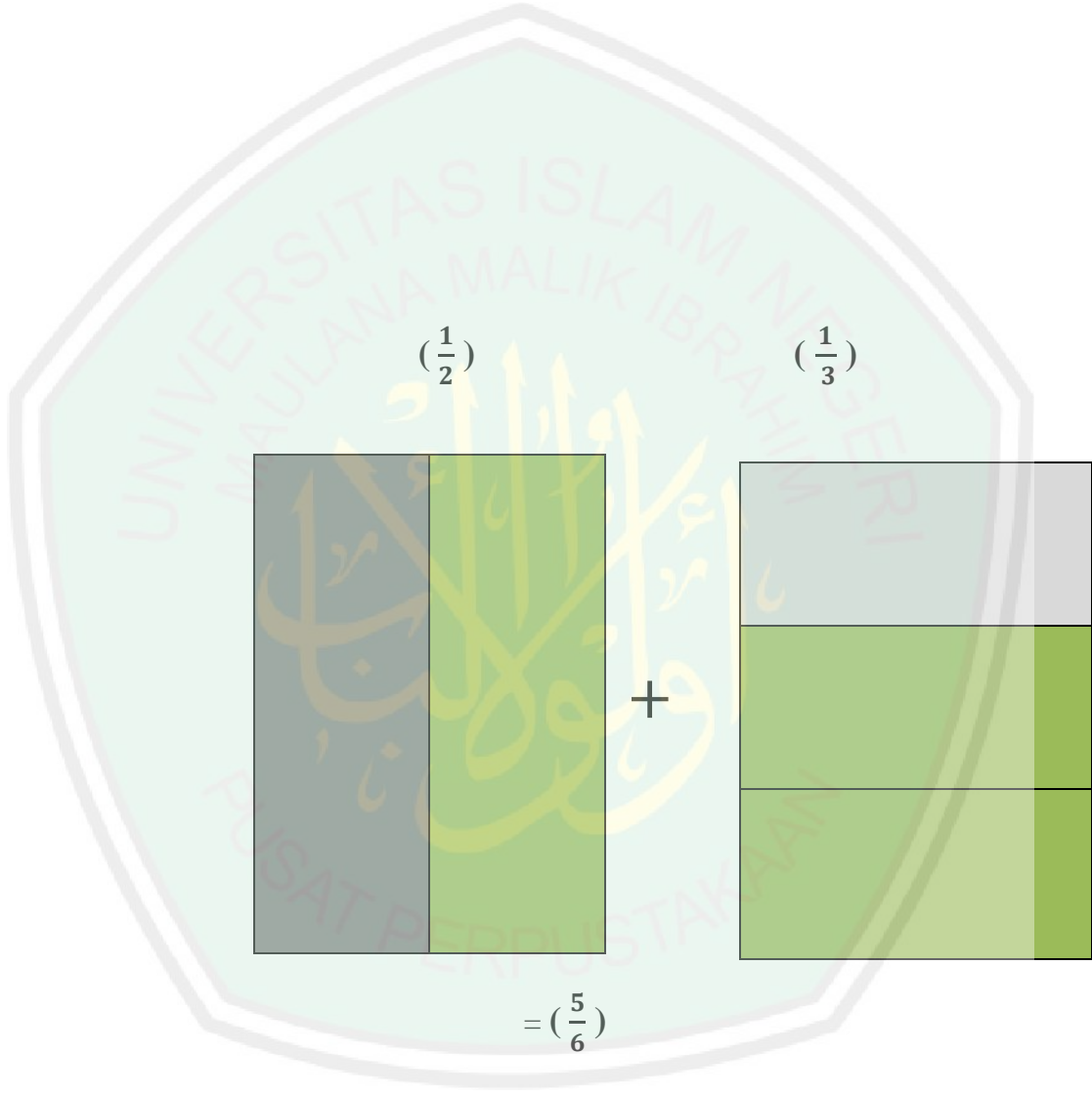
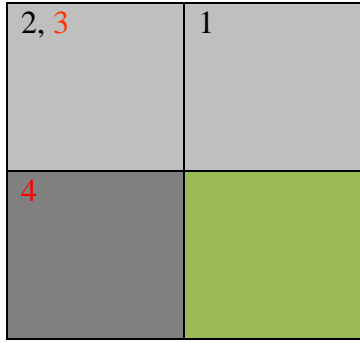
count the number of blocked boxes as the Denominator, and the number of total boxes Numenator” Teacher said “ Really, let’s cekck it together”

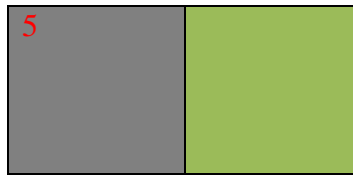
The process that through by student is almost same by second meeting activity, today teacher’s instruction and question of teacher not too much like in previous meeting, students and their each group look easier to do the activities in the work sheet, teacher keep guides them by simple instruction and guide them in small problem, the principle like in second meeting is count the total blocked boxes result as the **Numenator** and the total of all boxes resulted as the **Denominator**.

The description of students work is like this picture :



If we will add fraction ($\frac{1}{2} + \frac{1}{3}$), the illustration is the 2 papers have combined become a part:





*The blocked boxes are **Numenator**, and the number total of boxes are **denominator**.*

There are the illustration description of students activity in the process of guidance inquiry, the problem is raised when the students to sheek the conclusion of this activity, like in the goal of this activity students will able to say (conclude) , when we will solve the fraction addition with unequal denominator we must equlyizaing the denominator, it is can be shown when students able to find **KPK** of each denominator in Fraction.

In the final activity taecher gives question as the stimuly for students to conclud the KPK is the way for solving fraction addition with unequal denominator. In the guidance inquiry the pricples like ask, think to solve prove the hypotseis and make conclusion already done of today, many students answer with any statemens. It makes learning process be active learning process.

Teacher gives the question for students for solving these questions :

$$(1) \left(\frac{1}{2} + \frac{1}{3} \right),$$

$$(2) \left(\frac{1}{3} + \frac{1}{4} \right),$$

$$(3) \left(\frac{1}{7} + \frac{1}{8} \right)$$

Many students answer by using folding paper, but they begin feel tired, when they must do every question by folding paper, the result of these questions are :

$$(1) \left(\frac{1}{2} + \frac{1}{3} \right) = \frac{5}{6}$$

$$(2) \left(\frac{1}{3} + \frac{1}{4} \right) = \frac{7}{12}$$

$$(3) \left(\frac{1}{7} + \frac{1}{8} \right) = \frac{14}{56}$$

The students given question when denominator 2 and 3 can be resulted 6, and 3 and 4 resulted 12, “*what does it means*”, many answers come from students, until the answer of some students “*there are any multiplied of each denominator*”, it is answer is not enough to be come the conclusion of this inquiry process, and one of student (Rona) “*Yeah i know it is the **KPK** of each Denominator*”, almost all students and groups some students also look so agree with this answer. The researcher said “*Concept of equalyzing denominator by finding the KPK of each denomintor have found, however with the numenator, does it need to find KPK too?*”

In this session answers resulted and rised from student, finally, 4 groups in the class able to find Manner for equalyizing the unequal denoimnator “ *when the denominator must look for the KPK, it means we must multiple it, so we must multiple the numenator too like the number of multiplication in the denominator*”, techer said “ *excellence, answer, lets we check it for the questions, above*”

Example :

$$1. \left(\frac{1}{2} + \frac{1}{3} \right) = \frac{5}{6} \Rightarrow \left(\frac{1 \times 3}{2 \times 3} + \frac{1 \times 2}{3 \times 2} \right) = \frac{5}{6}$$

During of this CYCLE done, students have able to pass inquiry aspects, they are also able to prove the fraction in the many forms as the proves of understanding the concept, like drawing, cutting piece of fraction part in paper, and fraction addition with the equal and unequal denominator in folding paper. The description of students progress can be seen in the following table :

Table 4. 2

Table of Criteria Understanding the Concept of fraction

NO	G R	Name	Understanding the concept of fraction Criteria
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	O U P		1	2	3	4	5	6
1	1	Aditya Fandi P	v	v	v	v	v	v
2		Alysia Qodratun N	v	v	v	v	-	v
3		Andra Saifullah	v	v	v	v	v	-
4		Anisa Riski Saqinah	v	-	v	v	v	v
5		Aurelia Nanda P	v	v	v	v	v	v
6	2	Dimas Arya Y	v	v	v	-	v	v
7		Diva Khoirun N	v	v	v	-	v	v
8		Elfahryan Putra D	v	-	v	-	v	v
9		FarachIzzah	v	v	v	-	v	v
10		Farah Tania S	v	v	v	-	v	v
11	3	Hanata Akhmad	v	v	-	v	v	v
12		Hildan Ahmad	v	v	-	v	v	-
13		Janice Marsha A	v	v	-	v	v	-
14		Kevian Dzaky P	v	v	-	v	v	v
15		Khansa Cahaya D	v	v	v	v	v	v
16	4	M. Ibnu A	-	v	v	v	-	-
17		M. Suryo A	v	v	-	v	v	v
18		M. Edwin D	v	v	v	v	v	-
19	5	M. Iskandar	v	v	v	v	v	v
20		Nabilla Safa S	v	v	v	v	v	v
21		Nadia	v	v	v	v	-	v
22	5	Naldo Kusindarta A	-	v	v	v	-	v
23		Nathan Abid M	v	-	v	v	v	v

24		Rahmawati Indira	v	v	-	v	v	v
25		Rona Rifitriana D	v	v	v	v	v	v
26		SyafiraAulia P	v	v	v	v	v	v
27		Viga Rahmadhani C	v	v	v	v	v	-
Appearance Percentage of Understanding the Concept of Frction Addition			92 %	89 %	74 %	81 %	85 %	78 %
TOTAL PROGRESS			83, 17 %					

(Resources : Result of CYCLE II of fourth grade students at State Madrasah Ibtidaiyah Malang 2)

Note : (v) = appear

(-) = disappear

Description of Understanding the concept fraction

Criteria

7. Drawing the Figure of Fraction
8. Cutting Paper to be parts of fraction
9. Matching value and shape of Fraction
10. Finding the manner of Adding the Fraction with equal denominator by folding paper
11. Finding the manner of Adding the Fraction with unequal denominator by folding paper
12. Finding the concept of equalizing denomintor by KPK

The table above is describing about the result of implementation guidance inquiry in this cycle for improving understanding the concept of fraction addition, the process of this

cycle is enough in a meeting, in this cycle students stressed to find the concept inquirely, through teacher guides, the basic apperance of basic concept are :

1. Drawing the Figure of Fraction (92 %)
2. Cutting Paper to be parts of fraction (89 %)
3. Matching value and shape the Fraction manner (74 %)
4. Finding the manner of Adding the Fraction with equal denominator by folding paper (81 %)
5. Finding the manner of Adding the Fraction with unequal denominator by folding paper (85 %)
6. Finding the concept of equalyizing denomintor by KPK (78 %)

There are showing the guidance inquiry able to improve understanding the concept of fraction addition by this cycle by total progress students understanding the concept of every aspects is 83, 17 %.

Apperance concept that rised from students in the second meeting has rised good achievement, there are 83, 17 % average of aspects understanding the concept, the apperance understanding the concept proves, can not be guaranted when have not meassured by evaluation as the end of this cycle,

therefore in this meeting closed by post test. The post test in consist of 20 questions, the various questions of post –test are 5 in equal denominator and 15 in the unequal denominator. The post test have done good by students, in the post test condition, they were look so calm and confidence to finish question, when teacher ask “ *any problem do you feel* ”, the students look calm and move their head. The post test duration is 20 minutes by time allocation of a number of question is need a minute to be finished. After doing pre test students given chance to check their work, they change one ach other their result of post test, in this session teacher instructs students to answer on white board, they are look so eanthusias to answer the question that have written on white board, many students are sparkle to answer. When all answers have done, teacher and students check one by one the result achievement and entry the result of students achievement. The following table is the result of students achievement.

Table 4. 3

Table of Post – Test Result

NO	NAME	SCORE
1	Aditya Fandi P	90
2	Alysia Qodratun N	90
3	Andra Saifullah	80
4	Anisa Riski Saqinah	80

5	Aurelia Nanda P	90
6	Dimas Arya Y	100
7	Diva Khoirun N	60
8	Elfahryan Putra D	100
9	FarachIzzah	90
10	Farah Tania S	95
11	Hanata Akhmad	70
12	Hildan Ahmad	65
13	Janice Marsha A	80
14	Kevian Dzaky P	90
15	Khansa Cahaya D	80
16	M. Ibnu A	90
17	M. Suryo A	90
18	M. Edwin D	90
19	M. Iskandar	70
20	Nabilla Safa S	90
21	Nadia	100
22	Naldo Kusindarta A	65
23	Nathan Abid M	90
24	Rahmawati Indira	80
25	Rona Rifitriana D	100
26	SyafiraAulia P	80
27	Viga Rahmadhani C	80
TOTAL		2285
AVERAGE		84, 62

(Resources : Result of Post - test of fourth grade students at State Madrasah Ibtidaiyah Malang 2)

The table above is the table of post test achievement, the result of post test in the table above is 24 students have pass the stadard of minimum avhievement criteria in school by average of score is 84, 62 or 89 % students have passed it, and another data is 3 students, or 11 % percent have not achieved the standard achievement minimum (KKM), it shown the post test has done succesfully.

d. Reflection

Refelction of cycle II on this research is describing about the progress of Final result implementation of guidance inquiry for improving understanding the concept of fraction addition, and the result of Cycle II is good enough to be reporeted with improvement and good Result of students understanding the concept of fraction addition begin from the first meeting in the Pre – Test of Cycle I of this research done, students given learning by conventionally or students understanding in the matterials through teacher centered activity, in the Cycle I in first meeting teacher gives them such as doctration way to implant the matterials content of fraction. Fraction is something that become real obstacle for students ehen they are not understanding the concept as basicly. In the pre test only 33 % of students pass the minimum criteria evaluation, event though they are able to pass it, but they are feel hard to prove it in the real context.

In the cycle I and Cycle II of this research researcher implement the guidance inquiry to help students for understanding the concept of fraction addition comprehensively, start from basic understanding from drawing up to understanding the manner of solving fraction addition with equal and unequal denominator. The progress of understanding the concept of fraction addition during Cycle I and Cycle II and students achievement are as follows :

Table 4. 5

Final Result Achievement During Research

NO	Name	Understanding the Concept of fraction Criteria						Pre test	Post test
		Cycle I				Cycle II			
		1	2	3	4	5	6		
1	Aditya Fandi P	v	v	v	v	v	v	60	90
2	Alysia Qodratun N	v	v	v	v	-	v	70	90
3	Andra Saifullah	v	v	v	v	v	-	30	80
4	Anisa Riski Saqinah	v	-	v	v	v	v	50	80
5	Aurelia Nanda P	v	v	v	v	v	v	70	90
6	Dimas Arya Y	v	v	v	-	v	v	70	100
7	Diva Khoirun N	v	v	v	-	v	v	50	60
8	Elfahryan Putra D	v	-	v	-	v	v	40	100
9	FarachIzzah	v	v	v	-	v	v	40	90

10	Farah Tania S	v	v	v	-	v	v	30	95
11	Hanata Akhmad	v	v	-	v	v	v	40	70
12	Hildan Ahmad	v	v	-	v	v	-	60	65
13	Janice Marsha A	v	v	-	v	v	-	40	80
14	Kevian Dzaky P	v	v	-	v	v	v	30	90
15	Khansa Cahaya D	v	v	v	v	v	v	70	80
16	M. Ibnu A	-	v	v	v	-	-	70	90
17	M. Suryo A	v	v	-	v	v	v	40	90
18	M. Edwin D	v	v	v	v	v	-	70	90
19	M. Iskandar	v	v	v	v	v	v	30	70
20	Nabilla Safa S	v	v	v	v	v	v	80	90
21	Nadia	v	v	v	v	-	v	40	100
22	Naldo Kusindarta A	-	v	v	v	-	v	40	65
23	Nathan Abid M	v	-	v	v	v	v	50	90
24	Rahmawati Indira	v	v	-	v	v	v	30	80
25	Rona Rifitriana D	v	v	v	v	v	v	40	100
26	SyafiraAulia P	v	v	v	v	v	v	70	80
27	Viga Rahmadhani C	v	v	v	v	v	-	70	80
Apperance Percenatge of Understanding the Concept of Frction Addition		92 %	89 %	74 %	81 %	85 %	78%	Total : 1390	Total : 2285
Percentage Progress Per Cycle		56%				27, 17%		Average	Average:

TOTAL PROGRESS	83, 17 %	51, 48	84, 62
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(Resources : The Result Understanding the concept and Achievement during research)

The table above is describing students progress in this research, actually the main aspects that become measurement is on the progress of understanding concept in the fraction addition that measured in any aspects such as :

1. Drawing the Figure of Fraction (92 %)
2. Cutting Paper to be parts of fraction (89 %)
3. Matching value and shape of the Fraction
(74 %)
4. Finding the manner of Adding the Fraction with equal denominator by folding paper (81 %)
5. Finding the manner of Adding the Fraction with unequal denominator by folding paper (85 %)
6. Finding the concept of equalizing denominator by
KPK (78 %)

The improvement of students in understanding the concept of fraction addition is totaled by percentage of each students improvement in the Cycle I is 56 % and in the Cycle II is 27,17 % it means average improvement of student's understanding the concept of fraction addition is 83, 17 %. For supporting and

proving students really understanding the concept of fraction addition there are also describe the pre- test result with average students achievement is 51, 48 and the post test result average of students have achieved become 84, 62. Even though there are 3 students still have not pass yet, the achievement minimum criteria (KKM), however this research have passed the achievement critria of research.

In order to achieve best result to improve students result, therefore steps that should be done are :

- 1) Implementing another Learning Approach, that focus to students active in the learning
- 2) Choose the best and aplicative media, that able to make students do the learning
- 3) For mathematics subject, better for stressing students understand the concept as the basic of learning Goal.

C. Evaluation of Research

During this research researcher also do the evaluation through observation, and make the observation sheet and make the items of aspect appearance of understanding the concept of fraction addition of each students, the evaluation here also count the average improvement improvement from cycle I to cycle II, and supported by acheivement of students from the pre- test and in the pot- test,

Taken from the result of observation during of research, students progress improvement in this research seen from main aspects that become measurement is on the progress of understanding concept in the fraction addition that measured in any aspects such as :

1. Drawing the Figure of Fraction (92 %)
2. Cutting Paper to be parts of fraction (89 %)
3. Matching value and shape of the Fraction (74 %)
4. Finding the manner of Adding the Fraction with equal denominator by folding paper (81 %)
5. Finding the manner of Adding the Fraction with unequal denominator by folding paper (85 %)
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The improvement of students in understanding the concept of fraction addition is totaled by percentage of each students improvement in the Cycle I is 56 % and in the Cycle II is 27,17 % it means average improvement of student's understanding the concept of fraction addition is 83, 17 %. For supporting and proving students really understanding the concept of fraction addition there are also describe the pre- test result with average students achievement is 51, 48 and the post test result average of students have achieved become 84, 62. Even though there are 3 students still have not pass yet, the achievement minimum criteria (KKM), however this research have passed the achievement criteria of research.

CHAPTER V

DISCUSSION

A. The Preparation of Implementation of Guidance Inquiry For Improving Undersatnding The Concept of Fraction Addition At Fourth Grade Students of State Madrasah Ibtidaiyah Malang 2

Inquiry approach departs from the assumption that since man is born into the world, humans have the urge to find their own knowledge. Curiosity about the circumstances surrounding nature is human nature since he was born into the world. Since childhood, people have a desire to know all things through the senses of taste, hearing, vision, and other senses. To adult human curiosity is continuously evolving to use the brain and mind. Human knowledge would be meaningless (*meaningfull*) when it is based on curiosity. In order that inquiry approach was developed.¹

Inquiry approach was based on the view that students as subjects and objects in the study, have a basic ability to develop optimally according to ability. The learning process should be viewed as a stimulus to challenge students to perform learning activities. The role of teachers putting themselves more as mentors or leaders of learning and learning facilitators. Thus, students are conducting their own or in a group to solve problems with teacher guidance.

¹ Wina Sanjaya, *Strategi Pembelajaran*, Kencana Prenada Media Group, Jakarta 2007, p: 196

Perform using the inquiry method of learning means that students learn to control the situation at hand when dealing with the physical world, using the techniques of research carried out by experts. To know the issues, ask questions, suggested research measures, giving a clear exposure, make predictions, and explanations that support experience.²

The implementation of guidance inquiry for improving understanding the concept of fraction, not directly be done, it must through good planning to do it, phase of this planning research is conducted by all needs for implementing this research, the best planning will raise best result, the preparation of this research such as do consultation by mah's teacher of fourth grade, from the result of consultation by teacher, we able to know characteristics of students psychology of learning, what the proper media that can be used.

From the interview and consultation that resulted, researcher determine choose approach of learning, make proper Lesson Plan with students for teaching and learning activity, choose the applicative media for students that can be gotten easily, also make the observation sheet to measure the progress of implementation guidance inquiry. All needs above is prepared to implement the Guidance Inquiry in fourth Grade Students of MIN Malang 2.

Guidance inquiry for the approach of this research as the ideal approach for improving the concept of fraction addition at students forth

² Nuryani, *Strategi Belajar Mengajar Biologi*, Universitas Negeri Malang, Malang 2005, page: 95

grade of State Madrasah Ibtidaiyah Malang 2 is chosen because it is proper with mathematics character learning, by preparing all needs of this research expected can be improved understanding the concept of fraction addition at students of State Madrasah Ibtidaiyah Malang 2.

The specific preparation of Implementation of Guidance Inquiry For Improving Understanding The Concept of Fraction Addition at Fourth Grade Students of State Madrasah Ibtidaiyah Malang 2 include :

- 1) Identify the problem through interview and observation by Headmaster, and elements of school (especially math's teacher)
- 2) Preparing Syllabus as the component of learning requirement
- 3) Make the proper lesson plan for implementing guidance inquiry
- 4) Make the student's worksheet as the students guide and instruction during teacher improving understanding the concept of fraction addition
- 5) Choose the applicative media of learning folding paper (*kertas lipat*) in the process of guidance inquiry implementation, and
- 6) Make the instruments of evaluation in the observation sheet to measure the improvement progress of this research

B. The Process of Implementation of Guidance Inquiry For Improving Understanding The Concept of Fraction Addition at Fourth Grade Students of State Madrasah Ibtidaiyah Malang 2

In the learning process, the teacher expected able to make the atmosphere of learning activity to invite and stimulate students interest to active in the learning process, for achieving the goal of mathematics learning that has described by PERMENDIKNAS about mastery of concept mathematics is being something important that must be done by teacher, teacher must arrange the best learning methodology for students by using the approaches, methods, in syllabus and lesson plan which proper by students development, to be applied in the classroom for understanding the materials in the mathematics subject, the proper learning will make easy students for understanding the context of learning which studied.³

Learning to achieve understanding the concept as ideal like in government standard has done in this research, in the process of Implementation of Guidance Inquiry For Improving Understanding The Concept of Fraction Addition at Fourth Grade Students of State Madrasah Ibtidaiyah Malang 2, attendance of researcher as the complex role, as the teacher, observer, and the reporter of this research.

During the process of research guidance inquiry implemented by a pre- test activity and a set of cycle I that ended by post test in the last of Cycle II, pre test to measure the early achievement of students before given the action by implementing guidance inquiry, in the process of this research by implementing guidance inquiry, teacher instructs the students to make group discussion, however in the group discussion every students

³ *Standar kurikulum Pendidikan Nasional tentang standar pembelajaran Matematika*. 2006. page 416

are get each folding paper (*kertas lipat*) and work sheet to search the concept of fraction addition inquiry, is not from teacher's doctination, eanthusias of students learning spirit also look better, because they can learn by what they do. They can learn by ask, make the hypotesis, untill , learn by investigate, and prove it, as the set of inquiry characters has done nicely in the students fourth grade of MIN Malang 2.

During cycles of this research done students able to find the concept of fraction addition, begin from drawing up for adding by folding paper. In the final of this research , result of post – test showing good improvement of students understanding the concept and students learning achievment for the prove and as the support data.

C. The Evaluation of Implementation of Guidance Inquiry For Improving Understanding The Concept of Fraction Addition at Fourth Grade Students of State Madrasah Ibtidaiyah Malang 2

Evaluation of this research is done in the first meeting as the measurement of early achievement information. For meassuring the improvement of understanding the concept of fraction addition is done in the end of CYCLE and Post test evaluation. Information of improvement the concept is measured by basic aspects of understanding such as :

1. Drawing the Figure of Fraction (92 %)
2. Cutting Paper to be parts of fraction (89 %)
3. Matching value and shapeof the Fraction (74 %)

4. Finding the manner of Adding the Fraction with equal denominator by folding paper (81 %)
5. Finding the manner of Adding the Fraction with unequal denominator by folding paper (85 %)



CHAPTER VI

CONCLUSION AND SUGGESTION

In this chapter is describing the conclusion of research research which have described specifically in the previous chapters, and the commands is about what researcher opinion on the next another research result

a. Conclusion

1. Preparation of this research is done by preparing all necessities of process and evaluation of research, begin from indentifying the problem as the background of study, that rised the desire to do research for solving the problem of understanding the concept in mathematics (*fraction addition*), by using guidance inquiry the main approach for solving the problem of understanding the concept and prepare observation sheet to meassure the evaluation toward progress of this research
2. In the process of this research attendance of researcher as the data collector, observer, and also the teacher, reports the process of this research start from identifying the problem, consult by math's teacher, therefore the process of this research is started from identification of problem, consult the best approach for solving the problem, do the classroom action research through two Cycles and do post test as the final evaluation the succes of this research, in the process of research students

activity is stressed for searching the concept of fraction addition by teacher guide, not by teacher doctination

3. Evaluation of this research is resulting good improvement on the understanding the concept that support the good achievement in the final meeting (post test result), avrage of students able to pass minimum evaluation criteria of school (KKM), and able to undesrtand the concept of fraction addition comperhensively.

b. Commands

Based on the conclusion of result the research. Rsearcher gives commannds as follows :

1) Students

In the learning activity, ideally students more active and include direrctly in the process of learning, do not think teachers is themain sorces of learning materials, students able to search and seek the materials by their potential as the learners

2) Teacher

Ideally, teacher as the fasilitator of learning activity, able to take tyhe adventage on students creativity, students involve, as the manner to give meanningfull learning by pesigning the learning style of students and chhose the media that able to make easy learning process of students.

3) Institution

For the school (institution), through this research is giving new information that ideally learning result is not stressing the result achievement, but in the process of gaining knowledge achievement, because the meaningful process able to improve the achievement of students

4) Researcher :

This research able to give new practically experience, as the investment of teaching skill in the future.

5) Another researcher

In the result of this research can be used as the referencess in the research with guidance inquiry in the different variable, in order to achieve best result of the research.

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LESSON PLAN 1 (Pre – Test)

Name of School : MIN Malang 2

Subject : Mathematic

Class/ Semester : IV/II

Time Allocation : 2 X 35 Minutes

Meeting : 1 (Pre-test)

Standard of Competency : Use the fraction, for solving daily problem

Basic Competency : Adding The Fraction

A. Indicators : Adding the Fraction with equal denominator
Adding the Fraction with unequal denominator

B.Characters : Religious, Curious, Independent, Responsibility

C.Learning Method: **(Guidance Inquiry)** Lecture, Ask and Answer

D. Learning Activity :

No	Learning Activities	Method	Character	Time Allocation
1	Opening Activity : <ul style="list-style-type: none"> ➤ Teacher and students give greeting one and each other, ➤ Teacher conveyed the goal of learning activity of today ➤ Teacher ask student knowledge about fraction 	Ask and answer	Respect each other Curious	5

2.	<p>Core Activity :</p> <p><u>Exploration:</u></p> <ul style="list-style-type: none"> ➤ Teacher quaries the information of students skill about the manner of fraction addition, ➤ Students answer teacher's question by their intuition, Teacher gives reward for students whose brave to answer, ➤ Teacher instructs the students to draw form of fraction addition that has be done. <p><u>Elaboration :</u></p> <ul style="list-style-type: none"> ➤ Teacher gives explanation related the fraction with equal denominator (<i>Penyebut</i>) and ➤ Students are given chance to ask unclear thing, after all activities done ➤ Teacher gives example of fraction addition of fraction with unequal dorminator by using lecuture (<i>Doctrine Approach</i>). 	<p>Guidance</p> <p>Inquiry</p> <p>Guidance</p> <p>Inquiry</p> <p>Guidance</p> <p>Inquiry</p>	<p>Curious</p> <p>Responsibility</p>	60
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	<ul style="list-style-type: none"> ➤ Teacher asks to student about what that obstacle faced of student before Students are given pre-test sheet ➤ Teacher instructs student to do the pretest pre-test sheet ➤ Students do pre- test sheet ➤ Students submit their pre- test result. ➤ By teacher's guide students check the result of pre-test <p><u>Confirmation</u></p> <ul style="list-style-type: none"> ➤ Teacher instructs student to show the way of adding fraction with unequal dorminator and ➤ Students that able to do and show the manner of adding unequal dorminator, stands in front of class to do it 		Independent Responsibility	
3	<p>Closing</p> <ul style="list-style-type: none"> ➤ Teacher infoms the next activity meeting ➤ Students and teacher close meeting by reciting hamdalah 	Lecture	Religious	5

E. Subject Matter :

Fraction Concept

F. Media, Tools, and Sources

- Board Marker
- Text Book
- White Board

G. Evaluation Format

No	Evaluation Items	Mode of Test	Form of Test	Question example
1	Pre- Test Result	Writing Test	Pencil and paper test	$\frac{1}{2} + \frac{1}{2} =$
2.	Conceptual Prove	Perform (Appearance)	portofolio	<i>Can you explain the reason of your answer?</i>

No	Student's Name	Early Appearance of Understanding The Concept				Pre test Result
		1	2	3	4	
1.						
2.						
3.						

*) Student's Understanding The Concept Measured from Their brave and show these items :

- 1) Drawing the figure of fraction
- 2) Showing the manner
- 3) Giving the reason
- 4) Knowing well the Fraction Form and Figure Comperhensively

Knowing,

Malang,

Math's Teacher

Researcher

Eko Ufi Nuskhayati, S.PdRizal Fahrozi

NIP. 197709082007102002

NIM . 09140048

Pre Test Sheet

1. $\frac{1}{3} + \frac{1}{3} =$

2. $\frac{1}{2} + \frac{1}{2} =$

3. $\frac{1}{4} + \frac{3}{4} =$

4. $\frac{2}{5} + \frac{4}{7} =$

5. $\frac{2}{3} + \frac{11}{4} =$

6. $\frac{5}{4} + \frac{2}{6} =$

7. $\frac{1}{6} + \frac{3}{7} =$

8. $\frac{1}{12} + \frac{9}{12} =$

9. $\frac{3}{4} + \frac{2}{5} =$

10. $\frac{2}{3} + \frac{3}{9} =$

Table of Pre test Result

NO	NAME	SCORE
1	Aditya Fandi P	60
2	Alysia Qodratun N	70
3	Andra Saifullah	30
4	Anisa Riski Saqinah	50
5	Aurelia Nanda P	70
6	Dimas Arya Y	70
7	Diva Khoirun N	50
8	Elfahryan Putra D	40
9	FarachIzzah	40
10	Farah Tania S	30
11	Hanata Akhmad	40
12	Hildan Ahmad	60
13	Janice Marsha A	40
14	Kevian Dzaky P	30
15	Khansa Cahaya D	70
16	M. Ibnu A	70
17	M. Suryo A	40
18	M. Edwin D	70
19	M. Iskandar	30
20	Nabilla Safa S	80
21	Nadia	40
22	Naldo Kusindarta A	40
23	Nathan Abid M	50
24	Rahmawati Indira	30
25	Rona Rifitriana D	40
26	SyafiraAulia P	70
27	Viga Rahmaria Dhani C	70
TOTAL		1390
AVERAGE		51, 48

	addition with equal and unequal denominator			
1.	<p>Core Activity :</p> <p><u>Exploration:</u></p> <ul style="list-style-type: none"> ➤ Teacher gives student question about the manner to solve this question $(\frac{1}{2} + \frac{1}{2})$ and, $(\frac{1}{2} + \frac{1}{3})$, ➤ Students answer the questions by their understanding ➤ Teacher gives review and clarification about their answers ➤ Students make 5 Group discussion (consist of 5 and 6 members of group) <p>Elaboration :</p> <ul style="list-style-type: none"> ➤ After making group discussion, teacher gives work sheet for each group discussion ➤ Teacher guides students to do the work sheet, ➤ Students and their group discussion finish the task in the worksheet 	<p>Assignment</p> <p>Guidance</p> <p>Inquiry</p> <p>Guidance</p> <p>Inquiry</p> <p>(Group discussion)</p>	<p>Indpendet</p> <p>Work Together</p>	60

	<p>Confirmation</p> <ul style="list-style-type: none"> ➤ By teacher's guide students discuss the result of their worksheet ➤ Teacher gives feed back for students about the worksheet result ➤ Students return to their chair in of each students 	<p>Guidance</p> <p>Inquiry</p>		
	<p>Closing</p> <ul style="list-style-type: none"> ➤ Teacher informs the next activity meeting ➤ Students instructed by teacher to keep their sit position in their group discussion for the next meeting ➤ Students and teacher close meeting by reciting hamdalah 	<p>Lecture</p>	<p>Religious</p>	5

E. Learning sources :

- text book
- Students worksheet

F. Media of Learning :

- Folding Paper

Evaluation Format

No	Evaluation Items	Mode of Test	Form of Test	Question example
1	Conceptual Prove of Fraction addition with	Perform (Appear)	Portofolio	Draw this Fraction ($\frac{1}{2}$)

	equal denominator	nce)		
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No	Group's and Student's Name	Percentage Appearance of Understanding The Concept in First Meeting			
		1	2	3	4
1.					
2.					
3.					
4					
5					

***) Note :**

1. Drawing the Figure of Fraction
2. Cutting Paper to be parts of fraction
3. Matching value and shape of Fraction
4. Finding the manner of Adding the Fraction with equal denominator by folding paper

Knowing,

Math's Teacher

Malang,.....

Researcher

Eko Ufi Nuskhayati, S.Pd

NIP. 197709082007102002

Rizal Fahrozi

NIM . 09140048

STUDENT'S WORK SHEET

Subject : Mathematics
Class/ Semester : 4/ II
Matterial Focus : Fraction Addition With
Equal Denominator

Group Name:

Member Name :

1	5.
2	6.
3	
4	

Do following activities in your group!

A. Prove the fraction in the picture

Draw these fraction rightly, ($\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{6}$), in the paper that have given

B. Prove the fraction Shape in the cuts of paper

1. Take a one your paper and make your paper to become, $\frac{1}{2}$ part of that paper
2. And, Take a one your paper and make your paper to become $\frac{1}{3}$ part again
3. Just do it up to $\frac{1}{4}, \frac{1}{6}, \frac{1}{8}$
4. When all parts of fraction have been shaped in the cuts of paper, than stamp it as suitable with the nominal of that fraction

C. LOOK FOR THE CONCEPT OF FRACTION ADDITION WITH EQUAL DENOMINATOR

1. Solve this fraction ($\frac{1}{2} + \frac{1}{2}$), through folding paper (*kertas lipat*),
2. Just fold your each paper, from a piece of paper sparate to become $\frac{1}{2}$ part of that paper, fold it vertically,
3. Give line and mark it,
4. Return the paper like in the early form
5. and fold again $\frac{1}{2}$ horizontally, and mark it like in the vertical fold, and mark it again
6. Count the total of box as the denominator (*Penyebut*), and the boxs are blocked as the numenator (*Pembilang*)

LESSON PLAN 3

Name of School : MIN Malang 2

Subject : Mathematic

Class/ Semester : IV/II

Time Allocation : 2 X 35 Minutes

Meeting : 2 (CYCLE 1)

Standard of Competency : Use the fraction, for solving daily problem

Basic Competency : Adding The Fraction

- A. Indicators :
- Knowing the manner of Fraction Addition with unequal denominator through folding paper (*kertas lipat*) and formula
 - Finding the concept and manner of faction Addition with unequal denominator addition by finding KPK

B.Characters : Religious, Respect each other, Curious, Independent, work Together

C.Learning Method: **(Guidance Inquiry)** Lecture, Ask and Answer, Assignment, Group discussion

D. Learning Activity :

No	Learning Activities	Method	Character	Time Alocation
1	Opening Activity : <ul style="list-style-type: none"> ➤ Teacher and students give greeting one and each other and ➤ Teacher conveyed the goal of learning activity of today, Teacher gives 		Respect each other	5

	<ul style="list-style-type: none"> ➤ aperception by the question of second meeting ($\frac{1}{3} + \frac{1}{3}$), ➤ Teacher also ask student knowledge about fraction with unequal denominator. 	Ask and answer	Curious	
1.	<p>Core Activity :</p> <p><u>Exploration:</u></p> <ul style="list-style-type: none"> ➤ Teacher gives student question about the manner to solve this question ($\frac{1}{2} + \frac{1}{2}$) and, ($\frac{1}{2} + \frac{1}{3}$), ➤ Students answer the questions by their understanding. ➤ The result of students answers is related with Teacher gives review and clarification about their answers. <p>Elaboration :</p> <ul style="list-style-type: none"> ➤ After making group discussion, teacher gives work sheet for each group discussion ➤ Techer guides students to do 	<p>Assignment</p> <p>Guidance Inquiry</p> <p>(Group</p>	Independet	60

	<p>the work sheet,</p> <ul style="list-style-type: none"> ➤ Students and their group discussion finish the task in the worksheet <p>Confirmation</p> <ul style="list-style-type: none"> ➤ By teacher's guide students discuss the result of their worksheet and ➤ Teacher gives feed back for students about the worksheet result. 	<p>discussion)</p> <p>Guidance</p> <p>Inquiry</p>	<p>Work Together</p>	
	<p>Closing</p> <ul style="list-style-type: none"> ➤ Teacher informs the next activity meeting ➤ Students instructed by teacher to keep their sit position in their group discussion for the next meeting ➤ Students and teacher close meeting by reciting hamdalah 	<p>Lecture</p>	<p>Religious</p>	5

E. Learning sources :

- text book
- Students worksheet

F. Media of Learning :

- Folding Paper

Evaluation Format

No	Evaluation Items	Mode of Test	Form of Test	Question example
1	Conceptual Prove of Fraction addition with unequal denominator	Perform (Appearance)	Portofolio	<i>solve this Fraction</i> $(\frac{1}{2} + \frac{1}{3})$

No	Group's and Student's Name	Percentage Appearance of Understanding The Concept in Second Meeting	
		1	2
1.			
2.			
3.			
4			
5			

*) Note :

1. Finding the manner of Adding the Fraction with unequal denominator by folding paper
2. Finding the concept of equalizing denominator by KPK

Knowing,

Math's Teacher

Malang,.....

Researcher

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NIM . 09140048

STUDENT'S WORK SHEET

Subject : Mathematics
Class/ Semester : 4/ II
Matterial Focus : Fraction Addition With
 Unequal Denominator

Group Name:

Member Name :

1	5.
2	6.
3	
4	

Do Following activities in your previous group!

Answer it according your understanding,

1. $\frac{1}{2} + \frac{1}{3} = \dots$
2. $\frac{1}{3} + \frac{1}{4},$

LOOK FOR THE CONCEPT OF FRACTION ADDITION WITH EQUAL DENOMINATOR

1. Solve this fraction ($\frac{1}{2} + \frac{1}{3}$), through folding paper (*kertas lipat*),
2. Just fold your each paper, from a piece of paper sparate to become $\frac{1}{2}$ part of that paper, fold it vertically,
3. Give line and mark it,
4. Return the paper like in the early form
5. and fold again $\frac{1}{3}$ horizontally, and mark it like in the vertical fold, and mark it again
6. Count the total of box as the denominator (*Penyebut*), and the boxs are blocked as the numenator (*Pembilang*)
7. do it in this question $\frac{1}{3} + \frac{1}{4},$

After all of you doing activity above, all of you will find the multiplied of these fraction,

$\frac{1}{2} + \frac{1}{3}$ and, $\frac{1}{3} + \frac{1}{4},$ and each of denominators will rise the multiplication numbers.

and the multiplied of each number is 2 and 3, 3 and 4,

LESSON PLAN 4

Name of School : MIN Malang 2

Subject : Mathematic

Class/ Semester : IV/II

Time Allocation : 2 X 35 Minutes

Meeting : 3 (CYCLE 1)

Standard of Competency : Use the fraction, for solving daily problem

Basic Competency : Adding The Fraction

A. Indicators :

- Understanding the concept of fraction addition with equal and unequal denominator

B.Character : Religious, Respect each other, Curious, Independent, work Together

C.Learning Method: (**Guidance Inquiry**) Lecture, Ask and Answer, Assignment, Group discussion

D. Learning Activity :

No	Learning Activities	Method	Character	Time Allocation
1	Opening Activity : <ul style="list-style-type: none"> ➤ Reciting Basmallah, ➤ and teacher and students give greeting one and each other, ➤ teacher informs activity of this meeting , related by Post test activity, 	Lecture		5

1.	<p>Core Activity :</p> <p><u>Exploration:</u></p> <ul style="list-style-type: none"> ➤ Teacher try to ask students , about what they have gotten yesterday, ➤ and teacher give opportunity to students to ask more about Fraction that not understood, before doing pre- test, ➤ teacher gives question $(\frac{3}{8} + \frac{5}{9})$, students whose able to do it pleased to come in front of class. ➤ Teacher gives reward for students. <p>Elaboration :</p> <ul style="list-style-type: none"> ➤ Teacher give question sheet for all students, ➤ teacher instruct students to do the post test sheet independently, ➤ teacher instructs student to do the post test without use the media, ➤ students finish the post 	Assignment	Independent	60
		Guided Inquiry	Work Together	

	<p>tes</p> <p>Confirmation</p> <ul style="list-style-type: none"> ➤ By teacher's guide students discuss the result of their worksheet and ➤ Teacher gives feed back for students about the worksheet result. 			
	<p>Closing</p> <ul style="list-style-type: none"> ➤ Teacher gives reward for students, and ➤ teacher give reinforcement to students related the fraction addition materials conceptly or theoritically Students and ➤ teacher close meeting by reciting hamdalah 	Lecture	Religious	5

Evaluation Format

No	Evaluation Items	Mode of Test	Form of Test	Question example
1	Post Test	Writing	Pencil and paper test	<i>solve this Fraction</i> $(\frac{1}{2} + \frac{1}{3})$

Knowing,
Math's Teacher

Malang,
Researcher

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NIM . 09140048



Post- test Sheet

1. $\frac{1}{3} + \frac{1}{4} =$

2. $\frac{1}{2} + \frac{1}{6} =$

3. $\frac{1}{4} + \frac{3}{4} =$

4. $\frac{2}{5} + \frac{4}{7} =$

5. $\frac{2}{3} + \frac{11}{4} =$

6. $\frac{5}{4} + \frac{2}{6} =$

7. $\frac{1}{6} + \frac{3}{7} =$

8. $\frac{1}{12} + \frac{9}{12} =$

9. $\frac{3}{4} + \frac{2}{5} =$

10. $\frac{2}{3} + \frac{3}{9} =$

11. $\frac{1}{3} + \frac{1}{3} =$

12. $\frac{1}{2} + \frac{1}{2} =$

13. $\frac{1}{4} + \frac{3}{4} =$

14. $\frac{2}{5} + \frac{4}{7} =$

15. $\frac{2}{3} + \frac{11}{4} =$

16. $\frac{5}{4} + \frac{2}{6} =$

$$17. \frac{1}{6} + \frac{3}{7} =$$

$$18. \frac{1}{12} + \frac{9}{12} =$$

$$19. \frac{3}{4} + \frac{2}{5} =$$

$$20. \frac{2}{3} + \frac{3}{9} =$$



ACHIEVEMENT DURING RESEARCH

NO	Name	Understanding the Concept of fraction Criteria						Pre test	CYCLE I (post test)
		1	2	3	4	5	6		
1	Aditya Fandi P	v	v	v	v	v	v	60	90
2	Alysia Qodratun N	v	v	v	v	-	v	70	90
3	Andra Saifullah	v	v	v	v	v	-	30	80
4	Anisa Riski Saqinah	v	-	v	v	v	v	50	80
5	Aurelia Nanda P	v	v	v	v	v	v	70	90
6	Dimas Arya Y	v	v	v	-	v	v	70	100
7	Diva Khoirun N	v	v	v	-	v	v	50	60
8	Elfahryan Putra D	v	-	v	-	v	v	40	100
9	FarachIzzah	v	v	v	-	v	v	40	90
10	Farah Tania S	v	v	v	-	v	v	30	95
11	Hanata Akhmad	v	v	-	v	v	v	40	70
12	Hildan Ahmad	v	v	-	v	v	-	60	65
13	Janice Marsha A	v	v	-	v	v	-	40	80
14	Kevian Dzaky P	v	v	-	v	v	v	30	90
15	Khansa Cahaya D	v	v	v	v	v	v	70	80
16	M. Ibnu A	-	v	v	v	-	-	70	90
17	M. Suryo A	v	v	-	v	v	v	40	90
18	M. Edwin D	v	v	v	v	v	-	70	90
19	M. Iskandar	v	v	v	v	v	v	30	70
20	Nabilla Safa S	v	v	v	v	v	v	80	90
21	Nadia	v	v	v	v	-	v	40	100
22	Naldo Kusindarta A	-	v	v	v	-	v	40	65
23	Nathan Abid M	v	-	v	v	v	v	50	90
24	Rahmawati Indira	v	v	-	v	v	v	30	80
25	Rona Rifitriana D	v	v	v	v	v	v	40	100
26	SyafiraAulia P	v	v	v	v	v	v	70	80
27	Viga Rahmadhani C	v	v	v	v	v	-	70	80
Apperance Percenatge of Understanding the Concept of Frction Addition		92 %	89 %	74 %	81 %	85 %	78 %	Total : 1390	Total : 2285
TOTAL PROGRESS		83, 17 %						Average : 51, 48	Average : 84, 62

DOCUMENTATION

First Meeting (Pre- Test)



CYCLE 1 (first meeting)



Second meeting



Third meeting (Post- test)



SYLLABUS OF MATHEMATICS LEARNING

Name of school : MIN Malang 2

Class/ Semester : 4/ II

Subject Matter : Mathematic (Fraction)

Standard Of Competency : Use The Fraction, For Solving Daily Problem

Basic Competence	Main matterial	Indicators	Students Activity	Evaluation	Time allocation	learning Sources, and Media
1	2	3	4	5	6	7
Adding The Fraction	Fraction addition	Adding the Fraction with equal denominator Adding the Fraction with unequal denominator	Opening Activity : <ul style="list-style-type: none"> ➤ Teacher and students give greeting one and each other, ➤ Teacher conveyed the goal of learning activity of today ➤ Teacher ask student knowledge about fraction 	Writing Test Perform (Appearance)	2 x 35 minutes	Text book. Folding papaer Students worksheet
			Core Activity : <u>Exploration:</u> <ul style="list-style-type: none"> ➤ Teacher quarries the information of students skill about the manner of fraction addition, 			

			<ul style="list-style-type: none"> ➤ Students answer teacher's question by their intuition, Teacher gives reward for students whose brave to answer, ➤ Teacher instructs the students to draw form of fraction addition that has been done. <p><u>Elaboration :</u></p> <ul style="list-style-type: none"> ➤ Teacher gives explanation related the fraction with equal denominator (<i>Penyebut</i>) and ➤ Students are given chance to ask unclear thing, after all activities done ➤ Teacher gives example of fraction addition of fraction with unequal denominator by using lecture (<i>Doctrine Approach</i>). ➤ Teacher asks to student about what that obstacle faced of student before <p>Students are given pre-</p>			
--	--	--	---	--	--	--

			<p>test sheet</p> <ul style="list-style-type: none"> ➤ Teacher instructs student to do the pretest pre-test sheet ➤ Students do pre- test sheet ➤ Students submit their pre- test result. ➤ By teacher's guide students check the result of pre-test <p><u>Confirmation</u></p> <ul style="list-style-type: none"> ➤ Teacher instructs student to show the way of adding fraction with unequal dorminator and ➤ Students that able to do and show the manner of adding unequal dorminator, stands in front of class to do it 			
			<p><u>Closing</u></p> <ul style="list-style-type: none"> ➤ Teacher infoms the next activity meeting ➤ Students and teacher close meeting by reciting hamdalah 			

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Standard Of Competency : Use The Fraction, For Solving Daily Problem

Basic Competence	Main matterial	Indicators	Students Activity	Evaluation	Time allocation	learning Sources, and Media
1	2	3	4	5	6	7
Adding The Fraction	Fraction addition With equal denominator	<ul style="list-style-type: none"> ➤ Understanding the concept of Fraction Addition with equal denominator ➤ Knowing the manner of Fraction Addition with equal denominator through <i>folding paper</i> and formula ➤ Adding the Fraction with equal denominator 	Opening Activity : <ul style="list-style-type: none"> ➤ Teacher and students give greeting one and each other ➤ Teacher conveyed the goal of learning activity of today ➤ Teacher ask student knowledge about fraction addition with equal and unequal denominator 	Writing Test Perform (Appearance)	2 x 35 minutes	Text book. Folding papaer Scissors, Glue Students worksheet

			<p>Core Activity :</p> <p><u>Exploration:</u></p> <ul style="list-style-type: none"> ➤ Teacher gives student question about the manner to solve this question $(\frac{1}{2} + \frac{1}{2})$ and, $(\frac{1}{2} + \frac{1}{3})$, ➤ Students answer the questions by their understanding ➤ Teacher gives review and clarification about their answers ➤ Students make 5 Group discussion (<i>consist of 5 and 6 members of group</i>) <p>Elaboration :</p> <ul style="list-style-type: none"> ➤ After making group discussion, teacher gives work sheet for each group discussion ➤ Teacher guides students to do the work sheet, ➤ Students and their group discussion finish the task in the worksheet <p>Confirmation</p> <ul style="list-style-type: none"> ➤ By teacher's guide students discuss the result of their 			
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			<p>worksheet</p> <ul style="list-style-type: none"> ➤ Teacher gives feed back for students abot the worksheet result ➤ Students return to their chair in of each students 			
			<p>Closing</p> <ul style="list-style-type: none"> ➤ Teacher infoms the next activity meeting ➤ Students instructed by teacher to keep their sit position in their group discussion for the next meting ➤ Students and teacher close meeting by reciting hamdalah 			

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Class/ Semester : 4/ II

Standard Of Competency : Use The Fraction, For Solving Daily Problem

Basic Competence	Main material	Indicators	Students Activity	Evaluation	Time allocation	learning Sources, and Media
1	2	3	4	5	6	7
Adding The Fraction	Fraction addition with unequal denominator	<ul style="list-style-type: none"> ➤ Knowing the manner of Fraction Addition with unequal denominator through <i>folding paper</i> and formula ➤ Finding the concept and manner of fraction Addition with unequal denominator addition by finding KPK 	Opening Activity : <ul style="list-style-type: none"> ➤ Teacher and students give greeting one and each other and ➤ Teacher conveyed the goal of learning activity of today, Teacher gives aperception by the question of second meeting ($\frac{1}{3} + \frac{1}{3}$), ➤ Teacher also ask student knowledge about fraction with unequal denominator. 	Writing Test Perform (Appearance)	2 x 35 minutes	Text book. Folding papaer Scissors, Glue Students worksheet

			<p>Core Activity : <u>Exploration:</u></p> <ul style="list-style-type: none"> ➤ Teacher gives student question about the manner to solve this question ($\frac{1}{2} + \frac{1}{2}$) and, ($\frac{1}{2} + \frac{1}{3}$), ➤ Students answer the questions by their understanding. ➤ The result of students answers is related with Teacher gives review and clarification about their answers. <p>Elaboration :</p> <ul style="list-style-type: none"> ➤ After making group discussion, teacher gives work sheet for each group discussion ➤ Teacher guides students to do the work sheet, ➤ Students and their group discussion finish the task in the worksheet <p>Confirmation</p> <ul style="list-style-type: none"> ➤ By teacher's guide students discuss the 			
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			<p>result of their worksheet and</p> <ul style="list-style-type: none"> ➤ Teacher gives feed back for students about the worksheet result. 			
			<p>Closing</p> <ul style="list-style-type: none"> ➤ Teacher infoms the next activity meeting ➤ Students instructed by teacher to keep their sit position in their group discussion for the next meting ➤ Students and teacher close meeting by reciting hamdalah 			



SYLLABUS OF MATHEMATICS LEARNING

Name of school : MIN Malang 2

Class/ Semester : 4/ II

Subject Matter : Mathematic (Fraction)

Standard Of Competency : Use The Fraction, For Solving Daily Problem

Basic Competence	Main matterial	Indicators	Students Activity	Evaluation	Time allocation	learning Sources, and Media
1	2	3	4	5	6	7
Adding The Fraction	Fraction addition with equal and unequal denominator In the post test	➤ Understanding the concept of fraction addition with equal and unequal denomintor	Opening Activity : <ul style="list-style-type: none"> ➤ Reciting Basmallah, ➤ and teacher and students give greeting one and each other, ➤ teacher informs activity of this meeting , related by Post test activity, 	POST TEST Perform (Appearance)	2 x 35 minutes	Text book. POST TEST
			Core Activity : <u>Exploration:</u> <ul style="list-style-type: none"> ➤ Teacher try to ask students , about what they have gotten yesterday, 			

			<ul style="list-style-type: none"> ➤ and teacher give opportunity to students to ask more about Fraction that not understood, before doing pre- test, ➤ teacher gives question $(\frac{3}{8} + \frac{5}{9})$, students whose able to do it pleased to come in front of class. ➤ Teacher gives reward for students. <p>Elaboration :</p> <ul style="list-style-type: none"> ➤ Teacher give question sheet for all students, ➤ teacher instruct students to do the post test sheet independently, ➤ teacher instructs student to do the post test without use the media, ➤ students finish the post tes <p>Confirmation</p> <ul style="list-style-type: none"> ➤ By teacher's guide 			
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			<p>students discuss the result of their worksheet and</p> <ul style="list-style-type: none"> ➤ Teacher gives feed back for students about the worksheet result. 			
			<p>Closing</p> <ul style="list-style-type: none"> ➤ Teacher gives reward for students, and ➤ teacher give reinforcement to students related the fraction addition materials conceptly or theoritically Students and ➤ teacher close meeting by reciting hamdalah 			

Knowing,
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