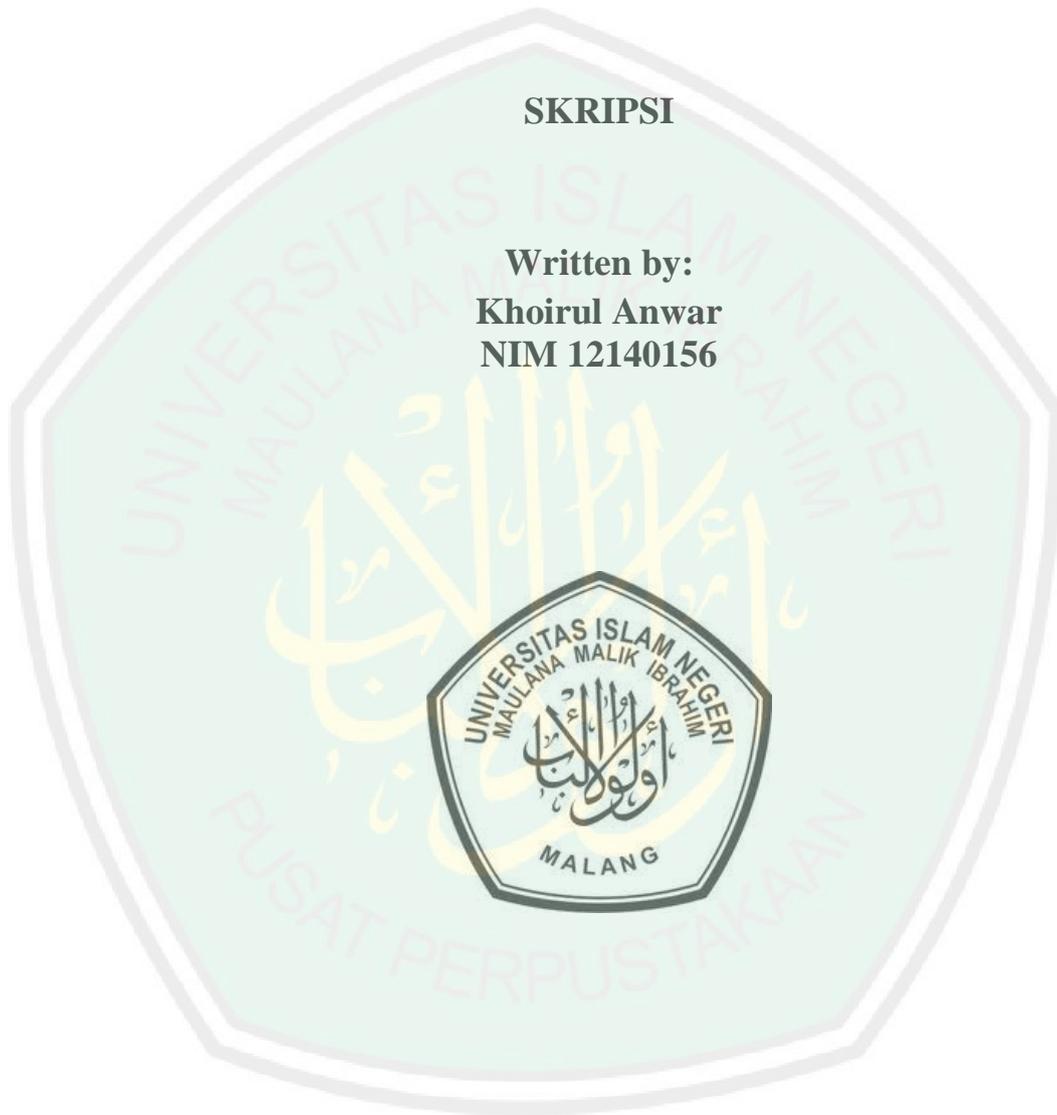


**MISCONCEPTIONS OF STUDENTS SOLVING
MATHEMATICS WORD PROBLEM IN MATERIAL THE
LEAST COMMON MULTIPLE AND GREATEST COMMON
FACTOR**

SKRIPSI

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**ISLAMIC PRIMARY TEACHER EDUCATION PROGRAM
TARBIYAH AND TEACHER TRAINING FACULTY
MAULANA MALIK IBRAHIM STATE ISLAMIC
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December, 2017

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Malang, December 23th, 2017

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Dean of Tarbiyah and Teacher Training Faculty
Maulana Malik Ibrahim State Islamic University, Malang
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Malang

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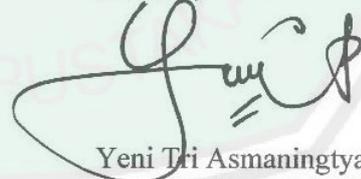
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**MISCONCEPTIONS OF STUDENTS SOLVING
MATHEMATICS WORD PROBLEM IN MATERIAL THE
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FACTOR**

SKRIPSI

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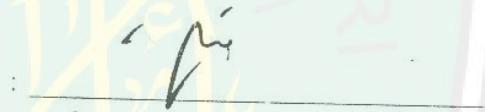
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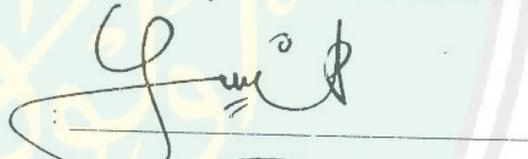
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Malang, December 23th, 2017



Khoirul Anwar

MOTTO

يُوصِيكُمُ اللَّهُ فِي أَوْلَادِكُمْ لِلَّذِ كَرِ مِثْلُ حَظِّ الْأُنثَيَيْنِ فَإِن كُن نِسَاءً فَوْقَ اثْنَتَيْنِ فَلَهُنَّ ثُلُثَا مَا تَرَ كَ وَإِن كَانَتْ وَاحِدَةً فَلَهَا النِّصْفُ وَلِأَبْوَيْهِ لِكُلِّ وَاحِدٍ مِّنْهُمَا السُّدُسُ مِمَّا تَرَ كَ إِن كَانَ لَهُ وَلَدٌ فَإِن لَّمْ يَكُن لَهُ وَلَدٌ وَوَرِثَهُ أَبَوَاهُ فَلِأُمِّهِ الثُّلُثُ فَإِن كَانَ لَهُ إِخْوَةٌ فَلِأُمِّهِ السُّدُسُ مِن بَعْدِ وَصِيَّتِهِ يُوصِي بِهَا أَوْ دِينَ ءَابَاؤُكُمْ وَأَبْنَاؤُكُمْ لَا تَدْرُونَ أَيُّهُمْ أَقْرَبُ لَكُمْ نَفْعًا فَرِيضَةٌ مِّنَ اللَّهِ إِنَّ اللَّهَ كَانَ عَلِيمًا حَكِيمًا ﴿١١﴾

(Q.s. An Nisa': 11) Allah mensyari'atkan bagimu tentang (pembagian pusaka untuk) anak-anakmu. Yaitu : bahagian seorang anak lelaki sama dengan bagahian dua orang anak perempuan; dan jika anak itu semuanya perempuan lebih dari dua, Maka bagi mereka dua pertiga dari harta yang ditinggalkan; jika anak perempuan itu seorang saja, Maka ia memperoleh separo harta. dan untuk dua orang ibu-bapa, bagi masing-masingnya seperenam dari harta yang ditinggalkan, jika yang meninggal itu mempunyai anak; jika orang yang meninggal tidak mempunyai anak dan ia diwarisi oleh ibu-bapanya (saja), Maka ibunya mendapat sepertiga; jika yang meninggal itu mempunyai beberapa saudara, Maka ibunya mendapat seperenam. (Pembagian-pembagian tersebut di atas) sesudah dipenuhi wasiat yang ia buat atau (dan) sesudah dibayar hutangnya. (Tentang) orang tuamu dan anak-anakmu, kamu tidak mengetahui siapa di antara mereka yang lebih dekat (banyak) manfaatnya bagimu. ini adalah ketetapan dari Allah. Sesungguhnya Allah Maha mengetahui lagi Maha Bijaksana¹.

¹ Al-Qur'an dan Terjemahnya (Jakarta: Maghfirah Pustaka) page. 78

PAGE OF DEDICATION

With the blessing of Allah SWT and His mercies,

I am grateful and I want to thank to :

My beloved mother, who support me with their great efforts,
Robb, irhamhuma kama Robbayani shoghiro . .

My beloved father, unforgettable memory with you, RIP
Allahummaghfirlahu Warhamhu Wa'afih Wa'fu'anhu

My beloved family, I won't forget their kindness.

My *Kyai* who teach me the meaning of this world,
Hopefully his knowledge always lighten up Islam

All of the teacher who sincerely educated me,
Thanks for the priceless knowledge

My friends at Pondok *Pesantren* Salafiyah Syaf'iyah Nurul Huda Mergosono
Malang,

Keep finding that abosolute truth, until we reach the eternal happiness

My little family, Islamic Primary Teacher Program PGMI ICP Class of 2012,
Thank for your smiles, you all are my spirit during my study in this University

And all of the parties who support me in this thesis finishing process,

Thank for your time in helping me during the process

PREFACE

Praise and great gratitude submitted to Almighty God, Allah SWT who always gives His gracious mercy and tremendous blessing that has help the writer finished this thesis, entitled : “Misconceptions of Students Solving Mathematics Word Problem in the Material the Least Common Multiple and Greatest Common Factor” . In this opportunity, the writer give so much thank and appreciation for the respectables :

1. Prof. Dr. H. Abdul Haris, M.Ag. as the Rector of Maulana Malik Ibrahim State Islamic University Malang, who has given me a opportunity, so that this thesis can be well finished.
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7. All of the parties who has help me, both directly and indirectly who have great contribution in this thesis finishing process.

The writer is aware that, this thesis is still far away from perfection. Therefore suggestion and critic are expected from any parties so that it can be an improvement in the future. As thankful expression, the writer just able to pray, hopefully all of your good deeds are accepted by Allah SWT.

Finally, the writer just expected from this thesis so that it can be a benefit for readers in general and especially for the writer self. Amiin Ya Robbal'Alamin

Malang, December 26th, 2017

Writer



TRANSLITERATION GUIDELINES OF ARAB LATIN

Translation of Arab Latin in this Thesis utilize in translation guidelines based on the agreement between Religion Minister and Education and Culture Minister of Indonesia number 158, 1987 and number 0543 b/U/1987. Those are:

A. Letter

ا	=	a	ز	=	z	ق	=	q
ب	=	b	س	=	s	ك	=	k
ت	=	t	ش	=	sy	ل	=	l
ث	=	ts	ص	=	sh	م	=	m
ج	=	j	ض	=	dl	ن	=	n
ح	=	h	ط	=	th	و	=	w
خ	=	kh	ظ	=	zh	ه	=	h
د	=	d	ع	=	'	ء	=	'
ذ	=	dz	غ	=	gh	ي	=	y
ر	=	r	ف	=	f			

B. Long Vocal

Vocal (a) long	=	â
Vocal (i) long	=	î
Vocal (u) long	=	û

C. Diphthong Vocal

أُو	=	aw
أَي	=	ay
أُو	=	û
إِي	=	î

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ABSTRAK

Anwar, Khoirul. 2017. *Miskonsepsi Siswa dalam Menyelesaikan Soal Cerita Matematika Materi Kelipatan Persekutuan terkecil dan Faktor Persekutuan Terbesar*. Skripsi, Pendidikan Guru Madrasah Ibtidaiyah, Fakultas Ilmu Tarbiyah dan Keguruan, Universitas Islam Negeri Maulana Malik Ibrahim, Malang. Pembimbing Skripsi: Yeni Tri Asmaningtyas, M.Pd.

Hasil wawancara dengan siswa di empat sekolah dasar yang berbeda menunjukkan bahwa siswa mengakui pernah mengalami kesalahan dalam mengerjakan soal cerita matematika. Masalah yang dialami siswa bervariasi mulai dari pemahaman soal, mengulang dalam membaca soal, hingga memulai menyelesaikan soal cerita. Dalam pembahasan materi yang berkaitan dengan kelipatan persekutuan terkecil (KPK) dan faktor persekutuan terbesar (FPB) banyak dari kalangan siswa yang masih bingung membedakan aplikasi dari keduanya. Maka peneliti memfokuskan penelitian pada macam-macam miskonsepsi siswa dalam mengerjakan soal cerita materi KPK dan FPB. Penelitian ini bertujuan untuk mengidentifikasi letak miskonsepsi yang terjadi pada siswa dalam menyelesaikan soal cerita materi KPK dan FPB, faktor penyebabnya dan solusi yang bisa digunakan untuk menghindari terjadinya miskonsepsi.

Penelitian ini menggunakan pendekatan kualitatif dan jenis penelitian yang dilakukan adalah deskriptif. Penelitian ini mendeskripsikan fenomena yang diperoleh dilapangan untuk menghasilkan ide yang mendalam dan informasi detail tentang miskonsepsi yang dialami siswa dalam menyelesaikan soal cerita materi KPK dan FPB. Pengambilan subjek penelitian ini adalah 22 siswa kelas IV SD Negeri 01 Blayu tahun ajaran 2016/2017. Data yang diperoleh dilapangan berupa data tes, wawancara dan dokumen. Data yang dihasilkan di lapangan di reduksi kemudian disajikan dan di tarik kesimpulan.

Berdasarkan analisis data menunjukkan bahwa tidak ada siswa yang dapat menjawab dengan benar semua soal yang telah diberikan. Hasil analisis data selanjutnya diperoleh kesimpulan bahwa (1) Sebanyak 22,73 % siswa mengalami miskonsepsi pada tahap *understanding the problem*; (2) Sebanyak 27,27 % siswa mengalami miskonsepsi pada tahap *divising a plan*; (3) Sebanyak 31,82 % siswa mengalami miskonsepsi pada tahap *carry out the plan*; dan (4) Sebanyak 18,18 % siswa mengalami miskonsepsi pada tahap *looking back*. Faktor penyebab miskonsepsi yang terjadi pada tahap *understanding the problem* yaitu siswa tidak memperoleh pembelajaran tentang pemahaman masalah pada soal yang berupa teks. Faktor penyebab miskonsepsi pada tahap *divising a plan* adalah sedikitnya alokasi pembelajaran sehingga siswa kurang dalam hal latihan dan memperoleh pengalaman. Faktor penyebab miskonsepsi siswa dalam tahap *carry out the plan* adalah tidak runtutnya contoh pembahasan soal dalam buku sehingga siswa kurang teliti dalam mengerjakan soal. Faktor penyebab miskonsepsi pada tahap

looking back yaitu sedikitnya soal latihan yang berupa soal cerita problem solving dalam buku siswa. Untuk menghindari terjadinya miskonsepsi siswa dalam mengerjakan soal cerita materi KPK dan FPB, guru bisa memberikan strategi pengajaran berupa 1. Strategi matematika making a drawing; 2. Guessing and checking; 3, Making a table; 4. Using a model; and 5. Working backward.

Katakunci: KPK, FPB, Miskonsepsi



ABSTRACT

Anwar, Khoirul. 2017. *Misconceptions of Students Solving Mathematics Word Problem in Material the Least Common Multiple and Greatest Common Factor*. Skripsi, Islamic Primary Teacher Education Program, Tarbiyah and Teacher Training Faculty, Maulana Malik Ibrahim State Islamic University, Malang. Advisor: Yeni Tri Asmaningtyas, M.Pd.

The result of interview with students in four schools showed that students recognize that they had gotten mistakes in finishing mathematics narrative question ever. The problems experienced by students have variations; learning question, repeating in reading question, until finishing narrative question. In discussing the subject correlating with LCM and GCF, many students are still confusing how to differ both applications. Therefore, in this research, the researcher focuses on kind's of student's misconception in finishing narrative story about LCM and GCF. This research intends to identify where misconception of students in finishing narrative story LCM and GCF is, what factors causing and solutions used to avoid misconceptions are.

This research uses qualitative approach. Then, the type of research is descriptive research. This research describes phenomena obtained in the field to produce deep idea and detail information about misconception experienced by students in finishing LCM and GCF. The subjects of this research are 22 students of the sixth grade in SDN 01 Blayu, in academic year 2016/2017. The data obtained in the field are test data, interview data, and documentation. Then. The data produced in the field is reduced, explained, and finally concluded.

Based on analyzing data shows that there is no student answers correctly to all questions that are given. The result of analyzing data concludes that (1) 22,73 % students get misconceptions in the step of understanding the problem ; (2) 27,27 % students get misconceptions in the step of tahap devising a plan; (3) 31,82 % students get misconceptions in the step of carry out the plan; and (4) 18,18 % students misconceptions in the step of looking back. Factor causing misconception in the step of understanding the problem is that students do not get learning more about problem of text question. Factor causing misconception in the step of devising a plan is the less of allocation time of learning so that students decrease in exercising and experiencing to finish question. Factor causing misconception in the step of carry out the plan is the random of example of discussing question in the book so that students decrease in carefulness to finish questions. Factor causing misconception in the step of looking back is the minimum of exercise questions which are narrative question of problem solving in student worksheet book. To avoid student's misconceptions in finishing narrative question of LCM and GCF, teacher can give learning strategy; 1. Mathematics strategy by making a drawing; 2. Guessing and checking; 3. Making a table; 4. Using a model; and 5. Working backward.

الأنوار، خير. ٢٠١٧. المفاهيم الخاطئة للطلاب في حل القصص الرياضية لمادة أصغر مضاعف / لتحالف وأكبر عامل تحالف. بحث الجامعي. تعليم المعلم مدرسة الابتدائية، كلية علوم التربية والتعليم، جامعة مولانا مالك إبراهيم الإسلامية الحكومية مالانق. إشراف: بني تري أسمانكتياس الماجستير

ونتائج المقابلة مع الطلاب في أربع مدارس الابتدائية مختلفة إلى أن الطلاب اعترفوا بأنهم تعرضوا الخطأ في العمل على قصاص الرياضية. اختلف المشاكل يواجهها الطلاب من فهم المشكلة، وتكرار في قراءة السؤال، حتى بدأ لحل القصة. في مناقشة المواد المتعلقة بأصغر التحالفات (KPK) وأكبر عامل تحالف (FPB) كثير من الطلاب مرتبك التمييز بين التطبيقات من كليهما. ولذلك ركز الباحث على التعرف المفاهيم الخاطئة للطلاب في حل القصص الرياضية لمادة أصغر مضاعف التحالف وأكبر عامل تحالف. وتهدف هذه البحث إلى تحديد موقع المفاهيم الخاطئة التي تحدث في الطلاب في حل قصة المواد أصغر التحالفات وأكبر عامل تحالف، والأسباب والحلول التي يمكن استخدامها لتجنب المفاهيم الخاطئة.

استخدم الباحث في هذا البحث المدخل النوعي ونوع البحث الذي يجري هو وصفي. وتصف هذا البحث الظواهر التي تم الحصول عليها في هذا المجال لتحصيل أفكار عميقة ومعلومات مفصلة عن المفاهيم الخاطئة التي يواجهها الطلاب في حل قصة المواد أصغر التحالفات وأكبر عامل تحالف. أخذ موضوع هذا البحث ٢٢ طالبا من الصف الرابع من المدرسة الابتدائية الأول بلايو السنة الأكاديمية ٢٠١٦/٢٠١٧. البيانات التي يتم الحصول عليها في شكل بيانات الاختبار والمقابلة والوثائق. ثم يُعد عرض البيانات التي تم إنشاؤها في الميدان واستخلاص النتائج.

انطلاقا إلى تحليل البيانات تدل أنه لا يكون الطلاب إجابا بشكل صحيح على جميع الأسئلة التي أعطيت. وقد توصلت نتائج تحليل البيانات التالية إلى استنتاج أن (١) بقدر ٢٢.٧٣ % من الطلاب يعانون من المفاهيم الخاطئة في مرحلة فهم المشكلة. (٢) بقدر ٢٧.٢٧ % من الطلاب يعانون من المفاهيم الخاطئة في مرحلة تقسيم خطة. (٣) بقدر ٣١.٨٢ % من الطلاب يعانون من المفاهيم الخاطئة في مرحلة تنفيذ الخطة. و (٤) بقدر ١٨.١٨ % من الطلاب يعانون من المفاهيم الخاطئة في مرحلة النظر إلى الوراء. العوامل التي تسبب المفاهيم الخاطئة التي تحدث في فهم المشكلة هو أن الطلاب لا يحصلون على تعلم حول فهم المشكلة في هذه المسألة في شكل نص. العوامل التي تسبب المفاهيم الخاطئة في تقسيم مرحلة الخطة هو أقل تخصيص للتعلم بحيث يكون الطلاب أقل من حيث التجريبية واكتساب

الخبرة. العوامل التي تسبب المفاهيم الخاطئة للطلاب في مرحلة تنفيذ الخطة هو لا يترتب أمثلة لبحث الشوال في الكتاب حتى يكون الطلاب أقل دقة في عملها. العوامل التي تسبب المفاهيم الخاطئة في مرحلة النظر إلى الوراء هي على الأقل مسألة الممارسة في شكل قصة حل المشكلة في كتاب الطالب. لتجنب حدوث المفاهيم الخاطئة للطلاب في العمل على موضوع أصغر مضاعف التحالف وأكبر عامله، يمكن للمعلم ان تقديم استراتيجيات التعليم كما ١. استراتيجية الرياضيات بجعل الرسم. ٢. التخمين والتحقق؛ ٣، جعل الجدول؛ ٤. استخدام نموذج. و ٥. العمل إلى الوراء.



CHAPTER I

INTRODUCTION

A. Background

In permendikbud No. 104 of 2014 on the assessment of learning outcomes explained that the scope of the assessment of learning outcomes by educators include competence of spiritual attitudes, competence of social attitudes, competence of knowledge, and competence of skills. In other terms sphere of competence to be achieved learners are affective (attitude), cognitive (knowledge) and the psychomotor domain (skills). To find the target achievement of competencies it takes a series of evaluations. One of the ways used to evaluate the cognitive student is to answer the questions. Cognitive ability is the someone ability to think for recognize, analyze something, and finally able to solve their own problems². Therefore, students are expected to be able to answer the questions in the form of a realistic problem to completion with the capacity to think..

In mathematics, the problems that contain realistic problem is about the story containing daily activities. To train the students' cognitive abilities, there must be a problem that is raised and cognitive ability will be a problem solve. With the story questions, students will better understand the benefits and significance of science studies. A science will be difficult for us to apply if the

² Munif Chatib dan Alamsyah Said, *Sekolah Anak-anak Juara, Berbasis Kecerdasan Jamak dan Pendidikan Berkeadilan* (Bandung: Kaifa, 2014), page 09.

science is not meaningful to us. Meaningfulness will affect the learning process of the student. The learning process will occur if the knowledge they have acquired meaningful to their daily life. This will happen if the learning process involves things that are realistic³.

Math word problems are the problems associated with problems in daily life that can be searched settlement and expressed with a math problem⁴. If students are accustomed to answering questions related to daily life, then the students will know the benefits of what he learned. Cognitive ability of students to analyze issues will also be honed.

In fact, there are many teachers in schools that provide the test in the form of low-level cognitive questions. Usually the questions are given in the form of multiple choice questions that there is no real problem in it⁵. In mathematics, a student is not enough to just have the ability to answer a math problem. Demands that focuses on students only in answer to a math problem will cause students to think procedurally by simply using a formula without understanding the meaning of the formula⁶. This has an impact on the students who will memorize formulas without knowing the origin of the formula. The worst impact is that students will be confused when faced with a variety of models different matter.

³ Aryadi Wijaya, *Pendidikan Matematika Realistik, Suatu Alternatif Pendekatan Pembelajaran Matematika* (Yogyakarta: Graha Ilmu, 2012), page 03

⁴ Endang Setyo Winarni dan Sri Harmini, *Matematika Untuk PGSD* (Bandung: PT Remaja Rosdakarya, 2011), hal. 122

⁵ Munif chatib, *op.cit.*, page 10

⁶ Aryadi Wijaya, *op.cit.*, page 08

Based on the reality found in the field, a lot of the problems can be solved given by just using memorizing the formula. Many questions that are instant. That matters already in the form of a mathematical operation. From the observation of the three exercises Try Out 6th grade in mathematics was found that only 15 word problem of the 40 questions in first try out. Then the second try out found only 14 word problem of the 40 questions and the third try out question found only 13 word problems of the 40 questions that tested. Besides 3-4 word problems that there is a direct story about specific data suggests that there is no realistic problem that requires students to think about problem solving⁷. In addition, based on the results of interviews to five different elementary students in Malang found that students tend to be lazy when work on the problems in the form of word problems. They are more interested in working on a matter which is directly in the form of a mathematical language because it was considered more practical.

In completing the word problem about the first students should be able to understand the content of the story, after it drew the conclusion that the object must be completed and turned it into mathematical symbols, until the final stage, namely the completion⁸. Based on interviews of researchers, students admitted to having an error in taking the test in the form of word problems. They claim they are often confused when working on word problems. Most students are still confused about the problems that exist in the story. They claim must read the

⁷ TIM Prediksi Eduka, *TOP Sukses USM SD/MI 2017*, (Solo: Genta Smart Publisher, 2016), page

⁸ Bunga Suci Bintari Rindyana, “*Analisis Kesalahan Siswa Dalam Menyelesaikan Soal Cerita Matematika Materi Sistem Persamaan linier Dua Variabel Berdasarkan Analisis Newman, Studi Kasus MAN Malang 2 Batu*”, Skripsi, Fakultas MIPA Universitas Negeri Malang, 2013, page 1

questions more than once to understand what is being asked the questions. Also sometimes they are also confused with the first step in solving the problems that exist. The result on the interview also resulted that the student confused distinguish in applying material the Least Common Multiple (LCM) and the Greatest Common Factor (GCF).

Seeing the problems, there is a possibility of misconceptions experienced by students. Whether it is a mistake in understanding the concept or errors in the completion stage word problems. To determine the source of errors that often do students. The author conducted research on misconceptions experienced by students in solving the material story the least common multiple and greatest common factor.

B. Research Focus

Based on the background in above, the researchers will focus on:

1. What kinds of misconceptions that occur in students in solving the material story the least common multiple and greatest common factor?
2. What factors lead to misconceptions of students in solving the material story the least common multiple and greatest common factor?
3. How the teacher dealing misconceptions experienced by students in solving the material story the least common multiple and greatest common factor?

C. Research Purposes

1. Identify misconceptions that occur in students in solving the material story the least common multiple and greatest common factors.
2. Finding the factors that led to misconceptions of students in solving the material story the least common multiple and greatest common factors.
3. Find out the teacher's way to dealing misconceptions experienced by students in solving the material story the least common multiple and greatest common factors.

D. Scope of Problem

1. In this research, the question used to identify misconception student in finishing word problem is question C2 type or comprehension type, and C3 type or application type. Researcher do not use the C1 type or recall type because the question of C1 type formless word problem.
2. Analysis of misconception used in this study is based on four stage of completion word problem by Polya.
3. This research is done at fourth grade in elementary school level especially in SD Negeri 01 Blayu, Kec. Wajak, Kab. Malang.

E. Benefits Of Research

The results of this study are expected to be useful for:

1. The theoretical benefits

The results of this study are expected to add a reference and study materials in the treasures of knowledge, especially in the field of education and mathematics.

2. Practical benefits

a) For an institution SD Negeri 01 Blayu

Make a donation to the school in an effort to know misconceptions in understanding word problems of mathematics materials the least common multiple and greatest common factors.

b) Teacher SD Negeri 01 Blayu

Provide information to teachers about misconceptions experienced by students in solving word problem in material the least common multiple and greatest common factors.

c) Students SD Negeri 01 Blayu

It can contribute in the form of suggestions for correcting word problem's mistakes in the materials the least common multiple and greatest common factors.

d) Researchers

Can find out misconceptions that occur in students in solving word problem in material the least common multiple and greatest common factor.

F. Originality Of Research

Based on the results of previous research on misconceptions of students in solving word problems. Researchers mapped the originality of this study as follows:

No	Investigators, title, form (paper / thesis / journal / etc) publisher and year of publication	equation	difference	originality of research
1	Riyan Hidayat and Zanaton Binti H Iksan, <i>Miskonsepsi Pada Topik Program Linear Siswa Sekolah Menengah</i> , Jurnal, Fakultas Pendidikan Universiti Kebangsaan Malaysia	Researching math misconceptions experienced by students	The material under study is a system of linear equations as well as the object of study is the high school students as well as the use of realistic mathematics approach to determine students' misconceptions.	The material under study is the least common multiple and greatest common factors in primary school students as well as using a qualitative descriptive method to identify misconceptions.

2	Evilia suaebah dan masduki, <i>Miskonsepsi siswa dalam menyelesaikan soal cerita pada materi lingkaran, skripsi, pendidikan matematika FKIP UMS</i>	Discusses misconceptions students in solving a word problem by using descriptive qualitative	The subject matter is investigated are circular as well as research conducted in madrassas tsanawiyah or in middle school.	The material studied is the least common multiple and greatest common factors as well as research conducted in primary schools.
3	Parmjit Singh, Arba Abdul Rahman dan Teoh Sian Hoon, The Newman procedure for analyzing primary four pupils errors on written mathematical tasks: a malaysian perspective, Journal, Procedia Social and Behavioral Science 8 (2010)	Examining the mistakes made by students in solving mathematical word problems.	Examining the mistakes made by students in solving mathematical word problem using English as the language of introduction. The analysis technique used is the fault analysis procedure Newman.	Examining students' mistakes in solving math word problem in LCM and GFC materials that use Indonesian which is the native language, everyday language in schools. The analysis technique used is based on the theory troubleshooting procedures Polya.

Table 1.1. Originality of Research

In the table above it is explained that there are three previous studies used in mapping the originality of research. The first study entitled “*Miskonsepsi Pada Topik Program Linear Siswa Sekolah Menengah*” written by Riyan Hidayat and Zanaton Binti H Iksan in journal faculty of

education University Kebangsaan Malaysia. The equation of this research is to examine the misconceptions experienced by students. While the difference in this study lies in the material studied namely the linear equation system and the object of research are secondary school students as well as the use of realistic mathematical approaches to find out the misconceptions of students. The thing that makes this research different from the previous research lies in the material under study, namely the smallest multiple of fellowship and the biggest alliance factor for elementary school students and using descriptive qualitative method to identify misconceptions based on the completion stage of the Polya question.

The second study entitled "*Miskonsepsi siswa dalam menyelesaikan soal cerita pada materi lingkaran*". This research was written by Evilia suaebah and masduki. This research is in the form of a thesis from the mathematics education department FKIP UMS. In this study, the equation points in the discussion of students' misconceptions in solving story problems using qualitative descriptive. What distinguishes this research is the subject matter studied is the circle and research conducted in the madrasah tsanawiyah or at the junior high school level. Then the originality of this research lies in the material under study, namely the smallest multiplication and the largest alliance factor and research conducted at the elementary school level.

The results of the third previous research entitled “*The Newman procedure for analyzing primary four pupils errors on written mathematical tasks: a malaysian perspective*”. This study was written by Parmjit Singh, Arba Abdul Rahman and Teoh Sian Hoon in the 8th edition of the 2010 Procerno Social and Behavioral Science Journal. The equation with this research lies in the focus of the research, namely the mistakes made by students in solving mathematical story problems. What distinguishes this research lies in the object of research in the form of errors made by students in solving math story problems that use English as the language of instruction and the analysis technique used is the Newman error analysis procedure. Then the originality of this research lies in the object of research in the form of students' errors in solving mathematical story problems in KPK and FPB materials that use Indonesian language which is the native language, the language of everyday life in school. the analysis technique used is the problem solving procedure based on Polya's theory.

G. The Definition Of The Term

1. Misconception

The misconception is the notion or a wrong assumption to a concept or understanding. The misconception is also a misconception that deviates from the actual concept that can not be accepted by the general truth

2. Word Problem

Word problems, a matter that can be presented in oral and written form which illustrates activity in daily life.

3. Least Common Multiple

The least common multiple or commonly abbreviated with the LCM is the smallest number of multiples. Multiples are multiples of two or more numbers that have the same value.

4. Greatest Common Factor

The greatest common divisor or commonly abbreviated with GCF is the largest factors among the factors existing fellowship of numbers known

H. Systematic Discussion

Systematic discussion in this study are as follows:

CHAPTER I INTRODUCTION

- A. Presenting Background
- B. The Focus Of Research
- C. The Purpose Of The Study
- D. Scope of Problem

E. Benefits Research

F. Originality Research

G. Definition Of Terms

H. Systematic Discussion.

CHAPTER II LITERATURE

A. Word Problem

B. Material Least Common Multiple (LCM)

C. The Material Greatest Common Factor (GCF)

D. Misconceptions Word Problem

E. Resolution Math Word Problems Using Polya's Steps To Resolve
The Problem

CHAPTER III RESEARCH METHOD

A. The Approach And The Type Of Research

B. The Presence Of Investigators

C. Location Of The Study

D. Data And Data Sources

E. Data Collection Techniques

F. Data Analysis

G. Research Procedures

CHAPTER VI OF EXPOSURE DATA AND RESULTS

A. Exposure Data

B. The Results

CHAPTER V DISCUSSION

A. Identification of the mistakes made by students in solving word problem in material least common multiple and greatest multiplier factor

B. Factors that cause students to do their misconceptions about word problem material the least common multiple and greatest multiplier factor

C. Teacher's way of dealing student misconception in solving word problem material the least common multiple and greatest multiplier factor

CHAPTER VI CLOSING

A. Conclusion

B. Suggestions

CHAPTER II

LITERATURE REVIEW

A. Word Problem

Measures the math skills students can do with his ability to complete a math problem. There are different kinds of math problems exist in the form of word problems and there is also a direct form of mathematical operations. Math word problems are problems that are delivered using verbal language that contains problem solving in everyday life⁹. So about the story can be summed up as a math problem is presented in narrative form containing an everyday problem and then demanding a settlement mathematically.

To finishing question Problem-solving requires a deep understanding of students because students have to go through several steps to resolve. The steps in solving mathematical word problems, namely: (1) the ability to read questions; (2) ability to determine what is known and what is being asked in the question; (3) the ability to make a mathematical model; (4) ability to perform calculations and; (5) the ability to write a final answer appropriately¹⁰.

B. Least Common Multiple (LCM)

Material least common multiple or called by LCM is part of the materials given math in elementary school. The least common multiple or LCM is part of

⁹ Abdul Haris Rosyidi, “*Analisis Kesalahan Siswa Kelas II MTs Alkhoiriyah dalam Menyelesaikan Soal Cerita yang Terkait dengan Sistem Persamaan Linear Dua Peubah*” Tesis Pendidikan Matematika, Pasca Sarjana Universitas Negeri Surabaya, 2011, page 2

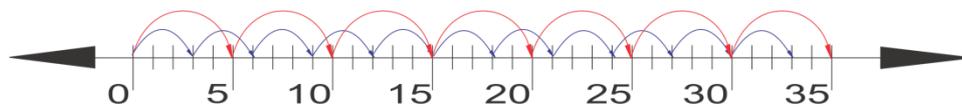
¹⁰ *Ibid.*, page 2

number theory. Number theory is the basis for understanding the historical development of human figures. Number theory provides many opportunities for us to explore an interesting, pleasant and helpful. The exploration can be in explore solving a problem, in describing the interesting side of mathematics and understand the development of historical figures. Understanding the theory of numbers is challenging. The problems in number theory very likely understood by the students. In understanding of number theory there are many ways to do such as by building a rectangle using tiles to explain about the divisibility and prime numbers, composite, odd and others¹¹.

One discussion of the theory of numbers is the least common multiple or LCM. The common multiple self-contained three words, each of which needs to be understood. A combination of three words themselves also bring a new meaning of the sentence that has been adapted to the discussion in the mathematical sciences. Multiples of the numbers multiplied from other numbers. While the alliance itself according to KBBI interpreted as divisibility of a number¹². A figure referred to as multiples if there are two or more points where the figure is a multiple of those numbers. As the numbers 15 and 30 are multiples of 3 and 5 for each of the numbers 15 and 30 are multiples of the numbers 3 and 5. The number 15 is a multiple of 3 is also a multiple of 5 and applies also to number 30. In order to more clearly see the picture below,

¹¹ Albert B. Bennet, Jr dan L. Ted Nelson, *Mathematics For Elementary Teachers: A Conceptual Approach, Sixth Edition*, (New York: McGraw-Hill, 2004), page 208

¹² <http://kbbi.web.id/bagi-2>, diakses terakhir tanggal 02 September 2016, pukul 0:26



Picture 2.1. Multiples of 3 and 5

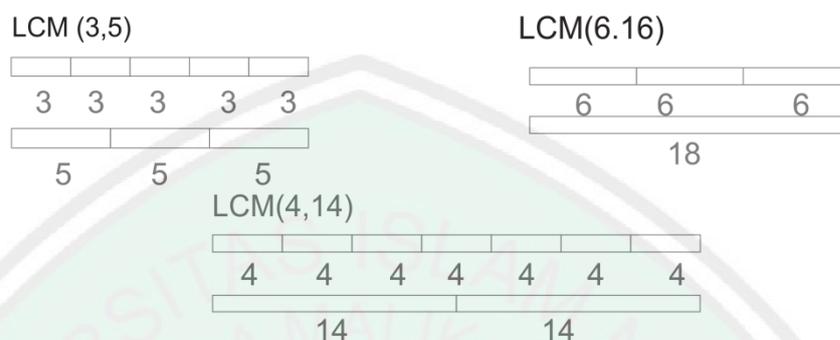
The image above shows the multiples of two numbers 3 and 5. Starting from the numbers 0, 3 interval length and interval length 5 will meet at number 15 in the number line. Numbers that are multiples of two numbers such as the example above is an example of multiples.

The smallest is a word that shows the smallest value of a set of numbers. In this discussion, the word smallest refers to the smallest numbers that are a fellowship of specific figures. Now we look at the number line above. If you continue, interval number 3 and number 5 interval will meet again at the numbers 30, 45, 60, 75 and so on until infinity. Each of the factors of two or more numbers have factors of which the amount is not infinite. Then the least common factor in the discussion of selecting the smallest number of factors of which exist. So it can be concluded that the least common factor of 3 and 5 is 15 or can be written by $LCM(3,5) = 15^{13}$.

There are different alternatives to find the least common multiple of two or more numbers. Of them were using pieces of stems and then compare them. By combining pieces of rods which are then arranged in a way that would match the array of stems others. When a combination of pieces that stems the same length

¹³ Albert B. Bennet, Jr dan L. Ted Nelson, *op.cit.*, page 238

then the value of that which is the smallest number of multiples. In order to more



clearly see the picture below.

Picture 2.2. Least Common Multiples (LCM) with pairs

Another way to do is to sign up multiples of each number. Then look for the smallest common multiple. Shortage of ways that the above is just easier to do when the numbers are of little value. If the numbers are worth a lot will be very difficult to implement ways above.

Alternative easiest to find the least common multiple if large numbers it is by way of prime factorization. Before learning the prime factorization we must first understand the primes. A prime number is an integer that can only be divided by the number one and the number itself. An example is the numbers 2, 3, 5, 7. Those numbers can only be divided into the number 1 and the number itself so that the numbers are only two factors like the number 5 factored into 1 x 5, which

means only has two factors: 1 and 5¹⁴. This also applies to factors other than primes.

Prime factorization Is a factor of integers factored until primes. This means factorization of integers that there continues to be factored until leaving primes only¹⁵. For example prime factorization of 36. figure 36 can be factored into 2×18 and a factor of 18 is 2×9 . then a factor of 9 is 3×3 . As an example figure 36 above these integers factored continuously to find the numbers as the prime factorization of it. So the prime factorization of 36 is $2 \times 2 \times 3 \times 3$.

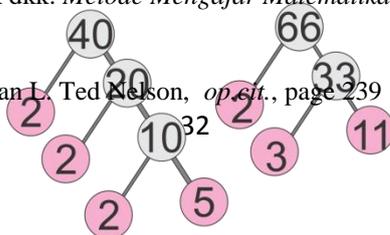
To resolve the questions LCM using prime factorization, we must seek first prime factorization of integers that exist. One of the easiest ways to determine the prime factorization is to use a factor tree. Looking for the prime factors of a number is to acquire two factors first and then the numbers will get two more factors as illustrated in the example, so-called with trees factor. How to use a factor tree is to break it into smaller and smaller until the last factor remains the prime numbers that can not be factored any longer.

LCM of two digits or more can be built using the most prime factor appears in every number¹⁶. Examples completion of LCM using the prime factorization is as follows. LCM of the numbers 40 and 66 can be searched by using the prime factorization. The first step is to use a factor trees of such numbers.

¹⁴ Lisnawaty Simanjutak dkk. *Metode Mengajar Matematika 2*, (Jakarta: PT Rineka Cipta, 1993), hlm. 09

¹⁵ *Ibid.*

¹⁶ Albert B. Bennet, Jr dan L. Ted Nelson, *op.cit.*, page 239



Picture 2.3. Factor trees of 40 and 66

From the factor trees above indicate the prime factors of the number 40 and 66. Factor trees indicates the number 2 appears three times that of the prime factors of 40 and only appears once in factor 66 then the Commission will use the number 2 three times as the most frequent , So is the number 5 as a factor of 40, 3 and 11 as a factor of 66, all of these factors are also used in LCM since its emergence in the prime factors of the number. Then LCM of 40 and 66 is

$$2 \times 2 \times 2 \times 5 \times 3 \times 11 = 2^3 \times 3 \times 5 \times 11 = 1320$$

Another way to solve the LCM problem is to use a multilevel division. An example of a complete the LCM of 40 and 66 is to divided the numbers that search for LCM values with the smallest primes. If one number can not be divided with a predefined prime number, it will be skipped to a number that can divide with the number. Here is an illustration of the multilevel division:

2	40	66
	20	33
2	10	–
	5	–
3	–	11
	0	–
11	0	0
	0	0

Pictures 2.4. Completion LCM with multilevel division

After a doing multilevel division as above will be find a prime numbers which is a division of the numbers 40 and 66 located on the left side i.e., 2, 2, 2, 3, 5, and 11. To find the LCM by using multilevel subdivision above i.e. by multiplying all the prime numbers which is a divisor of the number 40 and 66. So $LCM(40,66) = 2 \times 2 \times 2 \times 3 \times 5 \times 11 = 1320$

C. Greatest Common Factors (GCF)

The following discussion is the Greatest common Factor or GCF. GCF discussion is closely related to the previous discussion of LCM. As discussion of the factors discussed previously, the fellowship here refer to the same number that is a factor of two numbers are different. Every two figures certainly have a number that represents a factor of two. figure 24 and 36 has the number 6 as a factor of two. If a number is a factor of two numbers is called the common Factor¹⁷.

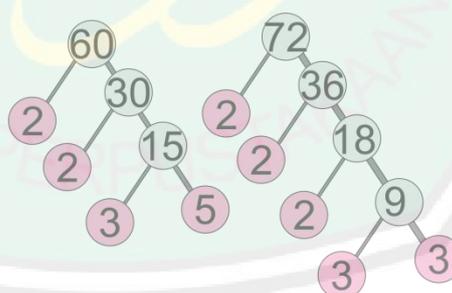
Among the figures to be a factor of two numbers always have the biggest number is called the greatest common divisor. Factor of the number 24 is 1, 2, 3, 4, 6, 8, 12 and 24 while the factors of 36 are 1, 2, 3, 4, 6, 9, 12, 18, and 36. The numbers are a factor of 24 and 36 are 1, 2, 3, 4, 6, and 12. Then Greatest common factor of 24 and 36 is 12. it is usually written by the $GCF(24, 36) = 12$.

¹⁷ *Ibid.*, page 235

The concept of common factor can be illustrated by using pieces of stems the same length just as in the discussion of multiples. Further appointed the longest piece that can represent both numbers.

Other methods of determining GCF of the two numbers is to write all the factors of both numbers and choose the greatest numbers. Another way that is easier to determine the greatest common factor is to use prime factorization. GCF of two or more numbers can be searched by using every prime number that is at least appear that occurs on every figure¹⁸.

Using the factor trees have been described in previous chapters, we can easily determine the GCF of two or more numbers. The following will explain an example of the completion of GCF on two numbers. GCF of the numbers 60 and 72 can be searched using a factor tree to find the prime factorization.



Picture 2.5. Factor trees of 60 and 72

From the factor trees above we can determine the prime factorization of these two numbers, ie $60 = 2 \times 2 \times 3 \times 5$ and $72 = 2 \times 2 \times 2 \times 3 \times 3$. We can see that the two are the prime factors of the number 60 as much as two times and

¹⁸ *Ibid.*, page 236

three times the number 72, while the third became prime factor as much as one in number 60 and twice on the numbers 72 and 5 are factors of the number 60 only. To determine the GCF from both of us choose numbers that are prime factors of both. We see that the two figures appeared twice at 60 and three times in 72. That should have is two numbers that appear twice because if we choose two numbers that appear three times on the figure 72, the factors primes does not happen to 60. Completion of GCF figures of 60 and 72 regular written in the $GCF(60,72) = 2 \times 2 \times 3 = 12$ ¹⁹.

Another way to solve the GCF problem is to use a multilevel division. An example of a GCF settlement of 60 and 72 is by distributing the numbers to be searched for GCF values with the smallest primes. If one number can not be shared with a predefined prime number, it will be skipped to a number that can divide the number. Here is an illustration of the multilevel division:

2	60	72
	30	36
2	15	18
	-	9
3	5	3
	0	0
5	0	0
	0	0

Pictures 2.6. Completion of GCF with multilevel division

¹⁹ *Ibid.*

After doing the Division to compile the above will be a find prime number which is a divisor of the number 60 and 72. In completing the GCF in this way, the prime number chosen is the prime number that can divide both numbers are searchable the GCF. Prime numbers are selected only the prime numbers can divide both numbers 60 and 72 because prime numbers that can divide both numbers is a factor of both numbers. The prime numbers can only divide the one not chosen because it was not a factor of the other number. So a prime number chosen is 2 twice and 3 one time. Look at the ilustration bellow:

2	60	72
2	30	36
2	15	18
3	5	6
3	5	3
5	0	0
	0	0

Pictures 2.7. How to choose a factor prime that use in GCF

$$\text{So, GCF}(60, 72) = 2 \times 2 \times 3 = 12$$

D. Misconception Of Word Problem

Misconceptions can be interpreted as preconceived notions, beliefs unscientific, naive theory, konsep mixed, or misconceptions. Basically, in science there is a problem that people know and trust, but not in accordance with the

scientific truth. Most of these people are not aware of the misconceptions that they trust²⁰. In this discussion, the misconception is interpreted as an error of understanding the concept experienced by students in solving a mathematical problem.

The term used in the study misconception that refers to a variety of issues that develop in three stages. The first phase of the early 1970's to early 1980's that is the foundation in examining the misunderstandings that arise in the settlement of problem solving students when making decisions rationally. The second phase of misconceptions research emphasized to errors wider than a misunderstanding. This phase includes the escape, errors, and improvements in the theory of procedural errors. While systematic errors are more focused on misconceptions²¹. Based on research on the development of these misconceptions, the discussion in this study focused on students' procedural error. In this study will review the student procedural mistakes in solving math story either in the form of deliverance in doing, errors or repair faulty theory on the chapter least common multiple and greatest common factors.

Based explanation of the misconceptions about the word problem on the above, misconception of word problem is a procedural error experienced by students in solving word problems. This error can occur in student omissions, and errors occur in the stage of completion about the story.

²⁰ Almahdi ali alwan, *Misconception of Heat and Temperature Among Physics Student*, Jurnal PROCEDIA Social and Behavioral Science 12 (2011) 600-614 page 601

²¹ Cristhopher R. Rakes, *Misconception in Rational Numbers, Probability, Algebra, and Geometry*, Jurnal ProQuest LLC UMI 3415205 Maret 2010 page. 20

E. Completion Of Math Word Problems Using Polya's Steps To Resolve The Problem

There are also steps that can be taken to resolve the issues contained in word problems. These steps will then be used to analyze misconceptions experienced by students in solving word problems. As proposed by Polya²², steps that need to be considered for solving the problem in terms of the story as follows

1. An understanding of the problem, meaning that students are required to understand the problem first. Students understand what is meant by word problem.
2. Planning troubleshooting, in this phase the students see how the word problems associated with the existing data in order to obtain an idea to make a plan for solving the problem. At this stage the students look for patterns from existing data. Then the students estimate the strategies to be used to solve the existing questions. The strategy chosen can be the determination of formulas to be used.
3. Carry out planning problem solving. In this step students take action on problems in the matter. In the completion the student uses his knowledge to get answers from the questions.
4. Looking back on the completeness of solving the problem, ie before answering the problem, need to review whether the setatement of the

²² Endang Setyo Winarni dan Sri Harmini, *op.cit.*, page 124-125

problem it is appropriate to conduct the following activities: to check the results, interpret the answers, reviewing whether there are alternative recourse to the completion of the same so it needs assessment in several ways completion.

Here is an example of a complete word problem in material LCM and GCF that uses the polya problem solving stage.

Example 01 Hospital Dr. Syaiful Anwar has 4 light bulbs to indicate the number of patients in the hospital. The lamp bulb each represents the incoming patient, the patient goes home, the baby is born and the patient dies. Based on statistical data, the light bulb blinks every 10 minutes, 16 minutes, 81 minutes and 900 minutes for each patient in, the patient goes home, the baby is born and the patient dies.. If these four lights are flash now together, what is the total number of patients when all four lights flash together again?

Understanding the Problem: Based on statistics, the patient in every 10 minutes, the patient goes home every 16 minutes, the baby is born every 81 minutes and the patient dies every 900 minutes. There are incoming patients and the patient is born means the number increases while the patient goes home and dies means the number of patients is reduced.

Devising a Plan: To plan the complete the problem, we can see the simple logic of the problem above. We sketch the lines to describe the increments and the reduction of hospital patients on the number line. From the sketch of the number line will know the number of patients when the light flashes simultaneously. To know the amount of time spent when the four lights are on simultaneously then we need LCM to solve the problem.

Carrying Out the Plan: LCM (10, 16, 81, 900) can be searched using prime factors.

$$10 = 2 \times 5; 16 = 2 \times 2 \times 2 \times 2; 81 = 3 \times 3 \times 3 \times 3; 900 = 2 \times 2 \times 3 \times 3 \times 5 \times 5$$

$$\text{LCM}(10, 16, 81, 900) = 2 \times 2 \times 2 \times 2 \times 3 \times 3 \times 3 \times 3 \times 5 \times 5 = 32400$$

So every 32400 minutes, all four lights will flashes at the same time.

Looking Back: Number of patients in dr. Saiful Anwar every 32400 minutes is as follows: the number of patients entering $\frac{32.400}{10} = 3.240$; number of patients going home $\frac{32.400}{16} = 2.025$; number of baby born $\frac{32.400}{81} = 400$; and number of patient dies $\frac{32.400}{900} = 36$

Total number of patients in dr. Saiful Anwar at the moment the four lights flashing simultaneously is $3,240 - 2,025 + 400 - 36 = 1579$ patients.

Example 02. To prepare for andi's birthday, the mother prepares 60 donut cakes. 48 cake risoles and 36 pia cakes. Once put in a box with the number of cakes each just as much, it turns out the mother would add 2 onde-onde into each box. How many onde-onde does mother need?

Understanding the Problem: There are 60 donuts, 48 risoles, and 36 pia cakes. Will be divided into boxes with each type as much. From each box, each box will be added 2 onde-onde cakes.

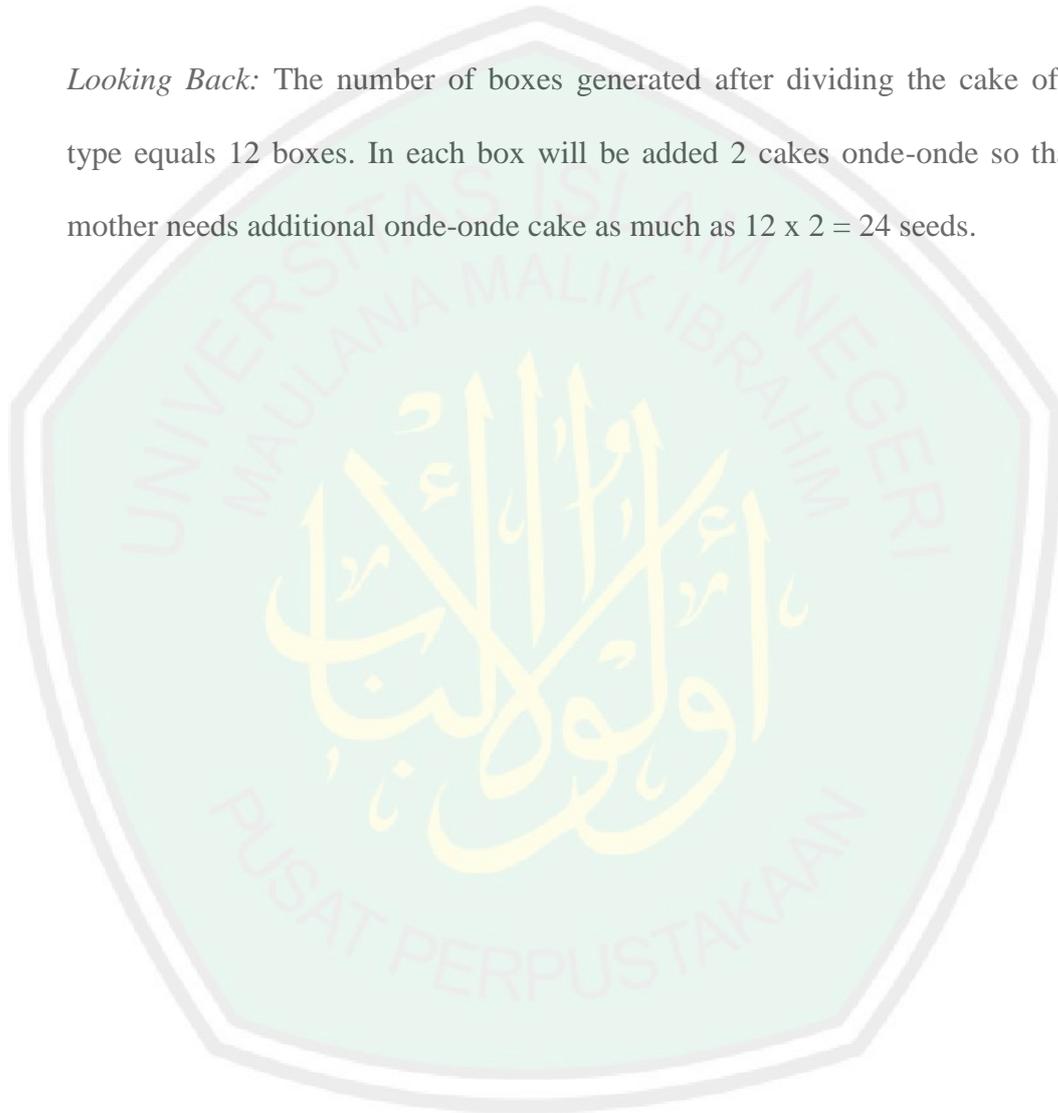
Devising a Plan: Based on understanding question above of each cake will be divided equally into several boxes. To look for it, it can be done by searching for factors from the many cakes mentioned above. In order to know the number of boxes produced then required GCF.

Carrying Out the Plan: GCF can be searched using prime factors.

$$60 = 2 \times 2 \times 3 \times 5; 48 = 2 \times 2 \times 2 \times 2 \times 3; \text{ and } 36 = 2 \times 2 \times 3 \times 3$$

GCFs of 60, 48, and 36 must contain 2 twice and 3 one times which is the factor of the three numbers. $\text{GCF}(60, 48, 36) = 2 \times 2 \times 3 = 12$

Looking Back: The number of boxes generated after dividing the cake of each type equals 12 boxes. In each box will be added 2 cakes onde-onde so that the mother needs additional onde-onde cake as much as $12 \times 2 = 24$ seeds.



CHAPTER III

RESEARCH METHODS

A. Approach and The Type of Research

This study used a qualitative approach and the type of research is descriptive. It means this study is to describe the meaning of the data or phenomena that can be captured by the perpetrators of research with its proof²³. A qualitative approach is used because it is a natural setting in which researchers collect field data in locations where participants experiencing issues or problems to be studied²⁴. It is intended that the collected data to researchers is a real picture of the situation of students as research participants.

This research is a descriptive study. This type of research is used to provide a detailed picture of the specific situation, the social setting or relationship. A qualitative description refers to the identification of properties that distinguish or characteristic of a group of people, objects or events. In a qualitative description of research process involves conceptualizing and resulting in the formation of classification schemes. In addition to knowing what happened this study will also reveal how it happened²⁵. By using a qualitative description of research researchers can identify misconceptions experienced by students in doing mathematics story problems and can be a determining factor of the cause of misconceptions that exist. The data found in the field will be processed with the

²³ Mohammad Ali dan Mmuhammad Asrori, *Metodologi dan Aplikasi Riset pendidikan* (Jakarta: PT Bumi Aksara, 2014), page 123

²⁴ Jhon W Creswell, *Research Design Pendekatan Kualitatif, Kuantitatif, dan Mixed Edisi Ketiga* (Yogyakarta: Pustaka Pelajar, 2013), page 261

²⁵ Ulber Silalahi, *Metode Penelitian Sosial*, (Bandung: Refika Aditama, 2009) page 28

words and the writing of the descriptive text. Researchers used type of description as to get an idea of the depth and to gather detailed information about the mistakes of the student in solving word problems. Besides the implementation of a more descriptive study structured, systematic and controlled because researchers start with a clear subject that misconceptions experienced by students in solving mathematical word problems and conduct research on a population or a sample from the subject to describe accurately²⁶.

B. The Presence Of Researchers

In this study, researchers act as well as a data collection instrument. Human instrument serves to establish the focus of research, selecting the information as a data source, collecting data, assessing the quality of the data, interpret the data and draw conclusions on all²⁷.

C. Research Sites

The researcher chose SD Negeri 01 Blayu because the researcher assessed that there was a problem in the learning process that was done in SD Negeri 01 Blayu. The location of schools not far from the subdistrict center should be able to provide good quality education because access to education facilities is easy. However, in the last three years the rank of UN students state elementary school

²⁶ *Ibid.*

²⁷ Sugiyono, *Metode Penelitian Kuantitatif Kualitatif dan R&D* (Bandung: Alfabeta, 2011), page 222

01 Blayu district level decreased²⁸. So researchers assume that the students of SD Negeri 01 Blayu have misconception in understanding the lesson. Because of the limitations of the researcher, the researcher limits the research on the misconception in mathematics material lesson of Least Common Multiple (LCM) and Greatest Common Factor (GCF). SD Negeri 01 Blayu is located at Sidodadi street gang 02 number 05, zip code 65173 Blayu village for about one kilometer from Wajak District Office, Malang Regency.

D. Data And Data Sources

In this study, the data obtained is test data, documentation and interviews. The data used is the 4th graders of SD Negeri 01 Blayu who have received the material for the least common multiple and greatest common factors in first semester. Researchers took 4th graders in second semester because researchers assume that they have passed the material the least common multiple and greatest common factor when first semester. Data source interviews were taken from all the students who made a mistake in completing a written test as a resource. This is done to review the mistakes made by the students. The sample used is all students of class 4. Sample data interview is all students who make mistakes in writing tests or students who score below 100 on a written test. This consideration is based on students who experience an error in the story questions the material the least common multiple and greatest common factors. Students are considered to

²⁸ Wawancara dengan Lailatul Munfaridah, Guru kelas VI SD Negeri 01 Blayu, tanggal 15 Juli 2017

have the misconception that considered most knowledgeable about what to expect.

E. Data Collection Technique

To find the data of the variables studied data collection techniques as follows:

1. Test data collecting

The collection of data through a test that is by giving a written test about the word problem material in the form of the least common multiple and greatest common factor to the students. Questions tests used as many as four items of description form or essay form. Advantages of the test essay is to train students to think critically and creatively poured into sentences. While the weakness that is difficult to check the answers and difficult in scoring for heterogeneous student answers²⁹. Therefore it takes a guideline scoring and format lattice question. Written test is intended to determine the location of the misconceptions experienced by students in solving word problems. Test questions in this study is a mathematical word problems related to everyday life that contains materials, the least common multiple and greatest common factor and this will be a matter of such tests include the possibility of students to make mistakes by Polya problem solving phase. Selection of this problem is to locate the students'

²⁹ Eddy Soewardi Kartawidjaja, *Pengukuran Dan Hasil Evaluasi Belajar*, (Bandung: CV sinar baru 1987) page 49

mistakes in solving math word problems. The test questions are based on the lattice questions that have been made by researchers and approved by the supervisor and has been validated by several validators. Validator in this study is an expert lecturer and 4th grade math teacher at the school. Before making a question, the researcher prepare indicator about the question. The test question indicator is based on solving the problem solving question according to Polya's stage. An outline of the grille questions used as follows

lattice of test

Numbers of question	Indicators	Form of question	Cognitive purposes		
			C1	C2	C3
1, 2	Change the problem in terms of stories relating to the least common multiple and greatest common factor	Essay		v	
1, 2	Can determine the problem-solving stories relating to the least common multiple and greatest common factor	Essay		v	
3, 4	A complete model of mathematical word problems relating to the least common multiple and greatest common factor	Essay			v
3, 4	Connecting answers to questions about the story the least common multiple and greatest common factor	Essay			v

Table 3.1. Indicators of writing test

2. Interviews data collecting

Collecting data through interviews, this is done to confirm and strengthen the location information misconceptions students in solving

word problems. Interviewing provide the researcher a means to gain a deeper understanding of how the participant interpret a situaation or phenomenon than gained through observation alone³⁰. In an interview researchers are trying to dig deeper information about the misconceptions experienced by students as researchers can control the respondents' answers more precise by observing the reaction or behavior that arises when the question was asked by investigators.

Structured interview will be used in this research because the researcher know about information to be obtained. Therefore the researcher before interviewing needs to prepare research instruments such as interview guidelines. Interview guidelines used were made by researchers approved by the supervisor and validated by expert lecturers. The interview process is used to reinforce the results of the test data collection and to obtain data on the causes of students experiencing misconceptions. Guidelines for this interview contains questions that the researchers used to reinforce the results of the test data collection and contains factors that cause students to make mistakes based on the student test results. interview guidelines to be used as follows.

- a. Asking to the student about the mistakes that they made on the tes.
- b. Students are asked to read again the test questions, especially in question that goes wrong.

³⁰ Sugiyono, *op.cit.*, page. 232

- c. Asking what the known data in question.
 - d. Ask what was requested in the question.
 - e. Asked the first step that must be done to resolve the question.
 - f. Students are asked to work on the problems based on what was planned.
 - g. Asking whether the answer back in accordance with what is asked.
 - h. Ask if there are other alternatives to solve the test.
3. Documentation data collecting

Documentation, is a method of searching for data on the problem in the form of variables which can be notes, transcripts, books, newspapers, magazines, inscriptions, minutes of meetings, lenger, agenda and so forth³¹. In this study, researchers can take the form of documentation of lesson plans, textbooks, journals education and etc.

F. Data Analysis

Analysis of the data used by researchers is as follows,

- a. Analysis of the test data

Test data of all students who take the written test are presented in tabular form. To analyze the test data used answer sheets of students in a

³¹ Suharsimi arikunto, *Prosedur Penelitian Suatu pendekatan Praktik*. (Jakarta: PT Rineka Cipta, 2010) page 274

given story questions. This is done to locate the misconceptions students when completing word problems. The results of the analysis of students' answers are used as a reference for researchers when conducting interviews. Answer students who analyzed the students' answers and incorrect answer.

b. Analysis of interview data

Interview data was obtained from the 5 students who had been predetermined. Then the data is analyzed to find the outline of the misconceptions of students in solving the material story the least common multiple and greatest common factors. Furthermore, the data are analyzed in the following way.

- 1) Reduction of data, is defined as the process of selecting, sharpen, focus and simplify the data obtained, discard the unnecessary data from the interview. From these data and simplified so that it can be determined misconceptions factors experienced by students.
- 2) Presentation of data, this is done in the form of organizing and compiling the data into meaningful information so it is easy to draw conclusions.
- 3) Withdrawal conclusion, this is done when all the data has been collected. This conclusion regarding the identification of misconceptions students in solving the material story the least common

multiple and greatest common factors and the factors that led to misconceptions of students in each category misconceptions.

G. Research Procedure

In this study, researchers through several stages of research. The first stage is the premises do some preliminary research. In a preliminary investigation, the researchers conducted several activities to earn significant of issues in research. Among them is by reviewing the questions try out SD to determine the level of use of word problems in math tests in elementary school. The researcher also interviews several students for their opinions on the question of the story as well as their knowledge of the use of materials, the least common multiple and greatest common factor in everyday life.

The second phase is done by preparing a research proposal and to develop a research design. In this phase, researchers determine how and methods appropriate to examine the issues raised. Researchers are also looking for the basic theory used in the study.

The third phase is the actual research. The actual research done in the field by applying research methods that have been determined. Researchers dig up the data required in the field based techniques that have been determined.

The last stage is the stage of preparation of the report. At this stage the researchers process data is found and presented in a written report in accordance with the procedures of writing that has been determined.

CHAPTER IV

EXPOSURE DATA AND RESULT

A. EXPOSURE DATA

In this research, there are various data. The result data of tryout of students is found in the pre research step. This data consists of narrative questions about 13 until 15 in each tryout question package of mathematics of the sixth grade. Then, the interview data shows that four students from various schools are lazy to do narrative questions. They prefers to do practical questions like mathematics questions.

Besides the above data, the researcher also finds data when the research is conducting. There are three categories of data; writing test data, interview data, and documentation data.

1. Writing test data is the value obtained by students when they do questions in the test. The table below shows the value of students based on score in each question.

No	Name	Total Score				Total	Result
		Q 1	Q 2	Q 3	Q 4		
1	Rafi Aslamuddin Zakaria	2	2	2	2	8	40
2	Firli Afrian Saputra	1	3	2	2	8	40
3	Cherys Viola A.	3	3	2	2	10	50
4	Rangga Rizki Fitriani	3	1	1	2	7	35

5	Anita Febri Yani	3	2	2	2	9	45
6	Qutwah Gaida Zahira	5	2	2	3	12	60
7	Moch. Syamil Ihkamuddin	5	2	2	3	12	60
8	Martha Dewi Olivia	2	5	2	5	14	70
9	Syahrul Alfian Azizi	2	2	2	2	8	40
10	Andro Vani Maulana	5	5	4	3	17	85
11	Muhammad Riski Afandi	2	2	2	2	8	40
12	Adi Setia Pradana	2	2	0	2	6	30
13	Norma Amalia	3	4	2	3	12	60
14	Adellia Putri Wardani	5	5	4	4	18	90
15	Nurul Fadhila	5	4	3	4	16	80
16	Lola Dewi Ramdhania	3	2	2	2	9	45
17	Revi Lestari	5	5	4	4	18	90
18	Dwi Saputra	2	0	0	0	2	10
19	Dafani Debi Yohana	2	0	1	1	4	20
20	Ahmad Fadhor	3	5	2	4	14	70
21	Muhamad Rafli	2	4	2	2	10	50
22	Yoania Friska	0	0	0	0	0	0

Table. 4.1. Score Table of Writing Test³²

Rafli Aslamuddin in the first questions got 2 because he only wrote the data that he knew and wrote the method of accomplishing question. Then, he also did the same as the first question in the second until the fourth questions so he also got 2. The total score of each question was 8. This score was multiplied with 5. As the result, he got 40 for the test.

³² Tes tulis yang dilakukan pada tanggal 25 Mei 2017

Firli Afrian S, in the first question, she only answer it based on the data that she knew so he got 1. While, in the next question, she was able to did it until accomplishing question so she got 3. In the third and fourth question, she only wrote the data that she knew and the accomplishing method so she got 2 for each question. The total score that she got was 8 and it then was multiplied by 5. Finally, she also only got 40 for this test.

Cherys Viola A, in the first and second questions, she was only able to wrote down the data until the determining of accomplishing question, so that she got 3 for each question. Meanwhile, in the third and fourth questions, she was only able to answer by writing the data and its way for accomplishing the question, so that she got 2 of each question. The total score that she got was 10. Then, it was multiplied by 5, so the final score was 50.

Rangga Rizki F, in the first question he was only able to work it until the determining of accomplishing question so she got 3. Then, in the second and the third question Rangga was only able to answer based on the known data in questions so he got score 1. In the fourth question, Rangga was able to write the data and its accomplishing way so he got 2. The total score he got was 7, then it was multiplied by 5. The final score of the process is 35.

Anita Febri Y was able to answer the first question until the step of determining of accomplishing question, so she got 3. In the next questions, the second, the third, and the fourth question was able to write the data and

the way of accomplishing question but she could not finish of each question so she got 2. The total score she got was 9 and it then was multiplied by 5 so she finally got 45.

Qutwah Gaida Z, in the first question, she got the maximum score because she was able to answer the question correctly. While, in the second and the third question she was only able to write the data and the accomplishing way so she got 2 for each question. In the final question, she only got 3 because she was only able answering question until the determining of accomplishing question. The total score she got was 12 which then was multiplied 5 and she got 60.

Moch. Syamil Ilhamuddin got 5 in the first question because he succeed to answer question correctly. But, in the second and the third question he got 2 for each question because he was only able to write the data and the method without determining the accomplishing question. In the fourth question, he got 3 because he was only able to answer until the step of determining of accomplishing question. The total score he got was 12 then it was multiplied by 5. So that he got 60.

Martha Dewi O got 2 in the first question because she was only able to answer correctly until the step of accomplishing question. The second question, Martha was able to answer question correctly so she got 5. But, in the third question, she got 2 because she was only able to answer correctly in writing the data and its finishing way. In the fourth question,

she got 5 because of her corrected answer. The total score she got was 14. This score then was multiplied by 5. So, the final score was 70.

Syahrul Alfian A got 2 for each question because he only answer correctly in writing data and the way of accomplishing question. The total score he got as 8 and then it was multiplied with 5. The final score was 40.

Andro Vani M, in the first and the second question got 5 because he was able to do and answered with the correct sentence.. In the third question he got 4. It was caused by his answer showing incorrect sentence. For the final question, he only got 3 because he only answer correctly until the step of determining of finishing question. The total score he got was 17 which was than multiplied with 5. Finally, he got 85.

M. Riski Afandi got 2 for each questions he did. He got that score because he only answered correctly in writing data and finishing method. The final score he got was 8 which was then multiplied with 5. The final score he got was 40.

Adi Setya P, in the first until the third question, he got 2 for each question. It was caused by him whom answered correctly in writing data and the finishing method. In the last question he got 0 because he did not write everything. The total score he got 6 which was then multiplied with 5. Then, finally he got 30.

Norma Amalia, in the first question, he only worked the test until the determining of finishing question. So, she got 3. In the next question, because of the sentence she wrote to answer the question was wrong, she

got 4. In the third question she got 2 because he was only answer correctly until the step of finishing method. For the last question, she only got 3 because she only answered correctly until the step of determining of finishing method. The total score she got was 12 which was then multiplied with. So that, she got 60.

Adellia Putri W got 5 for the first and the second question. In these questions she answered it correctly. For other questions, she got 4 for each question because she used the wrong sentence. The total score she got was 18 which was then multiplied with 5. Her final score was 90.

Nurul Fadhila got 5 in the first question because she answered correctly. In the next question, she only got 4 because she used the wrong sentence. Then, in the third question, she got 3 because she only answered correctly until the step of determining of finishing question. In the last question, she got 4 because she answered with the wrong sentence. The final score she got was 16 which was then multiplied with 5. The final score she got was 80.

Lola Dewi R got 3 for the first question and 2 for the second, the third, and the fourth because she only answered correctly in writing the data and finishing method. The total score she got was 9 so the final score was 45.

Revi Lestari got the 5 for the first and the second question. For the third and the fourth questions, she got 4 because she used the wrong sentence. The total score she got 18 so the final score was 90.

Dwi Saputra only got 2, in the first question, because he only answered correctly in writing the data and the finishing method. Unfortunately, in the next questions he got 0 because he did not write anything. The total score she got 2 so the final score was 10.

Dafani Debi Y, in the first question, was able to write data and its finishing way so she only got 2. Then, he got 0 in the next because she did not write anything. For the third and the fourth question, he only got 1 for each question because he only wrote the data of questions. The score he got was 4. The final score was 20.

Ahmad Fadhuri only got 3 for the first question because of his wrong answer. In the next question, he got 5 because he answered correctly. While, in the third question, he got 2 because he only answered correctly in writing data and finishing question. For the fourth question, he got 4 because he used the wrong sentence. The total score he got was 14. Then, the final score was 70.

Muhammad Rafli got 2 for the first question because he was wrong in the step of determining of finishing question. In the second question, he got 4 because he write the wrong sentence in the end to answer the question. For the third and the fourth question, he got 2 for each question because he only wrote data and the finishing question method. The total score he got was 10. Then, the final score 50.

Yoania Friska, unfortunately, she got 0 for all questions because he wrote the wrong data. Finally, she only got 0 for this test.

2. The next data obtained is interview data. This data is intended to know specifically where misconception of students is. This data is based on data of the test before. Based on the score student gets, the interview is conducted with all students because the researcher assumes that all of them get misconception when they answer the narrative question in certain step. These are explaining interview data with the students based on guide of interview arranged by the researcher

Wawancara pertama kepada student bernama Rafi Aslamuddin biasa di panggil dengan Rafi. “Dek Rafi, dari soal test yang kemarin dikerjakan ada gak yang sulit menurut adek?”, Rafli menjawab “ya”. “Oke, dari keempat soal ini yang adek kerjakan kemaren, soal nomer berapa yang menurut Rafi paling sulit?”. Rafli melihat kembali soal yang disodorkan dan berpikir sebentar dan ia menjawab “yang nomer 4”. “oke, coba baca kembali soal nomer 4!”. Rafi membacanya dengan jelas dan tanpa ragu soal nomer 4. “Dari soal yang sudah kamu baca, apa sih yang ditanyakan dalam soal tersebut?”. Rafi berpikir sejenak dan menjawab, “Berapa banyak kue sus dalam setiap kotak?” dengan jelas dan tanpa ragu. “ya, benar. sekarang sebelum mengerjakan itu, data apa yang diketahui dan tuliskan di kertas ini”. Rafi mengangguk dan menuliskan data yang ada dalam soal pada lembar kertas yang telah diberikan. Setelah selesai dia menyodorkan kertas tersebut kepada saya. “ Hmm ya, benar sekali. setelah kamu mengetahui apa yang ditanyakan dan data yang diketahui, kira-kira soal ini berhubungan dengan apa? KPK atau FPB?”. “FPB” dia menjawab dengan singkat. “kenapa kog FPB?”, dia melihat kembali soal dan berusaha mencari alasannya dan menggeleng ragu. “lah, tadikan rafli sudah tau apa yang ditanyakan, terus data yang diketahui, dan menentukan ini pakai FPB. kenapa kok adek tadi bisa mengambil keputusan ini pakai FPB?”. “hhmm ya karena kalimatnya pakai kue-kue dan dibagi-bagi. biasanya pakai FPB” dia menjawabnya dengan ragu dan senyum malu-malu. “ohh, ya ya ya. boleh, benar kog itu” “sekarang langkah pertama untuk menyelesaikan soal tersebut bagaimana?. Dia menuliskan cara pertama untuk mencari faktorisasi prima dengan cara susun dan diperlihatkan kepada saya “seperti ini?” dia bertanya untuk meyakinkan. “oke, coba sekarang selesaikan soal tersebut dikertas ini!”. Kemudian saya menunggu

Rafi untuk menyelesaikan soal di lembar jawaban yang telah diberikan di awal. Setelah satu setengah menit berlalu, rafi terlihat kesulitan dengan soal yang dia kerjakan. Dia terlihat mencoret sesuatu kemudian menuliskannya kembali. Lalu mencoba menghitungnya kembali dengan jari-jarinya. Setelah beberapa saat kemudian dia menuliskan sesuatu di lembar jawabannya dan dengan ragu memberikan lembar jawabannya kesaya. “Sudah selesai?”. dia menjawabnya dengan menganggukkan kepala. “Berapa jawabannya?”. Dia terlihat sangat ragu dengan jawabannya karena menjawab dengan hanya menunjukkan angka yang ada dilembar jawabannya. “Tadi apa yang ditanyakan pada soal?”. dia melihat kembali lembar jawabannya, kemudian dia menjawabnya dengan membaca tulisan yang ada dilembar jawabannya “Banyak kue sus dalam setiap kotak?” “Berarati berarti jawabannya berapa banyak kue sus?” “enam”. “kira-kira enam itu, enam apa?” “enam kue sus”. Dari jawaban akhir yang ia kerjakan, sudah menunjukkan kesalahan. Maka wawancara diakhiri dan dilanjutkan memberikan penjelasan tentang kesalahan yang dilakukannya serta pbenarannya³³.

Based on the above data, the data showed that Rafi got misconception in the “carry out the plan” step. It can be known by viewing the wrong last answer.

After viewing the method of finishing question, the researcher knew that Rafi only wrote the method of finding *prime* factorization by stack way. Then, he circled numbers regarded as the important number functioned to finish the FPB question. His answer stopped in the result of FPB. In addition, he also could not continue to find *sus* cake in each box. The number “6” he wrote was regarded as the amount of *sus* cake in each box, whereas “6” in the result of FPB was 6 boxes, not 6 cakes.

Wawancara kedua dengan Firli Afrian Saputra atau biasa dipanggil Firli. Setelah bercakap-cakap sebentar utnuk mencairkan suasana saya mulai menyodorkan lembar soal yang telah dikerjakan

³³ Wawancara dengan Rafi Aslamuddin, siswa kelas IV SD Negeri 01 Blayu, tanggal 26 Mei 2017

kemarin. “Firli, dari soal-soal ini yang dikerjakan kemarin ada kesulitan gak?” “iya”. “kira-kira soal berapa yang paling sulit menurut firli?” (karena semua nomer yang dijawabnya salah ketika test tulis). Dia terlihat berpikir sejenak sambil melihat-lihat kembali soal di hadapannya “yang nomer 4”. “oke, sekarang coba baca kembali soal nomer 4”. Firli membacanya dengan jelas dan lancar soal nomer 4. “Bagus, dari soal nomer 4, apasih yang ditanyakan dalam soal tersebut?” “berapa banyak kue sus yang ada dalam setiap kotak?” dia menjawabnya sambil membaca tulisan yang tertera di dalam soal. “oke, dari soal tersebut apa saja data yang diketahui?” “ada 36 kue coklat, ada 42 kue donat, ada 60 kue sus!” “ ya benar, silahkan ditulis di lembar jawaban mu, sama apa yang ditanyakan tadi!”. Dia mengangguk dan menuliskannya dalam soal. “ dari soal itu, kira-kira soal tersebut berhubungan dengan KPK atau FPB?” “FPB!”. “Kenapa?”. Dia mencoba menjelaskan kenapa dia menjawab berhubungan dengan FPB. Dia menggigit bibir bagian bawahnya tanda berpikir keras. “hmmm, karan kue...” “kenapa kue?” dia hanya bisa membalasnya dengan meringis tidak bisa menjelaskannya. “oke, boleh juga” saya membenarkan alasannya. “kalau berhubungan dengan FPB penyelesaiannya dengan cara apa?” “dengan membagi-bagikan” dia berusaha menjawab. “Oke, sekarang coba selesaikan soal tersebut!”. Dia mulai mengerjakan soal pada lembar jawaban yang telah diberikan. Dia mulai menghitung dengan jari-jarinya dan menuliskannya di lembar jawaban. Setelah dua menit berlalu dia menyodorkan hasil pekerjaannya. “sudah?” dia mengangguk. “jadi berapa jawabannya?” “enam!”, kemudian saya melihat sekilas hasil pekerjaannya. “enam itu enam apa?” dia tampak bingung dengan pertanyaan yang saya berikan kemudian saya tanya kembali. “dari jawaban ini, 6 ini apa?” “FPB”. Dia menjawabnya singkat dan ragu. “hmm iya benar, yang ditanyakan dalam soal tadi apa?” “banyak kue sus!”. “berarti 6 ini?” kemudian dia menjawabnya “enam kue sus...” dengan jawaban ragu. dari sini, Firli telah melakukan kesalahan dalam menjawab soal. Maka wawancara diakhiri kemudian dilanjutkan dengan menjelaskan titik kesalahannya dia³⁴.

The above data showed that Firli got misconception in the “carry out the plan” step because he only answered the question until the step of finding FPB. He was also not able to do the best steps. Whereas he believed that

³⁴ Wawancara dengan Firli Afrian Saputra, siswa kelas IV SD Negeri 01 Blayu, tanggal 26 Mei 2017

his answer but he regarded that number “6” of finding FPB was for six of *sus* cakes.

Wawancara berikutnya dengan Cherys Viola A. biasanya dipanggil dengan Cherys. Setelah berbincang sebentar untuk mencairkan suasana, saya mulai menanyakan tentang soal tes yang kemarin. “Cherys kemarin ketika mengerjakan soal test, soal yang menurut Cherys paling sulit soal nomer berapa?”. Dia melihat soal yang ada di depannya kemudian menunjuk pada soal nomer dua. “yang ini!” “yang nomer dua?” sekarang kamu baca kembali soal yang nomer dua”. Dia mulai membacanya dengan pelan, Suaranya pelan hingga saya harus mendekat. “dari soal tersebut, apa yang ditanyakan?” Di melihat kembali pada soal. Tampaknya dia bingung untuk mengatakan apa yang dijawab dalam soal. Dia tampak berpikir keras kemudian dia menjawab dengan liris “Bu Leni dan Bu mira bertemu setelah?...”. “Setelah itu data apa yang kamu ketahui dari soal nomer dua?”. Dari pertanyaan itu, dia tampak membaca kembali soal di hadapannya dan tampak sangat bingung. Kemudian saya memperjelas pertanyaan saya. “data itu biasanya yang berupa angka-angka yang penting dalam soal” saya berusaha memahaminya, barangkali dia belum faham apa itu data dalam soal matematika. “lima belas” dia menjawabnya dengan singkat dan ragu, “iya terus?” “sepuluh”. “oke, ada 15 ada 10 itu, 15 apa dan 10 apa?”. dia berpikir kembali dan menjawabnya dengan liris. “Hari”. “coba kamu tulis data angka dan kalimatnya ya, yang berhubungan dengan kalimat tersebut!” saya menyuruhnya untuk menuliskannya, barangkali dia bingung kalau harus mengatakannya. setelah itu, dia menuliskan “15 hari bu leni, 10 hari bu mira” sampai sini saya lihat Cherys tampak begitu bingung dengan data yang diketahui maupun apa yang ditanyakan dalam soal. Dia hanya membaca berulang-ulang soal yang dipegangnya dan kurang jelas ketika memotong kalimat yang penting. Karena dari sini Cherys sudah tidak faham maka wawancara dianggap selesai dan dilanjutkan dengan menjelaskan apa yang belum difahami oleh Cherys³⁵.

The above data showed that Cherys got misconception in the step of “understanding the problem”. This assumption was based on her confusion when she answered the question about the second question. She was seemed as the confused when she answered by using oral or writing because she did not know what the question about is.

³⁵ Wawancara dengan Cherys Viola A, siswa kelas IV SD Negeri 01 Blayu, tanggal 26 Mei 2017

Wawancara selanjutnya dengan Rangga Rizky Fitriani atau biasa dipanggil dengan Rangga. Setelah melakukan perbincangan ringan untuk mencairkan suasana saya mulai menunjukkan soal yang telah dikerjakan kemarin. “Rangga, dari soal-soal ini, yang kamu kerjakan kemarin. nomer berapa yang menurutmu paling sulit?”. Dia mulai memperhatikan soal yang ada di hadapannya, kemudian dia menunjuk soal nomer empat. “oke, coba baca kembali soal nomer empat!”. Dia mulai membaca soal dengan lancar meski kadang terhenti pada kata-kata tertentu. Setelah dia selesai membaca soal saya bertanya apa yang ditanyakan dalam soal. Dia menjawabnya dengan membaca pertanyaan dalam soal. “oke, selanjutnya data apa yang ada dalam soal nomer empat ini?”. Dia berpikir sejenak dengan melihat kembali soal yang ada dalam genggamannya. “35” dia menjawabnya dengan singkat, kemudian saya tanya kembali “36 itu apa?” “kue sus!”. “oke bagus, seperti itu jawabnya, disebutkan juga penjelasan dari angka itu ya...”. Dia mengangguk, “selanjutnya apa lagi?” “42 kue donat, 60 kue sus”. “sib, bagus!. coba tulis di kertas ini apa yang diketahui dan apa yang ditanyakan!”. Kemudian dia menuliskannya dalam kertas yang saya berikan. “Dari pertanyaan itu dan data yang kamu ketahui kira-kira soal ini berhubungan dengan apa? KPK atau FPB?”. Dia mulai berpikir keras, melihat kembali soal yang diberikan. kemudian menjawabnya dengan ragu “KPK?”. Saya tersenyum simpul dan menanyakan kembali “yakin KPK?” “FPB” dia muali bingung dengan mengganti jawabannya. karena memang pilihan jawabannya hanya dua maka saya berusaha menanyakan lagi “KPK atau FPB? FPB atau KPK?”. Dia malah bingung dan menggeleng kan kepala. dari sini berarti Rangga sudah mengalami miskonsepsi hingga tahap ini. Wawancara pun selesai dan saya lanjutkan dengan menjelaskan cara mengidentifikasi soal yang berhubungan dengan KPK dan FPB³⁶.

The data above showed that Rangga got misconceptions in the step of “devising a plan” because he could not answer to finishing the question. Moreover, he also could not determine what questions should be finished by KPK or FPF are.

Wawancara selanjutnya dilakukan dengan Anita Febriyani atau biasa dipanggil Ita. “Ita, kemarin ketika mengerjakan soal, menurutmu yang paling sulit yang mana?”. Ita mulai melihat-lihat kembali soal yang saya berikan. “nomer 4”. Aku menganggukkan kepala “coba seh baca lagi soalnya!”. Ita mulai

³⁶ Wawancara dengan Rangga Rizky Fitriani, siswa kelas IV SD Negeri 01 Blayu, tanggal 26 Mei 2017

membaca kembali soal nomer empat dengan lancar dan jelas. “Dari soal tersebut, kira-kira apa sih yang ditanyakan dalam soal?”. “Berapa banyak kue sus dalam setiap kotaknya?” “iya, benar. Sekarang coba cari data yang ada dalam soal ini!”. Setelah melihat soal dia menjawab “36 kue sus, 42 kue donat, 60 kue sus”. “Bagus coba tuliskan data itu di kertas ini dan sekaligus dengan apa yang ditanyakan dalam soal ya...”. Dia menganggukkan kepala dan segera menuliskan apa yang saya perintahkan. “Setelah kamu mengetahui data dan apa yang ditanyakan, kira-kira soal tersebut berhubungan dengan apa? KPK atau FPB?” “FPB” dia menjawabnya dengan cukup jelas dan tanpa ragu. “Bagus, sekarang coba selesaikan soal ini ya...”. Dia mengangguk dan mengerjakannya. Setelah dua menit, dia menyerahkan hasil jawabannya. “Sudah?, Yakin sudah selesai?”. Dia mengangguk mantap. “Oke, dari jawabanmu ini 36?” “hhmmm” dia mengangguk mulai ragu dengan jawabannya. “36 ini apa? hasil dari FPB?” Dia mengangguk kembali. “Oke Ita, trus angka 6 ini apa?” karena dia menjawab nya 36 dan 6 dengan menulisnya secara bersusun sehingga saya harus menanyakan angka 6 juga. Ita meresponnya dengan berpikir keras. Dia melihat kembali hasil jawabannya dengan seksama. “oh, FPB nya 6” dia meralat jawabannya. “terus angka 36 ini apa?”. dia hanya meringis ketika ditanya asal usul angka 36 yang dia tulis. “Oke, gapapa. Tadi apa yang ditanyakan dalam soal?” “Banyak kue sus...”. Berarti berapa banyak kue susnya?”. Dia menjawabnya dengan ragu “enam”. Dari percakapan terakhir, Ita salah pengertian dalam menjawabnya sehingga wawancara diakhiri. Kemudian saya mulai meluruskan kembali kesalahan yang dia perbuat dan menjelaskan cara penyelesaiannya³⁷.

The above data showed that Ita got misconception in the step of “carry out the plan”. Based in the data, Ita was able to determine the method to finish the question but she got wrong when she did the way to finish question.

Wawancara selanjutnya dilakukan dengan Qutwah Gaida Zahira atau biasa dipanggil dengan Zahira. Setelah berbincang sebentar untuk mencairkan suasana, saya mulai masuk dalam inti wawancara. “Zahira, dari soal yang kamu kerjakan kemarin nomer 3 ini kamu bisa menyelesaikannya gak?”. Dia mulai berpikir dengan melihat kembali soal nomer tiga yang saya sodorkan. Dia berusaha untuk mengingatnya kembali kemudan dengan malu-malu menggelengkan kepala. “hhmm apakah soal nya sulit?”. Zahira menganggukkan kepala. “oke, coba seh baca kembali

³⁷ Wawancara dengan Anita Febriyani, siswa kelas IV SD Negeri 01 Blayu, tanggal 26 Mei 2017

soalnya”. Kemudian Zahira membacanya dengan lancar dan jelas. “Dari soal tersebut apa sih yang ditanyakan?” “Berapa kali menabung?” “Siapa?” zahira mulai melihat soal lagi dan menjawab “seno”. “Sekarang disitu data apa saja yang diketahui?” “15, 20, 25”. “angka itu berhubungan dengan apa?” “dengan menabung?” dia mencoba memastikan jawabannya kepada saya. “iya, berarti 15 itu siapa yang menabung?” “Seno”. “Oke, dari data itu dan yang ditanyakan dalam soal tadi kira-kira soal ini berhubungan dengan apa?”. Zahira berpikir sejenak dan menjawab “FPB?” dia mencoba untuk menanyakan kembali jawabannya. “Kenapa kog FPB?”. Dia hanya bisa tersenyum dan menggelengkan kepala. Karena Zahira sudah salah dalam memberikan jawabannya maka wawancara selesai dan dilanjutkan dengan menjelaskan tentang soal nomer 3³⁸.

Based on the above data, Zahira got misconception in the step of “divising a plan”. Although confused in the beginning, she finally learned the questions after she was guided.

Wawancara selanjutnya dilakukan dengan M. Syamil Ihkamuddin atau dipanggil dengan Syamil. “Syamil, ada kesulitan ketika menjawab soal-soal kemarin?”. Dengan muka yang ceria dia menjawabnya “iya”. Oke, ini soal-soal yang kemarin, mana menurutmu yang sulit?”. Dia mengambil soal ditangan saya dan mulai untuk melihat soal satu persatu. Selanjutnya dia menunjuk pada soal yang nomer dua “yang ini, yang nomer dua”. “oke, sekarang coba kamu baca kembali soal ini”. Syamil membacanya dengan keras meski nada yang digunakannya masih datar dan ritme melambat di beberapa kata. “Berarti yang ditanyakan dalam soal itu apa?” “mereka bertemu lagi setelah...” Dia membaca kembali soal nomer dua bagian pertanyaan. Dia membacanya dengan nada dan ekspresi yang datar. “Data yang diketahui apa?” dia berusaha untuk memahami lagi soal yang ada ditangannya. Dia terlihat berpikir keras. “Data itu, biasanya berupa angka penting” dia mengangguk. “15” “15 itu apa?”. Dia membaca kembali soalnya. Setelah beberapa saat, “Hari?” “iya benar, selanjutnya?” “10”. dia menjawabnya singkat. “oke, berarti soal ini dapat diselesaikan dengan apa?”. “FPB?” dia menjawabnya asal dan mencoba menanyakan kembali jawabannya”. Karena, saya merasa Syamil sudah tidak memahami soal yang ditanyakannya maka wawancara selesai³⁹.

³⁸ Wawancara dengan Qutwah Gaida Zahira, siswa kelas IV SD Negeri 01 Blayu, tanggal 26 Mei 2017

³⁹ Wawancara dengan M. Syamil Ihkamuddin, siswa kelas IV SD Negeri 01 Blayu, tanggal 26 Mei 2017

Syamil got misconceptions in the “understanding the problem” step. The data showed that Syamil did not understand the question yet. It was indicated by his expression when he was commanded to read the question. He read it by smooth tone and slow rhythm. It can be stated that he had not read fast. Each question he read would be repeated and answered slowly and hesitantly.

Wawancara selanjutnya dilakukan dengan Martha Dewi O., seorang siswi yang biasa dipanggil dengan Martha. Setelah berbincang sebentar untuk mencairkan suasana agar tidak tegang saya masuk ke inti pembicaraan. “Martha, dari soal yang dikerjakan kemarin apakah kamu merasa ada yang salah dari jawaban kamu?. Dia mengangguk. “oh iya, kira-kira manasih yang sulit dari soal kemarin?”. Saya memberikan soal kemarin, Martha mulai melihat-lihat soal yang diberikan. “Yang nomer satu” “hmm, Coba dibaca ulang soalnya!”. Martha mulai membaca ulang soal dengan lancar dan jelas. “lalu yang ditanyakan dalam soal tersebut apa?” “Banyak tetangga yang mendapatkan bingkisan?” “ya benar, data yang diketahui apa?”. Martha menjawabnya dengan jelas tanpa ada kendala. Maka saya menyuruhnya untuk melanjutkan untuk menyelesaikan soal itu hingga akhir. “oke jawabannya apa?” “20”. “dari soal yang ditanyakan tadi berarti jawabannya?” “20 tetangga!”. “Iya benar, Bisa gitu kog. Sekarang coba soal yang lain ya, ini coba soal nomer 3”. Saya memberikan kategori soal yang lebih sulit. Dia hanya mengangguk kepala. “Kerjakan soal ini seperti yang nomer 1 ini ya”. Kemudian ia membaca soal dalam hati dan mulai mengerjakan. setelah 2 menit berlangsung saya menanyakan apakah sudah selesai. “Sedikit lagi” dia menjawabnya dengan singkat. Setelah beberapa saat dia memberikan soal jawabannya. “Dari soal nomer tiga ini, apasih yang ditanyakan dalam soal?” “butuh berapa kali seno menabung?”. “oke, jadi butuh berapa kali seno menabung agar bertemu dengan kedua temannya?” “300 kali!” Martha menjawabnya dengan singkat. “Dari mana kamu mendapatkan angka 300 itu?”. dia mulai berpikir kembali “dari KPK nya”. “Coba sekarang kamu jawab menggunakan kalimat yang sesuai dengan pertanyaan soal”. “Jadi, seno butuh 300 kali untuk bertemu dengan kedua temannya”. “kamu yakin dengan jawabanmu?” Martha tersenyum dan menggelengkan kepala. “sekarang kamu perhatikan lagi soalnya, angka hasil KPK yang 300 ini hari apa kali?”. Dia mulai berpikir kembali kemudian menjawab “hari”. iya kalau hari berarti butuh berapa kali?”. Martha menggelengkan kepala. Saya masih menunggu banrangkali

Martah masih berusaha untuk menjawabnya. “hhmmm 300 dibagi”. “ya benar, dibagi dengan apa?”. Martah tersenyum malu-malu sambil menggelengkan kepala. Dari sini, saya menjelaskan hingga masalah terselesaikan⁴⁰.

The data showed that Martha understand well. She only got misconception in “looking back” step. This misconception indicated that she was confused when she learned the correlation of sentence in the answer and the question whereas she had learned the step of finishing question until the last step. She realized the wrong answer in answering question. Finally, she knew where the wrong question is when she was given the question guiding her to learning.

Wawancara berikutnya dilakukan kepada Syahrul Alfian Azizi atau biasa dipanggil dengan Syahrul. Setelah berbincang sebentar untuk mencairkan suasana saya mulai menanyakan kesulitan pada soal yang dikerjakan kemarin. Syahrul mulai memilih soal yang menurutnya paling sulit dan ia memilih soal nomer 3. “Oke dari soal nomer tiga coba dibaca lagi”. Syahrul mulai membacanya dengan cepat dan cukup jelas. “Apa yang ditanyakan disana?” “butuh berapa kali seno menabung agar bertemu dengan kedua temannya” Syahrul menjawabnya dengan lugas. “Oke, sekarang data yang diketahui apa saja?”. Syahrul menjawabnya dengan lengkap dan jelas. “Soal tersebut berhubungan dengan apa berarti?” “KPK”. “Yakin??” “iya yakin”, “kenapa menggunakan KPK” “karena ada hari-harinya dalam data”. “Oke benar, coba kamu selesaikan” kemudian Syahrul mengerjakannya dengan cepat kira-kira satu menit. Karena dia terlihat sudah tidak melakukan apa-apa dan terlihat ragu untuk mengetakan selesai kepada saya maka saya bertanya terlebih dahulu. “Berapa?” Syahrul berpikir sejenak sebelum menyebutkan hasil pekerjaannya. “300?” dia mencoba untuk menanyakan jawabannya. “Yakin??” saya menimpali. kemudian tampak Syahrul memikirkan kembali jawabannya. “300 itu apa?” “KPK nya” Syahrul menimpali secara langsung. “berarti 300 itu keterangannya apa kalau dihubungkan dengan pertanyaan dalam soal?”. Syahrul mulai menggaruk kepalanya untuk berpikir lebih keras. “Hari?” Syahrul bertanya kepada saya. “Ya, benar. Sedangkan yang ditanyakan?” “Kali” dia menjawab dengan pasti. “Berarti?” “hhmmm 300 dibagikan 15?”. “Ya benar, berarti jawabannya?”. terlihat dia memikirkan jawabannya. “Tulis saja, coba dihitung disini” saya memintanya

⁴⁰ Wawancara dengan Martha Dewi O., siswa kelas IV SD Negeri 01 Blayu, tanggal 26 Mei 2017

untuk menuliskan ketika dia menghitung. Saya menangkap bahwa Syahrul malas untuk menulis, dia lebih suka berhitung dengan mengangan-angan. itu juga terlihat dari hasil soal tes kemarin yang hanya menuliskan poin pentingnya saja. Oleh karena itu, dia mendapat skor jelek di test tulis⁴¹.

Syahrul, based on the data, got misconceptions in the “looking back” step. Although he was capable to follow how the plot of question is correctly and think deeply in the last step, he realized the deficiency in finishing question. After discussing, he finally knew and was capable to accomplish it correctly.

Wawancara selanjutnya dengan Andro Vani Maulana atau biasa disapa dengan Andro. Setelah berbincang ringan dengan andro maka saya langsung masuk ke inti pembicaraan. “Andro, kemaren apakah kamu merasa ada yang salah dengan jawabanmu?” Andro hanya menjawabnya dengan mengangguk. “Oke ini soal kemarin, menurut kamu mana soal yang paling sulit?”. Andro melihatnya sekilas dan menjawab nomer dua. Setelah saya melihat hasil tes yang dikerjakan Andro maka saya bertanya lagi untuk meyakinkan. “Yakin yang menurutkamu sulit yang nomer dua?” “iya” dia mengangguk mantap. “Oke coba dibaca lagi soal nomer dua!”. Andro membacanya dengan lancar dan jelas. “Berarti yang ditanyakan apa?” “mereka bertemu kembali untuk mengisi galon setelah berapa hari?” “Oke, data yang diketahui apa saja?” “hmm bu leni 15 hari dan bu mira 10 hari!”. “heem lanjut, soal itu berhubungan dengan apa?” “KPK”. “Yakin” “iya”, “oke coba selesaikan!”. Setelah 1,5 menitan Andro sudah selsesai menjawabnya. “Berarti jawabannya apa?” “setelah 30 hari”. “Coba saya lihat, iya benar” kemudian aku kroscek keleambar soal test yang dikerjakannya kemarin karena wawancara ini saya nilai tidak ada permasalahan. Setelah saya cek keleambar jawaban soal test ternyata Andro sudah mengerjakannya dengan benar untuk soal yang kedua. Oleh karena itu saya putuskan untuk menanyakan soal lain yang tingkatannya lebih sulit. Kebetulan soal nomer 3 dia memperoleh skor 4. “Coba sekarang kerjakan yang nomer 3 ya Andro” Andro hanya mengangguk dan mulai mengerjakannya. Setelah 2 menitan lebih mengerjakan soal nomer 3 andro menyodorkan hasil pekerjaannya. “Jawabannya apa Andro?” “setelah 300 hari mereka akan bertemu”. “hhmm ya ya, coba kamu baca sekali lagi soal nomer 3”. Andro kemudian membacanya dengan lancar dan jelas. “Berarti apa yang ditanyakan disitu?”.

⁴¹ Wawancara dengan Syahrul Alfian Azizi, siswa kelas IV SD Negeri 01 Blayu, tanggal 26 Mei 2017

“Hmmm berapa kali?” dia menjawabnya dengan ragu. Sepertinya dia merasa ada kesalahan. “iya berarti berapa kali menabung agar bertemu?”. “Hhmm” dia terlihat berpikir keras. “tahu caranya?”. Dia mengangguk kepala, “iyaa”. “Gimana caranya?”. “300 dibagi.... 15”. Dia menjawabnya dengan yakin setelah melihat soal. “ya benar sekali andro”. “berarti butuh berapa kali menabung?” “20 kali” dia menjawabnya dengan yakin setelah menghitungnya di kertas. Selanjutnya saya menanyakan bagaimana dengan Andi dan Ratna. Butuh berapa kali mereka menabung? dan Andro menjawabnya dengan benar⁴².

The above data showed that Andro got misconceptions in the “looking back” step. Andro was only confused when he correlated between answers and questions. He also realized that there was the wrong answer. After discussing, finally he knew and learned his deficiency and finished the questions.

Wawancara selanjutnya dilakukan dengan Muhammad Riski Afandi atau nama panggilannya Riski. Setelah memberikan pertanyaan basa-basi untuk mencairkan suasana kepada Riski, saya mulai menanyakan tentang soal yang dikerjakan sebelumnya. “Riski, masih ingat dengan soal-soal ini kan?”. Dia tersenyum dan mengangguk kepala. “Dari soal-soal ini menurutmu mana soal yang paling sulit?”. Dia mulai mengamati lembar soal yang saya sodorkan. “yang nomer tiga!”. “Oke sekarang coba baca kembali soal nomer 3!”. Riski mulai membaca kembali soal nomer tiga dengan lancar dan jelas. “Dari soal yang barusaja kamu baca, yang ditanyakan dalam soal itu apa?”. Riski menjawabnya dengan membaca pertanyaan yang tertulis pada soal. “Trus dari soal itu data yang diketahui apasaja?” setelah berpikir sejenak dan mengamati soal Riski menjawab “15 hari, 20 hari, 25 hari”. “Ya bagus, kalau begitu soal ini bisa diselesaikan dengan cara apa?”. “KPK” Riski menjawabnya dengan singkat dan mantap. “Tahu kenapa kog menggunakan KPK?”. Riski tampak ragu dan mengangguk pelan. “Kenapa?” “karena ada hari-harinya” riski menjawabnya dengan nyengir malu. “Boleh, benar juga kog, Sekarang coba selesaikan soalnya di kertas ini!”. Riski mulai mengerjakan pada selembar kertas yang saya berikan. Setelah 2 menit berlalu saya lihar Riski mulai terdiam dengan pekerjaannya. “Sudah selesai?” Riski menggelengkan kepala sambil menyodorkan kertas jawabannya. Tampaknya dia menyerah dengan pekerjaannya. “hmm ini sudah benar, setelah ini

⁴² Wawancara dengan Andro Vani Maulana, siswa kelas IV SD Negeri 01 Blayu, tanggal 26 Mei 2017

diapakan?” “dikali”. “Bagus, angka manasaja yang dikalikan?” “angka ini dan ini”. Dia melingkari dua angka prima, 2 dan 5. “Yakin??” Riski menjawabnya dengan menggeleng kepala. Dari sini Riski mengalami kesalahan maka wawancara diakhiri dan saya meluruskan kesalahan yang dilakukan riski⁴³.

The data above showed that in the “carry out the plan” step he got misconception. It was really clear when he tried to finish the question. Although the method he used was right, he got false when he determine the multiple to find KPK form the data.

Wawancara selanjutnya dengan Adi Setia Pradana atau biasa dipanggil dengan Adi. “Adi kemarin ada kesulitan ketika menjawab soal?” “iya” dia menjawabnya dengan singkat. “Kira-kira mana yang paling sulit” saya menyodorkan kertas soal. Adi mengamati lembar soal dan pilihannya tertuju pada soal nomer 4 “yang ini”. “Oke sekarang coba baca kembali soal nomer 4”. Adi membacanya dengan pelan menggunakan nada yang datar. “Oke dari soal yang barusan kamu baca, apa yang ditanyakan?” Adi terdiam dan tampak bingung. “Coba kamu lihat disoal barusan, Pertanyaannya apa?”. Adi mau membaca soal lagi dari awal. “Maksudnya yang merupakan pertanyaan dari kalimat itu yang mana?” Adi berpikir lagi dan membaca ulang soal dengan liris kemudian menjawab “Banyak kue sus dalam kotak?”. “Iya benar, sekarang data yang ada dalam soal tersebut apa?” Adi terdiam dan pandangannya tertuju pada soal kembali. Setelah saya tunggu beberapa saat belum ada jawaban maka saya menjelaskan apa itu data. Dia menjawab “36” “Iya ada lagi?” “42” “iya ada lagi?” “60”. “Ada lagi?” Adi menggeleng kepala. “oke, bagus. Kira-kira soal ini bisa diselesaikan dengan cara apa?”. Adi berpikir lagi dan menjawabnya asal “KPK” “kenapa KPK?”. Adi menggelengkan kepala. Dari wawancara ini Adi tampak belum bisa mengikuti setiap alur pertanyaan. Dari cara dia membaca soal terlihat dia belum bisa memahami soal karena dia masih membaca berulang-ulang ketika ditanyakan. Dia juga belum begitu lancar dalam membaca karena ketika membaca dalam hati bibirnya masih ikut bergerak-gerak⁴⁴.

Based on the interview data, because Adi did not understand and read the question frequently he only got misconception in the “understanding the

⁴³ Wawancara dengan Muhammad Rizki Afandi, siswa kelas IV SD Negeri 01 Blayu, tanggal 27 Mei 2017

⁴⁴ Wawancara dengan Adi Setia Pradana, siswa kelas IV SD Negeri 01 Blayu, tanggal 27 Mei 2017

problem” step. It is showed that he needed the more effort to answer the question.

Wawancara selanjutnya dengan Norma Amalia yang biasa dipanggil dengan Norma. Setelah melemparkan pertanyaan ringan untuk mencairkan suasana, saya langsung masuk ke inti pembicaraan. “Norma ini soal yang kemarin, dari soal ini yang menurut kamu sulit mana?”. Norma tampak memilih-milih soal dengan cukup lama kemudian menentukan soal nomer 2. Saya hanya mengangguk “Oke coba dibaca kembali soalnya!”. Norma membaca soal dengan suara yang agak lirih sehingga saya harus sedikit mendekat untuk mendengarkannya dengan jelas. “Oke dari soal ini apasih yang ditanyakan?” Norma tersenyum kecut dan menggelengkan kepala. kelihatannya dia mudah sekali menyerah. Kemudian saya memintanya membacanya kembali soal nomer dua. Setelah membacanya dengan pelan dan menggelengkan kepala. “biasanya pertanyaan itu kalimat yang ada titik titiknya!” saya memberikan klu lain barangkali dia akan memahaminya. Norma hanya menjawab “setelah ... hari?”. Kemudian saya tersenyum. Saya kira wawancara berakhir karena Norma tidak bisa mengikuti alur pertanyaan. Selain itu Norma sudah terlihat jelas bahwa dia masih kesulitan untuk memahami soal cerita⁴⁵.

Based on the above data, she got misconception in the “understanding the problem” step. The data showed that she did not really understand about what she red when the researcher gave the clue to understand what the questions mean.

Wawancara selanjutnya dengan Adellia Putri Wardani atau biasa disapa dengan Adel. Setelah berbincang ringan untuk mencairkan suasana saya memberikan soal yang telah dikerjakannya kemaren. “Adel, dari soal ini yang menurut adel paling sulit yang mana?”. Adel mengamati soal sebentar kemudian menjawab “yang nomer 3”. “Oke coba kamu baca kembali soalnya!”. Adel membacanya dengan lancar dan jelas. “Adel yang ditanyakan soal itu apa sih?”. Adel menjawabnya dengan membaca kutipan kalimat tanya yang ada dalam soal. “Oke, selanjutnya data apa saja sih yang diketahui dalam soal?”. Adel menjawab dengan cara yang sama, mengutip langsung kalimat dalam soal. Jawabannya saya anggap cukup karena setidaknya dia memahami apa yang ditanyakan dan mana data yang penting dalam soal. “Oke Adel, kalau begitu soal ini bisa diselesaikan dengan cara apa?”. Dia tampak bingung dengan

⁴⁵ Wawancara dengan Norma Amalia, siswa kelas IV SD Negeri 01 Blayu, tanggal 27 Mei 2017

pertanyaan saya sehingga saya memperjelasnya “memakai KPK atau FPB?”. “KPK!” dia menjawab dengan yakin. “Alasannya?” “Karena ada hari-harinya”. “Oke kalau begitu coba kerjakan dikertas ini ya!”. Adel kemudian mengerjakannya dikertas yang sudah disediakan. Tidak lama kemudian Adel memberikan lembar jawabannya. “Jawabannya berapa kali?” “300 kali” dia menjawabnya dengan yakin. “yakin 300 kali?” dia menganggukkan kepala. Karena jawabannya salah maka saya berusaha untuk menjelaskan letak kesalahan dari jawaban Adel⁴⁶.

The data showed that, Adel got misconception in the “carry out the plan” step. The misconception can be known by his wrong when she answer the question of KPK. Although the method she used was right, the answer was not complete. Finally, his answer was wrong.

Wawancara selanjutnya dengan Nurul Fadhila biasa dipanggil dengan Dhila. “Dhila, dari soal kemarin yang kamu kerjakan, kira-kira soal nomer berapa yang paling sulit?” “nomer tiga” jawab dhila setelah mengamati lembar soal dan mengingat-ingat sejenak. “Oke, coba sekarang kamu baca kembali soal itu!”. Dhila kemudian membacanya dengan lancar dan jelas. “Bagus, setelah kamu baca. soal tersebut bertanya tentang apa sih sebenarnya?” “tentang kapan mereka bertemu?”. “Yakin?, coba kamu perhatikan lagi soalnya”. Setelah Dhila mengamati kembali soalnya dia berkata “setelah berapakah seno menabung agar mereka bertemu kembali?”. “Iya itu yang paling tepat. Dari soal itu, data apasaja yang kamu temukan?”. “15 hari sekali untuk seno, 20 hari untuk andi dan 25 hari untuk ratna”. “Tepat sekali, berarti untuk menyelesaikan soal ini cara apa yang harus digunakan?”. “KPK..!” “yups! sekarang kamu kerjakan soal itu dikertas ini ya...!”. Dhila tampak mengerjakan dengan lancar. Tidak butuh waktu lama untuk menyelesaikan soal tersebut. “Berapa Dhila jawabannya?”. “300”. “iya 300 apa?”, “300 hari”. “lha yang ditanyakan tadi apa?” “hhmmm kali...!”. “Berarti jawabannya?” dhila mulai bingung dengan jawabannya dan berusaha untuk berpikir keras. Kemudian dia menjawab “tapi yang 300 ini hari”. “Bagus, berarti untuk mencari berapa kali 300 hari itu diapakan?” Dhila mulai berpikir kembali. sesaat kemudian dia menggelengkan kepala. Dari sini saya baru menjelaskan bagaimana cara mencari jawaban yang benar⁴⁷.

⁴⁶ Wawancara dengan Adellia Putri Wardani, siswa kelas IV SD Negeri 01 Blayu, tanggal 27 Mei 2017

⁴⁷ Wawancara dengan Nurul Fadhila, siswa kelas IV SD Negeri 01 Blayu, tanggal 27 Mei 2017

Based on the data, in the “carry out the plan” step Dilla got misconception. It was really seemed when the interview did. She was confused with the way of solving problem. Although she was able to determine the way in solving problem, she got mistake. So the answer was incorrect.

Wawancara dilakukan dengan siswi yang bernama Lola Dewi Ramdhanita atau biasa dipanggil dengan Lola. Wawancara dengan lola berjalan cukup lama karena dia termasuk anak pendiam dan suka asik bermain sendiri. “Lola, kemarin dari soal-soal ini yang menurut kamu paling sulit yang mana?”. Lola memperhatikan setiap butir soal dengan saksama. kemudian menunjukkan pada soal nomer 2 “ini”. “Oh jadi nomer dua yang paling sulit ya? coba dibaca soalnya Lola!”. Kemudian lola membacanya dengan pelan setelah selesai dia menaruh soal dimeja dan perhatiannya sudah tertuju pada kuku-kuku jarinya. “Bagus lola, Sekarang tolong perhatikan soal ini yang tadi kamu baca!”. Perhatian lola kembali ke lembar soal. “Dari soal ini sebenarnya yang ditanyakan apa sih?”. Lola terdiam memperhatikan soal, kemudian badannya bergerak-gerak tidak tidak nyaman. Respon Lola selanjutnya adalah hanya memandang saya dan terdiam. Saya memintanya untuk menuliskan pertanyaan dalam soal di selembar kertas, barangkali dia akan lebih mudah karena kesulitan jika menggunakan bahasa verbal. “Jadi yang ditanyakan dalam soal ini apa coba kamu tulis di kertas ini”. Dia hanya mengangguk sebentar dan menuliskannya di kertas. Setelah Lola menuliskannya dalam kertas saya lihat hasil pekerjaannya. Lola menuliskan kalimat yang tidak ada unsur pertanyaannya. Dia menulis “Di depo minum air “segar””. “Dalam soal tersebut ada data penting gak? biasanya berupa angka-angka!”. Dia mengangguk, “ada?”. Lola menjawab “ada”. “Coba kamu tuliskan di kertas juga ya!”. Lola mengangguk dan menuliskan data yang ada. “soal ini kira-kira bisa diselesaikan dengan cara apa ya? coba kamu tulis”. Lola menuliskannya dengan FPB. Dari sini saya beranggapan bahwa lola sudah tidak bisa mengikuti alur wawancara. Dia tidak memahami soal yang dia baca⁴⁸.

Based on the interview data, Loila got misconception in the “understanding the problem” step. The misconception can be known during the interview. When the researcher asked the question she was only

⁴⁸ Wawancara dengan Lola Dewi Ramdhani, siswa kelas IV SD Negeri 01 Blayu, tanggal 27 Mei 2017

silent. Then, when the researcher asked her to write what the question want, she wrote the uncorrelated sentence to the question.

Responden selanjutnya yang diwawancarai adalah Revi Lestari atau yang biasa dipanggil dengan Revi. “Revi, kamu masih ingat dengan soal-soal inikan? coba kamu lihat menurut kamu soal yang paling sulit soal yang nomer berapa?”. Revi memperhatikan soal yang diberikan kepadanya. Setelah beberapa saat Revi memilih soal nomer tiga. Seperti biasa saya memintanya untuk membaca kembali soal yang menurutnya sulit. Revi membacanya dengan lancar dan jelas. Setelah membaca soal saya bertanya inti pertanyaan pada soal. Saya memintanya untuk langsung menuliskan soal pada lembar kertas yang sudah saya berikan kemudian baru membacakannya untuk saya. “Berapa kali seno akan bertemu dengan temannya?” Revi membacakan hasil jawabannya. “Oh ya?, coba perhatikan kembali pertanyaan dalam soal! Disana apa benar seno berapa kali akan bertemu? apa berapa kali menabung agar seno bertemu?”. Revi tertawa malu dan menyebutkan kalimat yang kedua. “Bagus, Sekarang kamu tuliskan data yang kamu ketahui dalam soal. Revi menuliskan data-data itu dengan benar. Kemudian Saya menanyakan bagaimana cara yang bisa digunakan untuk menyelesaikan soal ini. Revi menjawabnya dengan FPB. “Kenapa menggunakan FPB?” Revi hanya menggelengkan kepala. Dari sini wawancara diakhiri karena Revi salah dalam menjawab. Dari bahasa tubuhnya Revi benar-benar tidak tahu dengan jawaban salah yang dia lakukan⁴⁹.

Based on the data, Revi got misconception in the “devising a plan” step. Although she was wrong in answering the first question by writing incomplete sentence, she finally realized and learned the mistake. Then, she corrected it with the correct answer.

Responden selanjutnya yang diwawancarai adalah Dwi Saputra atau biasa dipanggil dengan Dwi. “Hei Dwi kamu masih ingat dengan soal-soal inikan?” Dwi menganggukkan kepala. “Oke sekarang kamu amati lagi dari soal kemarin yang menurut kamu paling sulita yang mana?”. Dwi mengamati soal-soal yang saya berikan kemudian menunjuk angka nomer 2. “Oke, sekarang coba kamu baca kembali soal nomer dua!”. Dwi membacanya dengan lambat dan intonasi datar. “Sudah faham dengan soalnya?” Dwi hanya diam saja dan mencoba paham dengan melihat dengan saksama pada lembar soal. “hmm yang ditanyakan dalam soal itu

⁴⁹ Wawancara dengan Revi Lestari, siswa kelas IV SD Negeri 01 Blayu, tanggal 27 Mei 2017

apa sih?” “Mereka bertemu setelah titik hari”. Dwi menjawabnya dengan membaca teks pertanyaan pada soal. “Oke, boleh. Sekarang data apa saja yang kamu ketahui dalam soal tersebut!” “15 hari” “iya terus?” “10 hari”. “Oke kalau begitu soal ini bisa diselesaikan dengan cara apa?” “FPB” Dwi menjawab singkat dengan asal-asalan. “Tau kenapa menggunakan FPB?” “hehe tidak tau” dwi menjawabnya dengan tertawa malu. Dari sini wawancara selesai karena sudah jelas Dwi mengalami miskonsepsi⁵⁰.

Based on the data, Dwi got misconception in the “divising a plan” step. It can be known when she answered the question. She answered the question using FPB method rather than KPK method whereas the question talked the narrative using the KPK method.

Responden selanjutnya yang diwawancarai adalah Dafani Debi Yohana yang biasa dipanggil dengan Dafa. Setelah berbincang ringan untuk mencairkan suasana saya mulai ke inti pertanyaan. “Dafa, dari soal ini yang menurut kamu paling sulit yang mana? ayo kita diskusikan!”. Dafa mulai memperhatikan setiap butir soal. “Yang nomer tiga”. “Ya sekarang coba kamu baca ulang soal nomer tiga!”. Dafa membacanya dengan lancar dan jelas. “Oke, jadi dalam soal tersebut apa yang ditanyakan?”. “hmm, butuh berapa kali seno menabung agar bertemu dengan kedua temannya?” Dafa menjawabnya dengan mengutip kalimat dalam soal. “terus data apa yang kamu ketahui dalam soal tersebut?” Dafa menyebutkan angka-angka beserta nama yang berhubungan dengan angka tersebut “Seno 15 hari” dan seterusnya. “Oke berarti soal ini bisa diselesaikan menggunakan cara apa?” “KPK” Dafa menjawabnya dengan yakin. “KPK apa FPB?” saya mencoba untuk meyakinkan jawabannya. “KPK” dia menjawabnya sekali lagi. “oke oke oke, Kenapa kog menggunakan KPK?”. “Karena ada hari-harinya”. “Oke, coba sekarang selesaikan soalnya!”. Dafa menjawabnya dengan cukup cepat, saya tidak harus menunggu dengan lama. “Oke Dafa, berapa hasil akhirnya?” “300?”. “Yakin jawabannya 300? apasih 300 itu?” “KPK nya!”. “Oke benar itu KPKnya, kalau itu PKP nya, coba perhatikan soalnya! 300 itu hari apa kali?” “Hari...”. “Trus soalnya tadi menanyakan hari apa kali?”. “Kali..”. “Berarti gimana cara mencari agar menemukan kali?”. “Dibagi?” “Iya benar, dibagi dengan Angka berapa?” “15”. “Iya, Bagus, Berarti hasilnya?” “20 kali”⁵¹.

⁵⁰ Wawancara dengan Dwi Saputra, siswa kelas IV SD Negeri 01 Blayu, tanggal 27 Mei 2017

⁵¹ Wawancara dengan Dafani Debi Yohana, siswa kelas IV SD Negeri 01 Blayu, tanggal 27 Mei 2017

Based on the data, Dafa got misconception in the “looking back” step. It can be known by his confusing when he asked about the unit number of 300. He realized that the answer was incomplete. After asking him to guide his thinking, finally she learned it.

Wawancara selanjutnya dengan student yang bernama Ahmad Fadhuri yang biasa dipanggil Ahmad. Setelah memberikan beberapa pertanyaan basa-basi saya memulai untuk memberikan pertanyaan inti. “Ahmad, ini soal yang kemarin. Dari soal-soal ini ada yang menurutmu sulit?” “ada!”. Ahmad menjawab singkat. “Yang mana?” “hmm yang nomer tiga”. “Ohh, hmm coba baca ulang soal nomer tiga!”. Ahmad membacanya dengan lancar dan jelas. “Dari situ apa yang ditanyakan dalam soal?” Ahmad menjawabnya dengan membaca ulang kalimat yang mengandung pertanyaan. “Oke, sekarang data yang kamu ketahui tuliskan dalam lembar jawab ini!”. Ahmad mengangguk dan segera mengerjakannya. “Ahmad, soal ini bisa diselesaikan dengan cara apa kira-kira?”. “Menggunakan KPK...”. “Kenapa menggunakan KPK? Bisa menjelaskan?” “hmmmm karena..... itu.. ada hari-hari nya biasanya berhubungan dengan KPK” “oke oke, benar. karena berhubungan dengan kelipatan hari, iya kan?” “Iya”. “Sekarang coba kamu selesaikan soalnya”. Setelah kira-kira dua menit, Ahmad terlihat terhenti dengan pekerjaannya. “Sudah selesai?”. Dia mengangguk ragu. “apa jawabannya?” “300” “300 itu apa?” “hmm 300 KPKnya?” “Kamu cermati ulang coba pertanyaannya? pertanyaannya apa?” “berapa kali seno menabung akan bertemu dengan kedua temannya?”. “Jawabannya?” “300 kali”. “Yakin? kali apa hari?” Ahmad menjawab “Berapa kali?” “Berarti jawabannya?” “300 kali”. dari sini Ahmad tidak menyadari titik kesalahannya bahwa sebenarnya ada langkah selanjutnya untuk menyelesaikan soal. maka saya menjelaskan tentang kesalahan itu⁵².

Based on the data, Ahmad got misconception in the “carry out the plan” step. It can be known by his unknowing when the researcher asked to what she answered. Then, when the researcher tried to give the clue, he was still in the wrong learning.

Wawancara selanjutnya dilakukan dengan Muhamad Rafli yang biasa dipanggil dengan Rafli. Setelah berbincang ringan dengan Rafli untuk mencairkan suasana, saya mulai masuk ke inti

⁵² Wawancara dengan Ahmad Fadhuri, siswa kelas IV SD Negeri 01 Blayu, tanggal 27 Mei 2017

pembicaraan. “Rafli, kemarin masih ingat ya dengan soal yang dikerjakan? ini soalnya. Dari soal ini yang menurut Rafli paling sulit soal yang nomer berapa?”. Rafli mulai memeriksa soal yang sekarang ada dihadapannya. Setelah beberapa saat, Rafli memilih soal nomer dua. “Oke, Rafli sekarang coba dibaca lagi soal nomer duanya”. Rafli mengangguk pelan dan segera membaca soal nomer dua yang telah dipilihnya. Rafli membacanya dengan lambat tapi cukup jelas. “Rafli dari soal yang barusan kamu baca, kira-kira inti dari pertanyaannya apa sih?”. “hmm bertemu setelah berapa hari?” “Oke benar, “sekarang data yang kamu ketahui dari soal itu apa saja?”. Rafli terlihat memeriksa kembali lembar soal kemudian menjawab “15 hari bu leni”. “Ada lagi?” “10 hari bu mira”. “Ada lagi?” “sudah”. “ Oke sekarang kamu tulis dalam kertas ini”. Setelah Rafli selesai menuliskan jawabannya saya melanjutkannya dengan pertanyaan berikutnya “Rafli, dari yang sudah kamu ketahui baik itu yang ditanyakan dan data yang kamu tulis kira-kira cara penyelesaiannya menggunakan apa? KPK atau FPB”. “KPK?” dia berusaha menanyakan kembali jawabannya. “Kenapa menggunakan operasi KPK?”. Rafli tersenyum dan menggelengkan kepala. “lha terus barusan menjawab KPK itu pertimbangannya apa? atau alasannya tiba-tiba memilih KPK itu kenapa?” “Hehe hanya menebak-nebak saja”. Dari sini Rafli belum memahami soal mana yang menggunakan KPK dan mana yang menggunakan FPB. Dia menjawabnya hanya dengan menebak-nebak saja meski pada kesempatan kali ini tebakannya benar. Oleh karena itu wawancara dilanjutkan langsung dengan memberikan pemahaman soal yang berhubungan dengan KPK maupun FPB⁵³.

Based in the data, Rafli got misconception in “divising a plan” step. It can be known by interview activity. When he was asked why he used KPK method, he did not know what the answer is. The answer he explained was only predicted answer.

Student terakhir yang diwawancarai bernama Yoania Friska yang biasa dipanggil dengan Friska. Friska adalah student yang mendapatkan skor terendah dalam test tulis. “Friska, ini soal-soal kemarin. coba pilih soal mana yang menurut Friska paling sulit”. Friska hanya mengangguk dan memilih soal yang ada dihadapannya. Friska memberi isyarat dengan telunjuknya ke soal nomer 2 sambil bergumam “yang ini” tapi tanpa mengeluarkan suara. Oke Friska, Coba dibaca soalnya” Friska mengangguk dan

⁵³ Wawancara dengan Muhammad Rafli, siswa kelas IV SD Negeri 01 Blayu, tanggal 27 Mei 2017

membaca pelan, dia tampak tersendat pada beberapa kalimat. “Oke friska, dari soal barusan yang kamu baca apa sih sebenarnya pertanyaannya?” Friska hanya terdiam dan memandangi lembar soal kemudian tangannya memainkan ujung krudungnya. “bagaimana Friska?” dia sedikit menggelengkan kepala dan tampak malu karena tidak memahaminya. Dari sini Friska sudah mengalami miskonsepsi karena dia tidak memahami teks soal yang dia baca. Kemudian saya lanjutkan dengan memberi tahunya dan menjelaskan secara sederhana untuk memahami soal. Langkah ini saya ambil karena, saya nilai Friska sangat pasif ketika diajak untuk diskusi⁵⁴.

The last data showed that Friska got misconception in “understanding the problem” step. It can be known that he was still slow about how to read the question. Moreover, when she was asked what the question is, she only shake her head as the sign of her unknowing.

3. The documentations collected by researcher are 1. The Plan of KPK and FPB material; 2. Student Work Sheet of the fourth grade (class 4) in the first semester; 3. Printed book as the source of student learning in the class; 4. Guide book of teacher in teaching KPK and FPB.

B. THE RESULT

After doing the test, the researcher found where misconception experienced by student in working narrative questions about KPK and FPB places. Based on the test, there is no student get 100 score. It indicates that all students got misconceptions in certain step when they finish narrative narrative.

The data below shows the test data of the fourth grade of SDN 01 Blayu.

No	Score	T
1	0	1 student
2	10	1 student

⁵⁴ Wawancara dengan Yoania Friska, siswa kelas IV SD Negeri 01 Blayu, tanggal 27 Mei 2017

3	20	1 student
4	30	1 student
5	35	1 student
6	40	4 students
7	45	2 students
8	50	2 students
9	60	3 students
10	70	2 students
11	80	1 student
12	85	1 student
13	90	2 students
Jumlah student		22 students

Table 4.2. The test data of student of the fourth grade in SD Negeri 01 Blayu

Based on the above data, the highest data is 90 gotten by two (2) students. The data also shows that there are sixteen (16) students. It shows that misconception in finishing narrative question of KPK and FPB in the fourth grade is high. Then, the students got 70 are six.

To view the score in finishing narrative question in detail, the score data of researched will be explained. Based on the arranged criteria, model of misconception in the first grade of SDN 01 Blayu distributing model. The below data is the test data based on arranged criteria.

No	Assessment Criteria	Question 1	Question 2	Question 3	Question 4
1	Student writing the detected data	21 students	19 students	19 students	20 students
2	Student writing the finishing	20	18	17	19

	question method	students	students	students	students
3	Student determining of finishing question by KPK/FPB	12 students	10 students	4 students	9 students
4	Student answering question by KPK/FPB	6 students	8 students	3 students	5 students
5	Student answering question menjawab with the correct and the right sentence	6 students	5 students	0 student	1 student

Table 4.3. The data of student working the test based on the assessment criteria of writing test

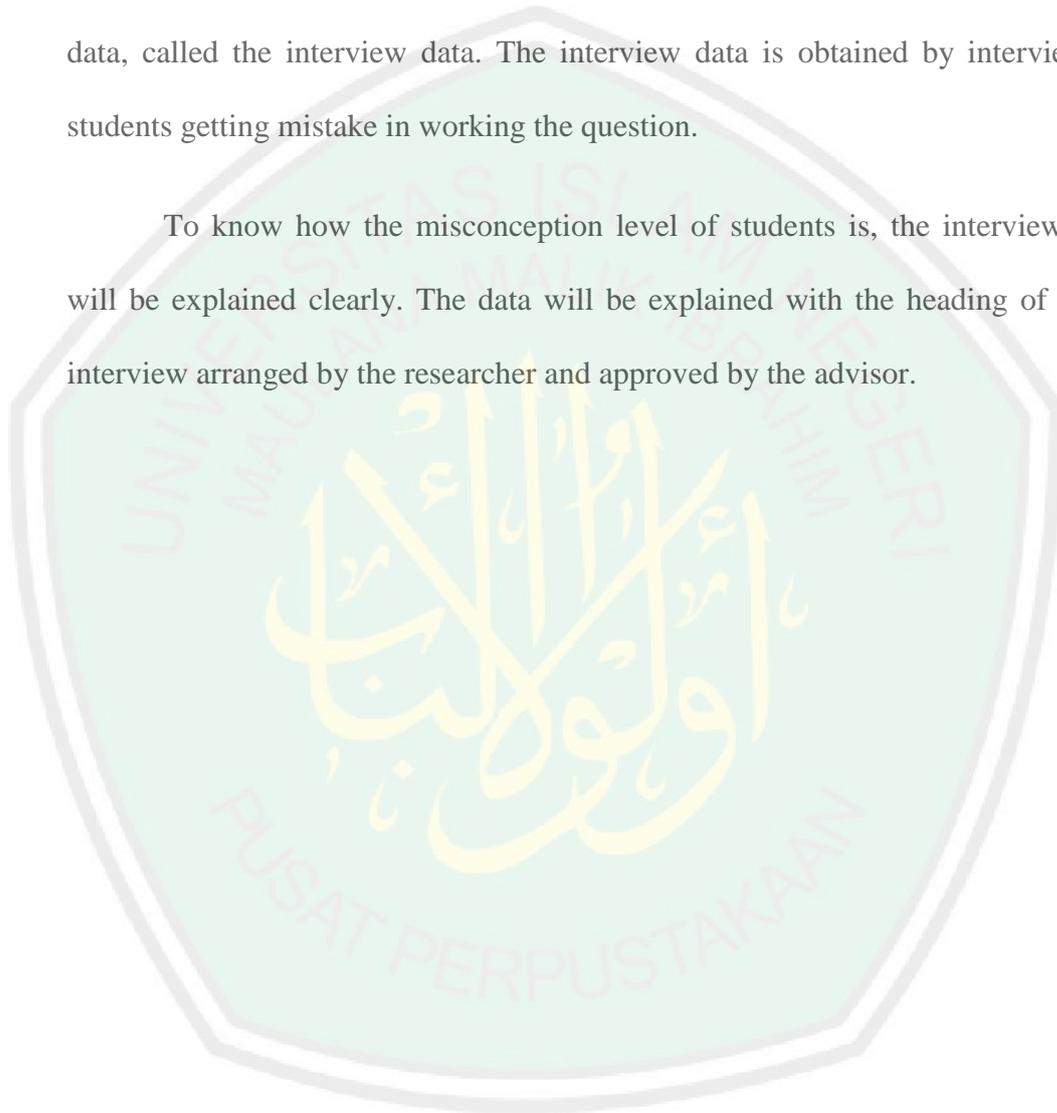
The above table explains that the first criteria is almost done by all students. The detail data of the first criteria is that 21 students in the first question, 19 students in the second students, 19 students in the third question, and 20 students in the fourth question. In the second criteria, there are 20 students in the first question, 18 students in the second students, 17 students in the third question, and 19 students in the fourth question. In the third criteria, there are 12 students determining correctly of finishing question by KPK/FPB in the first question, 10 students in the second students, 4 students in the third question, and 9 students in the fourth question. In the fourth criteria, there are 6 students in the first question, 8 students in the second students, 3 students in the third question, and 5 students in the fourth question. In the last assessment criteria, there are 6 students in the first question, 5 students in the second students, 0 student in the third question, and only 3 students in the fourth question.

It can be known, based on the data, there are decreasing students doing the test based on the assessment criteria in the third and the fourth question. Because the third and the fourth questions are belonged to C3 model which contains

application, students need more comprehension to do. Finally, it can be concluded that only a view students have the deep comprehension.

The above table is used by the researcher to determine obtaining the next data, called the interview data. The interview data is obtained by interviewing students getting mistake in working the question.

To know how the misconception level of students is, the interview data will be explained clearly. The data will be explained with the heading of guide interview arranged by the researcher and approved by the advisor.



No	Name	Questions															
		Understanding the Problem					Devising a Plan			Carry Out the Plan		Looking Back					
Number of Questions		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1	Rafi Aslamuddin Zakaria	F	F	F	F	F	F	C	C	M							
2	Firli Afrian Saputra	F	F	F	F	F	F	C	C	M							
3	Cherys Viola A.	F	F	F	C	C	M										
4	Rangga Rizki Fitriani	F	F	F	C	C	M										
5	Anita Febri Yani	F	F	F	F	F	F	C	C	M							
6	Qutwah Gaida Zahira	F	F	F	C	C	M										
7	Moch. Syamil Ihkamuddin	F	F	F	M												
8	Martha Dewi Olivia	F	F	F	F	F	F	C	F	F	C	M					
9	Syahrul Alfian Azizi	F	F	F	F	F	F	C	F	F	C	M					
10	Andro Vani Maulana	F	F	F	F	F	F	F	F	F	C	M	M	M			
11	Muhammad Riski Afandi	F	F	F	C	C	F	C	C	M	M						
12	Adi Setia Pradana	F	F	F	C	M	M										
13	Norma Amalia	F	F	F	M												
14	Adellia Putri Wardani	F	F	F	C	F	F	C	F	C	M						
15	Nurul Fadhila	F	F	F	C	C	F	C	F	C	M						
16	Lola Dewi Ramdhaniana	F	F	F	M	C	M										
17	Revi Lestari	F	F	F	C	C	M										
18	Dwi Saputra	F	F	F	C	C	M										
19	Dafani Debi Yohana	F	F	F	C	F	F	C	F	F	C	M	M				
20	Ahmad Fadhori	F	F	F	F	F	F	C	C	M							
21	Muhamad Rafli	F	F	F	C	C	M										
22	Yoania Friska	F	F	F	M	M											
23					F=7 C=12	F=9 C=9	F=11 C=0	F=1 C=10	F=6 C=5	F=4 C=2	F=0 C=4	F=0 C=0					

		M=3	M=1	M=8	M=	M=0	M=5	M=2	M=4
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Table 4.4. Interview data



Note : F (good comprehension)

C (enough comprehension)

M (getting misconception/did not understanding)

Based on the above table, in the first and the second question all students understand the difficulties and the mistakes they do. Then, they also can read the questions they regard as the difficult question. So that, the researcher regards that all students learn correctly. In the fourth question, there are 7 students answering what the question want correctly.

While, there are 12 students answer hesitantly and 3 students cannot answer what the question want. In the fifth question, there are 9 students answering the question based on the detected data correctly and 9 students answer incompletely. Moreover, there is a student cannot answering the detected data in the question. In addition, there are 3 students get misconception in the question before so that they cannot continue the next step. In the sixth interview question, explaining how to use KPK/FPB, there are 11 students answer correctly and 8 students answering incorrectly. In the seventh question, there is a student explaining the excuse correctly and illustrate it clearly. While, 10 students can explain the simple excuse but they cannot illustrate it. In the eighth questions, 6 students are able to explain how to finish the question correctly and orderly while 5 students only explain the way how to finish the question incorrectly and unclearly. In the sixth question, containing the command for students to finish question based on the determined step, there are 4 students finish the question

correctly about less than ten minutes and 2 students more than two minutes. While, 5 students are wrong in finish question. In the tenth question, there is no student answer the question correctly and simply. Only answer and finish 4 students with correctly but they are also confused, and 2 students are wrong. In this question, from the fourth students answering and finishing question until the end of step, all of them are wrong in answering question by using correct sentence based on the question in narrative question. It is indicated that all students get misconceptions in the last step of narrative question of Polya. AS the result, the interview cannot continue to the next questions because they get misconceptions and are mistakes in the last question.

Based on the above data, the researcher divide misconception of students of the fifth grade in the data below:

No	Step of finishing Polya	The students getting misconception
1	Step of understanding the problem	5 students
2	Step of devising a plan	6 students
3	Step of carry out the plan	7 students
4	Step of looking back	4 students

Table 4.5. The interview data of student misconception in doing the narrative question based on step of finishing narrative question of Polya

The above data explains that students get misconceptions when they answer narrative question in each step of finishing question. While, students getting misconception in “devising a plan” step are 6 students. Then, students getting misconception in “carry out the plan” step are also 7 students. Students getting misconceptions in “looking back” step are only 4 students.



CHAPTER V

DISCUSSION

D. Identification of the mistakes made by students in solving word problem in material least common multiple and greatest Common factor

To identify the location of student error in solving the story problem, we will see the data of the student test result. From the data obtained in the field, we understand that the highest score of students is 90. Total of students whose score 60 and up to it is only 9 children or as 40.9%. It means that students whose score under 60 are 13 children or 59.1%. These percentages indicate that the level of students understanding is very low because more than 50% of students get a score under 60. To find out the location of student error in doing test questions, we will see the table of scores of students.

From table of the test score, we can find a little process when students commit a test. Most of student wrote data in the test. Therefore, we can assume that students understand their problem. Furthermore, the number of students who wrote how to solve the problem is less than the number of students who write the data. It means that students' understanding in this phase is much less. When we look at the next assessment rubric, students meeting the criteria continue to experience a decrease in each test number. Then we can draw the conclusion that students have misconception in certain stages in solving the problem. Looking at the two tables above, it is proof that all the students took the written test experienced misconceptions. It appropriates with description by Cristhpher R.

Rakes that misconception also includes procedural error in the improvement of theory⁵⁵

The results of tables in the form of different numbers in each number, certainly the misconception occurs in each student is also different. To find out specifically the location of students' misconceptions in working on the story test, we need to review directly how the process of students working in the test. Therefore the next stage we will see the results of interview committed to students who make mistake in finishing the story test.

To identify the location of student's misconceptions in solving the story test of mathematical about smallest commonwealth alliance (LCM) and the largest partnership factor (GCF), the researcher will review the results of interviews with the students when solving the story problem. From the results of interviews to each student who experienced errors in solving the story, the results obtained differently. In identifying the location of these students' misconceptions, the researcher will employ the Polya story-solving stage referring to Mathematic book for elemethary teacher: a conceptual approach written by Albert B Bennet, Jr. and L. Ted Nelson.

The first student chooses 4th number question. In the understanding the problem, from the interview result, this student has been able to write the data and able to write what is asked in the question. Then, this student is considered have understood the text about the story. the second stage is devising a plan, a student

⁵⁵ Cristopher R. Rakes, *Misconception in Rational Number, Probability, Algebra, and Geometry*. Jurnal ProQuest LLC. UMI Number 3415205 May 2010.

has been able to determine how to solve the problem using GCF. He also understood why using GCF in solving the problem number four. The third stage of carry out the plan students begin to experience errors. The student's answer is wrong. He is only able to work to find GCF. The final answer from the students is wrong. Therefore, students first experience misconceptions in the carry out plan. By looking at the polya completion stage, it is evident that the first student experiences misconceptions at the carry out the plan stage because he is unable to complete the planning correctly⁵⁶

The 2nd student chose 4th number in the interview. We will identify the second student during the story-solving process. In the understanding the problem stage, we will see a snippet of the interview with the second student.

“Bagus, dari soal nomer 4, apasih yang ditanyakan dalam soal tersebut?” “berapa banyak kue sus yang ada dalam setiap kotak?” dia menjawabnya sambil membaca tulisan yang tertera di dalam soal. “oke, dari soal tersebut apa saja data yang diketahui?” “ada 36 kue coklat, ada 42 kue donat, ada 60 kue sus!”

From citation of the interview above, the 2nd students has been able to convey the essence of the problem in the matter. In addition, the 2nd student can also mention the complete data in the matter. So, we conclude that the second student is able to understand the problem in the matter well. The next stage is a devising a plan, From the question number 4 which is selected by the second student, he was able to determine the exact solution of the problem. He is also

⁵⁶ Albert B Bennet and L. Ted Nelson, *Mathematics for Elemetary Teachers, a Conceptual Approach*.(New York: McGraw-Hill, 2004) page. 241

able to mention the reasons for using the step correctly. As in the following interview.

“ dari soal itu, kira-kira soal tersebut berhubungan dengan LCM atau GCF?” “GCF!”. “Kenapa?”. Dia mencoba menjelaskan kenapa dia menjawab berhubungan dengan GCF. Dia menggigit bibir bagian bawahnya tanda berpikir keras. “hmmm, karan kue...” “kenapa kue?” dia hanya bisa membalasnya dengan meringis tidak bisa menjelaskannya. “oke, boleh juga” saya membenarkan alasannya. “kalau berhubungan dengan GCF penyelesaiannya dengan cara apa?” “dengan membagi-bagikan”

As shown in the above interview quotes, a student is able to solve the problem correctly. Furthermore, the carrying out the plan stage, a student is considered passing the carrying out stage of the plan if he is able to solve the problem correctly in accordance with the request questions. He was able to complete the planned completion of the planned problem at the beginning. In this stage the second student made a mistake because the answer did not match the request question. The second student is only able to mention the results of GCF. He was confused when connected with questions in the matter. Finally he was wrong in mentioning sentences related to the matter. From here the second student misconception. Therefore the second student expressed misconception at the stage of carrying out the plan. This is in accordance with the solution of the Polya story that is this student has an error in the carrying out the plan because the student is unable to properly say the final answer⁵⁷.

The 3rd student's score is 50 in the written test. We will identify how the third student solves the problem in the interview session. The first stage of

⁵⁷ *Ibid.*

understanding the problem, the third student has difficulty in understanding the problem. We can see the following interview quotes.

Dia mulai membacanya dengan pelan, Suaranya pelan hingga saya harus mendekat. “dari soal tersebut, apa yang ditanyakan?” Di melihat kembali pada soal. Tampaknya dia bingung untuk mengatakan apa yang dijawab dalam soal. Dia tampak berpikir keras kemudian dia menjawab dengan lirih “Bu Leni dan Bu mira bertemu setelah?...”. “Setelah itu data apa yang kamu ketahui dari soal nomer dua?”. Dari pertanyaan itu, dia tampak membaca kembali soal di hadapannya dan tampak sangat bingung. Kemudian saya memperjelas pertanyaan saya. “data itu biasanya yang berupa angka-angka yang penting dalam soal” saya berusaha memahamkan dia, barangkali dia belum faham apa itu data dalam soal matematika. “lima belas” dia menjawabnya dengan singkat dan ragu, “iya terus?” “sepuluh”.

In the above quotation, the third student must read repeatedly to answer any questions related to the matter. He also seemed confused by the data because he lacked the meaning of numbers in the matter. When mentioning the question in question, the third student presents it with a less obvious sentence. He delivered it by decapitating the sentence in a less precise question. This means that the third student does not understand the question in question. From this explanation, the third student experiences misconception in the early stages of understanding the problem. So the results of this interview shows results that are in accordance with Polya problem solving which is that this student has a difficulty in understanding the story⁵⁸.

The 4th student interviewed chose to solve the problem of number 4. The result of the test is 35. At the understanding stage a problem, the fourth student answered the core questions in the test. He was able to read the question sentences

⁵⁸ *Ibid.*

in the question correctly. He was also able to mention the data in the question completely and correctly. Then the fourth student is considered able to understand the problem in the matter well. In the next stage of devising a plan, students experience confusion. We will consider the following interview result.

“Dari pertanyaan itu dan data yang kamu ketahui kira-kira soal ini berhubungan dengan apa? LCM atau GCF?”. Dia mulai berpikir keras, melihat kembali soal yang diberikan. kemudian menjawabnya dengan ragu “LCM?”. Saya tersenyum simpul dan menanyakan kembali “yakin LCM?” “GCF” dia muali bingung dengan mengganti jawabannya.

In the above interview, the 4th student was not able to mention planning of the completion correctly. The answer given is inconsistent because he is confused to give the settlement step. The first answer is wrong, when the researcher tried to convince the answer, the fourth student replaced the answer. The answer given was conveyed with doubt. When the 4th student was asked the reason for choosing an answer, the 4th student just shook his head as a sign that is he did not know it. From this analysis the 4th student experienced misconception in the early stages of understanding the problem. This conclusion is in accordance with the error that occurred at the initial stage in solving the problem Polya namely students are not able to understand the data in the problem and the meaning of existing data⁵⁹.

The 5th student interviewed gained score 45 in a written test. So we need to identify the location of misconception that happened. Within an interview process with the fifth student, he was able to name the core question in the matter.

⁵⁹ *Ibid.*

He was also able to mention the data in the question completely and correctly. Then the fifth student is considered to have escaped in the understanding the problem. The next stage is devising a plan. At this stage the fifth student was able to name the problem solving step correctly. The fifth student was able to answer with confidence without hesitation. He was also able to determine the first steps that he must take to solve the problem. The next stage is the implementation of the planning. The fifth student has an error at this stage. Let's check this interview with the following students out.

“...dia menyerahkan hasil jawabannya. “Sudah?, Yakin sudah selesai?”. Dia mengangguk mantap. “Oke, dari jawabanmu ini 36?” “hmmm” dia mengangguk mulai ragu dengan jawabannya. “36 ini apa? hasil dari GCF?” Dia mengangguk kembali. “Oke Ita, trus angka 6 ini apa?” karena dia menjawab nya 36 dan 6 dengan menulisnya secara bersusun sehingga saya harus menanyakan angka 6 juga. Ita meresponnya dengan berpikir keras. Dia melihat kembali hasil jawabannya dengan seksama. “oh, GCF nya 6” dia meralat jawabannya.

In the above interview quotation, the fifth student experienced an error in writing the answer. He seemed wrote two different answers written in arrangement. When he is asked by the numbers he wrote, he was confused. To confirm the explanation of the two numbers, he should rethink. After he determined the number used as the answer, the answer was wrong. The answer he gave does not match the required questions. He was only right in finding the GCF value of the matter. But what is asked in the question is not the value of GCF. Then the answer is wrong. From this explanation, the fifth student is considered having misconception in carrying out stage of the plan. When looking at the polya

problem solving stage then the conclusion is appropriate because the student is wrong or having problems in the stage of completing the planning⁶⁰.

The 6th student has scores 60 on a written test. There was uniqueness in the sixth student's written test. He answered all questions using GCF. There is an assumption that the 6th student only understood GCF material, not LCM. It can be seen from the test results where the problems related to GCF gained the highest score compared to problems related to the LCM. So the researcher will identify the misconception of the 6th student in working on the problems related to LCM. Within understanding the problem stage, the 6th student was able to understand the essence of the problem in the matter correctly. He was also able to mention the data contained in the problem completely and correctly. The next stage is devising a plan. At this stage the 6th student made mistakes. As we saw in the test that he did all thing in GCF way as well as when interviewing, he chose the solution by means of GCF. Here is a citation of an interview with the 6th student.

“....soal ini berhubungan dengan apa?”. Zahira berpikir sejenak dan menjawab “GCF?” dia mencoba untuk menanyakan kembali jawabannya. “Kenapa kog GCF?”. Dia hanya bisa tersenyum dan menggelengkan kepala.

From the above interview, it is evident that the sixth student only understood the problem solving using GCF. He assumed when there was a matter of story about factor and multiplier is related to GCF. He also did not understand why it should be solved with GCF. So he was wrong in planning the solution of the problem. From this explanation, the 6th student experienced misconception at

⁶⁰ *Ibid.*

the devising a plan stage. In the devising a plan stage, the sixth student planned problem solving by simplifying the problem. In addition, in this stage the student also showed the first step and further in solving the story. Therefore, the conclusion lies the misconception experienced by the 6th student is right which is in the stage of devising a plan⁶¹.

The 7th student earned the same grade as the previous student. A score of 60 was obtained in a written test. Judging from the answer sheet of test written belonging to the seventh student, phenomena happened is the same as the previous students. He answered all questions in the same way that is using GCF. All number was done using GCF although the real question must be solved with the LCM. Within the interview process with the seventh student, he was actually quite familiar with the content of the matter. He was able to name the core questions of the problem, he was also able to mention the data contained in the matter though had to pass a little explanation. In the planning stage, the seventh student was wrong when he mentioned the answer. As in the following interview quote below.

“....soal ini dapat diselesaikan dengan apa?”. “GCF?” dia menjawabnya asal dan mencoba menanyakan kembali jawabannya”.

The 7th student hesitated in giving answers. It appeared when he gave the answer. He answered it with a questioning tone because he doubted the answer. In addition, the answer was also wrong. Therefore, the seventh student experienced misconceptions at the devising a plan stage. It shows that in the devising the

⁶¹ *Ibid.*

planning stage, students should be able to simplify the problem and then determine the settlement step⁶².

The 8th student had a high score enough in a written test that was 70. This value was quite high when it is compared to the other students whose score below 60. However, the value of 70 was not the perfect score in which the 8th student still made a mistake in working on the problem. Therefore, the researcher tried to identify the location of the mistake he did. At the interview process, the 8th student chose an easy question. So until the end of the process of work, there was no obstacle. Therefore the researcher tried it with a more difficult problem category. In the early stages, understanding the problem students have been able to mention the contents of the questions in the question. He is also able to mention the data in the matter correctly and completely. The next stage is the division plan, at this stage, the 8th student is also able to mention the problem solving plan correctly. He also understands which one a problem needs to be resolved with the LCM and a problem needs finished by using GCF. The next stage is the carrying out the plan. The 8th student was able to do it well. He has been able to choose the prime number to use. Until the final stage he could also finish it well. For the second sola tested with the 8th student, he encountered confusion in the final stage of looking back. Let's look at a snippet of the interview with the 8th student.

“Coba sekarang kamu jawab menggunakan kalimat yang sesuai dengan pertanyaan soal”. “Jadi, seno butuh 300 kali untuk bertemu dengan kedua temannya”. “kamu yakin dengan jawabanmu?” Martha tersenyum dan menggelengkan kepala. “sekarang kamu perhatikan lagi soalnya,

⁶² *Ibid.*

angka hasil LCM yang 300 ini hari apa kali?”. Dia mulai berpikir kembali kemudian menjawab “hari”. iya kalau hari berarti butuh berapa kali?”. Martha menggelengkan kepala. Saya masih menunggu banrangkali Martah masih berusaha untuk menjawabnya. “hmmmm 300 dibagi”. “ya benar, dibagi dengan apa?”

From the above interview quote, we can understand that the 8th student understand the problem and mistake even though it must be with a few words inducement. He was able to find solution to his mistakes. He just has lack of understanding in communicating answer with queries. After being asked by a stimulus question, the 8th student was able to answer it correctly. Therefore, we know that the 8th student experienced misconception at the looking back stage. This conclusion is in accordance with the explanation in the solution of the problem based on the polya story solving phase. In the stage of looking back, the student should be able to communicate each data with the final answer⁶³

The 9th student in a written test gained a score of 40. Because the value is low then the researcher needed to identify the location of misconception on the 9th student. In Understanding the problem Phase, The 9th student has been able to mention the question that is on the problem. besides, the ninth student was also able to mention correctly and completely the data contained in the problem. The next stage is devising a plan, the 9th student was able to determine the solution step of the problem. He was able to choose the right step. in addition, he was also able to provide a logical reason in determining the settlement step. The next stage is carrying out the plan. At this stage, the ninth student has been able to work properly according to the steps specified. The last stage is looking back. At this

⁶³ *Ibid.*

stage, the 9th student started to encounter errors. Please notice the following interview quote.

Syahrul berpikir sejenak sebelum menyebutkan hasil pekerjaannya. “300?” dia mencoba untuk menanyakan jawabannya. “Yakin??” saya menimpali. kemudian tampak Syahrul memikirkan kembali jawabannya. “300 itu apa?” “LCM nya” Syahrul menimpali secara langsung. “berarti 300 itu keterangannya apa kalau dihubungkan dengan pertanyaan dalam soal?”. Syahrul mulai menggaruk kepalanya untuk berpikir lebih keras. “Hari?” Syahrul bertanya kepada saya. “Ya, benar. Sedangkan yang ditanyakan?” “Kali” dia menjawab dengan pasti. “Berarti?” “hhmmm 300 dibagikan 15?”.

The interview quotation above showed that the 9th student has understood the problem in the answer. He mentioned the answer by hesitation. Once confirmed, he began to realize the mistakes he made. When he was asked to look again at what was asked in the question, the 9th student began to understand what should to do with the answer. Therefore, he experienced misconception in the last stage of looking back. This is in accordance with the explanation of problem solving based on Polya problem solving stage. The 9th student has trouble in understanding the conclusion of the answer which is he has found⁶⁴

The 10th student scores 85 in a written test. The value achieved was quite high, but the value still indicates if the 10th student has a misconception at a certain stage when working on the story. In the interview process, the student chose an easy category of questions. Therefore, in the interview process, the 10th student did not experience any problem. When I reviewed the problem he chose in a written test, he did the right thing for the same problem. From here, there was an

⁶⁴ *Ibid.*

indication that the student is lying that the problem he chooses is a difficult question. Furthermore, the researcher asked the student to work on the other problems that have a higher difficulty level. Let's identify the way of the 10th student did this. The first stage is understanding the problem. At this stage, the 10th student has been able to correctly query the question. He was also able to mention the data contained in the problem correctly and completely. In the next stage of devising a plan, the 10th student is able to name the problem-solving steps appropriately. He also understood the reasons for the choice of the solution method. The next stage is carrying out the plan. At this stage, the student is also able to perform each stage of completion correctly. In the last stage of looking back, the student began to experience confusion. Please consider the following interview quotes.

“Jawabannya apa Andro?” “setelah 300 hari mereka akan bertemu”. “hmm ya ya, coba kamu baca sekali lagi soal nomer 3”. Andro kemudian membacanya dengan lancar dan jelas. “Berarti apa yang ditanyakan disitu?”. “Hmmm berapa kali?” dia menjawabnya dengan ragu. Sepertinya dia merasa ada kesalahan. “iya berarti berapa kali menabung agar bertemu?”. “Hhmm” dia terlihat berpikir keras. “tahu caranya?”. Dia menganggukan kepala, “iyaa”. “Gimana caranya?”. “300 dibagi.... 15”.

In this stage, the 10th student has an error. He thought the answer was correct. But after he was asked to double-check with the initial question, he began to realize his mistake. After he was asked again about the answer, he was able to answer it correctly. From this description it means that the 10th student has misconception at the looking back stage. At the stage of looking back, the student should be able to communicate the final answer with the data in the matter. So the

conclusion is in accordance with the polya problem solving stage because the student has an understanding problem in communicating with the problem data⁶⁵.

The 11th student scores 40 in a written test. The value was relatively low therefore needed to be done to identify the location of misconception which was done. The first stage of understanding the problem, the 11th student was able to determine the core question in the matter. In addition he was also able to determine the important data needed for problem solving. He could also mention it completely and correctly. The next stage was devising a plan. The 11th student was able to determine the correct troubleshooting steps. He was also able to provide the reasons for the problem solving he chose. The next stage was carrying out the plan. In this stage, the 11th student encountered obstacles. Notice the following interview quote

“Sudah selesai?” Riski menggelengkan kepala sambil menyodorkan kertas jawabannya. Tampaknya dia menyerah dengan pekerjaannya. “hmm ini sudah benar, setelah ini diapakan?” “dikali”. “Bagus, angka manasaja yang dikalikan?” “angka ini dan ini”. Dia melingkari dua angka prima, 2 dan 5. “Yakin??” Riski menjawabnya dengan menggeleng kepala.

From the interview data above, the 11th student encountered obstacles. He was not able to complete the problem-solving plan. He was perplexed to continue with the steps he had chosen to find the final answer. From here, the 11th student indicated has misconception at the stage of carrying out the plan. It was not in line with Polya's problem-solving step that required the student to solve the problem

⁶⁵ *Ibid.*

with a planning he was making. So the conclusion is that misconception of the 11th student is correct.

The 12nd students interviewed scored 30 on the written test. From the answer he did, the 12nd student was still weak in the calculation of the division. It could be seen from the answer sheet filled with the calculation of the division by the number 2. We will identify deeper the 12th student in working on the story. At the stage of understanding, 12nd student has been able to determine the data contained in the problem completely and correctly. In addition, he was also able to determine the core question about the story. Therefore, the 12th student was considered having understanding the problem in the matter. The next stage is the dividing a plan. In this stage, the 12th student had difficulty. Let's look at the following interview fragment.

“...Kira-kira soal ini bisa diselesaikan dengan cara apa?”. Adi berpikir lagi dan menjawabnya asal “LCM” “kenapa LCM?”. Adi menggelengkan kepala.

From the above interview result, it shows that the 12nd student's misconception is located at the dividing a plan stage. He was unable to determine the problem-solving step. It was proven by his answer which was wrong. He also did not understand which one question that has to be solved with the LCM and a question that should be solved using GCF. At the dividing a plan stage, the student committed a problem solving by simplifying the problem in question. So this student misconception at the stage of dividing plan was in accordance with the stage of polya problem solving analysis.

The 13rd student scored 60 on a written test. This value was pretty good because it was up to average. After being identified, the location of misconceptions experienced by the 13rd student was unexpected. In the first stage of understanding the problem, the 13rd student could not name core of the question. Please consider the following interview quotes.

“...dari soal ini apasih yang ditanyakan?” Norma tersenyum kecut dan menggelengkan kepala. kelihatannya dia mudah sekali menyerah. Kemudian saya memintanya membacanya kembali soal nomer dua. Setelah membacanya dengan pelan dan menggelengkan kepala. “biasanya pertanyaan itu kalimat yang ada titik titiknya!” saya memberikan klu lain barangkali dia akan memahaminya. Norma hanya menjawab “setelah ... hari?”

The 13rd student shook his head clearly not knowing the answer. The answer he gave was less precise when quoting sentences in the matter. In the answer sheet, he was only able to write the data in the matter with less explanatory information. From the above interview, the 13th student was considered having misconception in the first stage of understanding the problem. In this first stage students should be able to interpret the meaning of the data contained in the problem and understand the problems that exist in the matter. Then the conclusion of misconception at the stage of understanding the problem that this is in accordance with the stage of solving the problem Polya. The result of this interview is quite contrary to the value of the test obtained. The 13th student scored high enough in a written test but in the interview stage he experienced misconception at the understanding stage. There were several possible factors. First, the 13rd student cheated in a written test because the supervision was a bit loose. In addition, the sitting position in groups made it

easier for the child to see the answer sheet belonging to a friend of his group. Secondly, the 13rd student when interviewed in bad condition so that he was lazy to follow the flow of questions. It could be seen in interview result that the 13rd student was easily given up with the questions given.

The 14th student earned the highest score in a written test of 90. Although the highest score was obtained, the 14th student still made a mistake in doing the test. Then look at the identification of errors made by the 14th student below. The understanding the problem stage, the 14th student was able to mention the core question in the story. In addition, he was also able to mention the data in the matter completely and correctly. The second stage of devising the planning, the 14th student was able to determine the problem solving step correctly. He also understood the reason for choosing the method of settlement of the problem. The third stage is carrying out the planning. The 14th student was able to complete the problem plan well. But in this stage the steps he performed were not so perfect that the final answer he gave was wrong. Here's an excerpt from an interview with the 14th student.

“Jawabannya berapa kali?” “300 kali” dia menjawabnya dengan yakin. “yakin 300 kali?” dia menganggukkan kepala.

From the interview result above, the 14th student was confident with the answer he gave. Though the answer given was wrong, the answer given was the LCM results from existing data. Question in question was not LCM but related to LCM. Since the 14th student is unaware of his mistake, he was declared to be misconcepting in the carrying out the planning stage. Looking at the Polya

completion stage at carrying out the planning stage, the student should be able to solve the problem correctly based on the planned settlement step. Then the conclusion is the student experienced misconception at the stage of carrying out the planning, it is appropriate because the student has errors in the stage of carrying out the planning.

The 15th student interviewed scored 80 on a written test. Because the resulting value was not perfect then the 15th student was considered still misconception in a certain stage. Here is the identification of the completion of the story by the 15th student. In the understanding the problem, the 15th student was able to name the core question in the story. He was also able to mention the data in the matter correctly and completely. Then the 15th student was considered able to understand the problem well. The next stage is devising a plan. In this stage, the 15th student was able to name the problem solving step correctly. In the next stage of carrying out the planning, the student was able to do the completion step correctly. But the step he did is not complete.

“Berapa Dhila jawabannya?”. “300”. “iya 300 apa?”, “300 hari”. “Iha yang ditanyakan tadi apa?” “hmmm kali...!”. “Berarti jawabannya?” dhila mulai bingung dengan jawabannya dan berusaha untuk berpikir keras. Kemudian dia menjawab “tapi yang 300 ini hari”. “Bagus, berarti untuk mencari berapa kali 300 hari itu diapakan?” Dhila mulai berpikir kembali. sesaat kemudian dia menggelengkan kepala.

From the answer given, the 15th student only mentioned the results of the LCM from existing data. The problem was that he believed that the LCM result was the answer of the question. After being convinced with the answer, he was aware of his mistake that there were still more steps to resolve the matter.

Therefore, the error experienced by the 15th student lied in the stage of working on problem solving planning. Therefore, the 15th student's misconception is located at carrying out the planning stage. This conclusion is precisely by looking at the polya problem solving stage because the 15th student did not meet the criteria⁶⁶

The 16th student scored 45 in the written test. This value was relatively low then this student was considered misconception at a certain stage in working on the story. The first stage of understanding the problem, these students experienced confusion. Here's an excerpt from an interview with the 16th student.

. “Dari soal ini sebenarnya yang ditanyakan apa sih?”. Lola terdiam memperhatikan soal, kemudian badannya bergerak-gerak tidak tidak nyaman. Respon Lola selanjutnya adalah hanya memandang saya dan terdiam. Saya memintanya untuk menuliskan pertanyaan dalam soal di selembar kertas, barangkali dia akan lebih mudah karena kesulitan jika menggunakan bahasa verbal. “Jadi yang ditanyakan dalam soal ini apa coba kamu tulis di kertas ini”. Dia hanya mengangguk sebentar dan menuliskannya di kertas. Setelah Lola menuliskannya dalam kertas saya lihat hasil pekerjaannya. Lola menuliskan kalimat yang tidak ada unsur pertanyaannya. Dia menulis “Di depo minum air “segar””.

From the interview result above, it appeared that the 16th student was very confused with the story. He wrote sentence which was not related to question in the test. This student was confused by the problem he read. Therefore, this student was considered having misconception in understanding of the problem stage. This conclusion is appropriate because the student was not able to interpret the meaning of the data and problem that existed in the matter⁶⁷

⁶⁶ *Ibid.*

⁶⁷ *Ibid.*

The 17th student interviewed scored 80 in the written test. This value was the highest score of all student at the writing test. But from that value, it be indicated the misconception happened because the value was not perfect. Here is the identification of the 17th student in working on the story. The first stage is understanding the problem. The student was able to name the core questions in the matter. In addition, he was also able to mention the data in the problem completely and correctly. The second stage is divising a plan. This student was having problem with the story-solving planning. Here is a fragment of the interview with the 17th student.

“....bagaimana cara yang bisa digunakan untuk menyelesaikan soal ini. Revi menjawabnya dengan GCF. “Kenapa menggunakan GCF?” Revi hanya menggelengkan kepala.

From the interview result above, the 17th student was wrong in determining the problem solving step. He did not understand what should to do with the LCM and what should to do with the GCF. Judging from the test score, we obtained quite contrary to the result of interview. In the matter of the test, this student got a high enough value while in the interview stage, the student was experiencing confusion in the planning stage. Therefore, the researcher tried to re-examine the result of the 17th student’s test. Judging from the answer sheet of the test question, this student was indicated to be cheating on the test. It can be seen in the answer which there was a mismatch of way with the planning. In the answer, he wrote the GCF result, on another way, the LCM was used. When looking at the other question related to GCF he did the right thing using the GCF solution. In addition, another question relating to the LCM he completed in a way that was

very different from other ways. From this explanation, the researcher employed the data result of the way to determine the location of misconception. Therefore, the 17th student's misconception was located at the dividing a planning stage. This conclusion is correct when looking at the stage of completion of the story of Polya, because the student was not able to simplify the problem in the matter to find a solution for finishing the existing problems⁶⁸

The 18th student interviewed earned a score of 10 in the written test. The value was very low. So we need to identify the location of misconceptions in doing the story. After knowing the value obtained by the 18th student, let us consider the data of interview with the 18th student as follows.

“Sudah faham dengan soalnya?” Dwi hanya diam saja dan mencoba paham dengan melihat dengan saksama pada lembar soal. “hmm yang ditanyakan dalam soal itu apa sih?” “Mereka bertemu setelah titik hari”. Dwi menjawabnya dengan membaca teks pertanyaan pada soal. *dan* “Oke kalau begitu soal ini bisa diselesaikan dengan cara apa?” “GCF” Dwi menjawab singkat dengan asal-asalan. “Tau kenapa menggunakan GCF?” “hehe tidak tau”

From the interview result above of understanding the problem stage, the 18th student quite understood the story read although it took a longer time. Although he cited the sentence with less completion but this student already understood what is the question in the matter. In addition, this student was also able to mention the data in the question completely and correctly even though the information was submitted in bits and pieces. So this student was considered enough to understand the matter read.

⁶⁸ *Ibid.*

In the next stage of division a planning, as we know in the interview quotation above, this student had a problem. He mentioned the answer randomly. The answer he gave was wrong. He also explicitly conveyed his ignorance of the choice of problem solving in the matter of the story. Therefore, the 18th student was considered having misconception at the divising a plan stage. This conclusion is correct when looking at the stage of completion of the story of Polya, because the student was not able to simplify the problem in the matter to find a solution for finishing the existing problems⁶⁹

The 19th student interviewed scored 20 on a written test. There was an uniqueness of the data obtained from this student. When observing at a glance there was a conflict of data between the test data and interview data. Please look at identification of the following story solving done by the 19th student.

In the understanding of the problem stage, the 19th student quite understood problem of the story he did. He was able to read core sentence of the question in the test correctly. In addition, this student was also able to mention the data contained in the problem completely and correctly. In the next stage of division a planning, this student was also able to plan the problem solving well. He also quite understood the reason for the choice of solving the problem step although only using one of characteristic of the problem. In the carrying out the planing, the student was able to solve the problem well in accordance with the problem solving planning. Notice the following interview quotes.

⁶⁹ *Ibid.*

“Oke Dafa, berapa hasil akhirnya?” “300?”. “Yakin jawabannya 300? apasih 300 itu?” “LCM nya!”. “Oke benar itu LCMnya, kalau itu PKP nya, coba perhatikan soalnya! 300 itu hari apa kali?” “Hari...”. “Trus soalnya tadi menanyakan hari apa kali?”. “Kali..”. “Berarti gimana cara mencari agar menemukan kali?”. “Dibagi?” “Iya benar, dibagi dengan Angka berapa?” “15”. “Iya, Bagus, Berarti hasilnya?” “20 kali”

From the interview result above, we can understand that the result he got was wrong because he only worked to find the LCM only. However, this student was aware of the imperfection of his work. He knew if the number he got was not the final answer. Therefore, this student was considered capable of performing the problem solving planning well. From the explanation, the 19th student was considered having misconception at the stage of looking back. It was evident when the researcher tried to relate the answer to the original question. He was able to understand shortcoming of the problem solving step. He was also easily able to answer correctly after being given stimulus question. From result of this interview, the result was very low on the written test. Therefore, the researcher tried to review this answer sheet of the student on the write test. From result of the review, this student turned out to include students who are lazy to write many explanations. He only wrote the final answer of each question. Therefore, in each question he only earned a zero point and a maximum of two. Because assessment of the writing test based on the rubric assessment has been made then the value obtained by the student was not maximal because the answer only meets one to two criteria in the assessment rubric. From conclusion of this review is this student experienced misconception at the stage of looking back. This conclusion

is based on Polya's problem solving which requires students to understand the data relationship in the matter with the answer they have found⁷⁰

The 20th student interviewed scored 70 on a written test. The value obtained was quite high. But, that value still allowed the student to experience misconception because of imperfect value. Please notice the following problem solving analysis.

The first stage of understanding the problem, the 20th student was able to correctly and complete the data contained in the story. He was also able to convey the core question in the matter well and correctly. The next stage is devising the planning. In this stage, the 20th student was able to plan the problem solving correctly. He also understood the reason for taking the settlement step. The next stage is carrying out the planning. This stage required the student to be able to solve the story in accordance with the planning that has been determined correctly. At this stage, the 20th student has an error in the final answer. Please note the following interview fragment.

“apa jawabannya?” “300” “300 itu apa?” “hmm 300 LCMnya?”
 “Kamu cermati ulang coba pertanyaannya? pertanyaannya apa?” “berapa kali seno menabung akan bertemu dengan kedua temannya?”.
 “Jawabannya?” “300 kali”. “Yakin? kali apa hari?” Ahmad menjawab
 “Berapa kali?” “Berarti jawabannya?” “300 kali”.

In the interview result above, the 20th student did not realize his mistake. He considered solving the story was final. Though there was still one more step to find the final step. He believed that the LCM result from the existing data was the

⁷⁰ *Ibid.*

final answer. Because he was still less than one stage of completion and he did not realize the mistake then here lies the misconception that happened. It meant that the 20th student's misconception was located at carrying out the planning stage. This conclusion is based on Polya problem solving stage which at this stage, the student should be able to connect the answers with the data in question. In addition the student should be able to connect each problem in the matter with data completion result⁷¹

The 21st student interviewed scored 50 on a written test. The value was low therefore there was a need for further identification to know where misconception was experienced. In the early stage, of understanding the problem, this student was able to mention the data contained in the problem completely and correctly. Although in conveying the essence of the question by quoting the sentence in question with less accurate, but he quite understood with the question in question. In the next stage of division a plan, the 21st student was confused. Please notice the following interview quote.

“...kira-kira cara penyelesaiannya menggunakan apa? LCM atau GCF”. “LCM?” dia berusaha menanyakan kembali jawabannya. “Kenapa menggunakan operasi LCM?”. Rafli tersenyum dan menggelengkan kepala. “Iha terus barusan menjawab LCM itu pertimbangannya apa? atau alasannya tiba-tiba memilih LCM itu kenapa?” “Hehe hanya menebak-nebak saja”.

The interview result above shows that the 21st student's misconception was located at the divising a planning stage. He was not able to plan the completion of the story. He answered the question by guessing it. He did not

⁷¹ *Ibid.*

understand which issues that should be solved by using the LCM and which issues that should be solved by using GCF. This conclusion is based on the polya story solving stage which at this stage the student simplified the problem to be a guide for planning problem solving⁷²

The 22nd student was the last student to be interviewed. This student earned a score of 0 in a written test. He answered the question of the story by directly adding the number contained in the question. To find out more specifically the location of the 22nd student's misconception, let us refer to the following interview result.

“....Coba dibaca soalnya” Friska mengangguk dan membaca pelan, dia tampak tersendat pada beberapa kalimat. “Oke friska, dari soal barusan yang kamu baca apa sih sebenarnya pertanyaannya?” Friska hanya terdiam dan memandangi lembar soal kemudian tangannya memainkan ujung krudungnya. “bagaimana Friska?” dia sedikit menggelengkan kepala dan tampak malu karena tidak memahaminya.

From the interview result above, the 22nd student seemed still not fluent in reading. He could not understand the sentence he read. He did not know the core question in the matter. Therefore, the 22nd student experienced misconception in the understanding the problem stage. This conclusion is appropriate when looking at the phases of Polya problem solving which the student must understand the problem well by knowing the data that exists and the problems contained in the story⁷³

⁷² *Ibid.*

⁷³ *Ibid.*

From detail identification of the location of misconception above, we can conclude that misconception of the students is very high. All student experienced misconception when they were working on math story problems. The location of misconceptions experienced varies. The misconceptions experienced by the students are at every stage of problem solving based on the polya. Here is a recording of the misconception that students experienced.

No	polya finishing stage	Total of students experieced misconception	Percentage
1	understanding the problem	5	22,73%
2	devising a plan	6	27,27%
3	carry out the plan	7	31,82%
4	looking back	4	18,18%

Table 5.1. Conclusion of Misconception identification student

The table above shows identification result of the students' misconception in solving story problem based on Polya story solving phase. There were 22.73% of students who experienced misconception in understanding the problem stage. Furthermore, at the devising a plan stage, 27.27% of students experienced misconception at this stage. At the stage of carrying out the planning, students who experienced misconception are the most that reaches 31.82% of the total students in the class. While students who experienced misconception in the final stage that is looking back is the least amount of which reaches 18.18% only.

If the ranking of misconception location experienced by students in working on math story problems, especially the material LCM and GCF from the

number of the most heads to the least which is 1. At the stage of carrying out the planning as much as 31.82%; 2. At the devising a planning stage of 27.27%; 3. At understanding of the problem stage 22.73%; and 4. At the carryig out the planning as much as 18.18%.

E. Factors that cause students to do their misconceptions about word problem material the least common multiple and greatest multiplier factor

To know the factor causing misconceptions experienced by students in the test, the researcher in this case uses the third data; learning documentation. The documentation data found in the field is learning plan, student worksheet, printed book as the source of student learning, and guide book of teacher. Then, the documentation learning found will be viewed to know what factors causing misconception are.

1. Factor causing misconception in the step of understanding the problem

Polya explains that in this step student knows clearly problem of misconception which will be fond its solution. Student is able to illustrate globally the problem. The attention in this step focuses on the problem stimulating memory or other aspects connecting to the problem. Hypothesis and conclusion are part of principle from approving case. While, principle of problem found is what is unknown; data and condition.

Principle of problem is by considering combination of variations, relation among the detail and all detected problem one by one⁷⁴.

In this step, students getting misconception are 5 from 22 students or 22, 73%. To know what problem is, we will observe other obtained data. In the interview, 3 from 5 students getting misconception get problem in reading skill. While, two other students read fast but they cannot learn the meaning from what they read. The low skill of reading causes students getting problem in learning the case of narrative question. This misconception is clearly appear when we look at the Polya's explanation in the step of learning question. Because students are low in reading question text, so it is very clear that students cannot learn the main of case in the question.

Viewed by learning plan made by teacher, students are not asked by teacher to learn the problem of the question. Teacher only gives problem or instant case by explaining directly the main of problem. This thing is explained in learning plan (RPP) in the step of introduction and exploration where the activities are about asking and answering directly about multiplication.

Based on the student worksheet (LKS), there is no explanation specifically about LCM and GCF connecting to problem of life. In that book, there is no explanation why the problem should use LCM and GCF.

⁷⁴ Gorge Polya, *How to solve it, Secound Edition*, (Princeton: Princeton University Press, 1973), page. 33

In worksheet book. The content is explained by explaining important points in accomplishing question.

When we look at the printed book, guide book, and other sources using in learning, there are explanations of LCM and GCF applied in daily activities. However, after viewing deeply through interview, these books are rarely used. These printed books are only used as the source of question exercise when the worksheet books are unavailable.

Based on this viewing, it may assumed that student got misconception because they do not get learning of comprehending case in test question. Moreover, they also do not know what the best theory of LCM and GCF is.

2. Factors causing misconceptions in the step of devising a plan

In this step, the student's comprehension is demanded more. Students are challenged to find the relation between data and what they do not know. They are challenged to memorize the same problem and the theories connecting with the problem frequently, to imagine and exercise the same problem which is simpler, and to contribute their ideas to finish the problem or question. It can be concluded that experience and exercise are the key in the planning step where by those ways teacher will explain the way or the method to finish problems⁷⁵.

⁷⁵ *Ibid.*, page 34

The amount of students getting misconceptions in this step are 6 of 22 students or 27,27 % in the class. I think that this number is higher because more than quarter of students in the class. Therefore, to know what causing misconceptions we will view documentation data gotten in the field of research.

The first data will be viewed is learning plan made by teacher. As Polya's explanation, in this step the more experience is needed to finish the question connecting or containing cases and earlier theories. Viewed from RPP (lesson plan), in the elaboration step, teacher has directed students to connect between the case and the earlier theory. Teacher also taught how to simplify the ration in LCM and GCF. When RPP made by teacher is viewed, the misconception should be finished. As explained by Polya in his book, experience and exercise are the core of this step so teacher should prepare the allocation of time more than usual. To get more experience and comprehension, 10 minutes are not enough for students, especially for the slow learner, but not for the fast learner.

Another data used is worksheet book (LKS). In the worksheet book, the theories connecting with LCM and GCF are explained orderly. The deficiency of worksheet book is that there is no explanation about applying theory to the life directly. However, questions in that book are excessive and various. The same thing found in another data is printed

book as the guide book for teacher where the printed book provides various and excessive question than has the worksheet.

Based on the above explanation, in the step of devising a plan, misconceptions are caused by limited time provided by teacher in learning. It is relevant with the Polya's explanation about the significant of allocation time.

3. Factor causing misconceptions in the step of carry out the plan

In this step, Polya explains that students should finish question based on step of planning. Students are expected to check every step of finishing and ensure the right question. They also should believe what they do is good using formal excuse or instuton excuse. If the problem finished is more complex, the process of working is divided into two kinds; the real steps and the insignificant steps where in the pure step there are insignificant step⁷⁶.

In the step of "carry out the plan", the amount of students getting misconceptions are 7 of 22 students of 31,82 % in the class. This number reaches the highest number in all steps of finishing Polya. It also gives another meaning that commonly the level of students comprehending in finishing question stops at the step of devising a plan because students passing the step is less than 25 %. It means that 30% of students are

⁷⁶ *Ibid.*, page 35

selected in this step. To know what factor causing misconceptions in this step, the data obtained from the field of research will be viewed.

The first data will be viewed is lesson plan made by teacher. In the step of carry out the plan, the core of this step is carefulness and deeply comprehension. In the lesson plan students are challenged to study together. By studying together, students can exchange information to others to get good comprehension. In this case, students finish the question to find common factors and common multiples in group. In this exploration step, teacher provides enough time allocation; 25 minutes. Viewing lesson plan.

Students should get good comprehension of the subject. Another indication explained by Polya is carefulness. In this step, mistakes made by one students can be hidden by other students because students work in group. Then, because students are demanded to work independently the learning model in group is not appropriate to train the carefulness of students. Moreover, by leaning in group will teacher will not know the level comprehension of each student.

The next document is student worksheet book (LKS). In the student worksheet book, the explanation of LCM and GCF is explained orderly. Then, the explanation in the student worksheet book is the same as in the printed guide book for teacher. After viewing deeply, the explanation in the student worksheet book about LCM and GCF is not

explained in detail. In illustrating application, LCM and GCF explained in the book is not explained the step of finishing in detail. The example of finishing question is directly given not like explaining material in the book

Based on the above view, factors causing misconception of students in this step is the model of learning in group. So that, the carefulness when they finish questions is less. In addition, example of finishing question in the book written by random causes students careless in the certain steps because they assume that it is not important. It is in line with what Polya explains, because the important thing needed to pass the step of carry out the plan is carefulness.

4. Factor causing misconceptions in the step of looking back

In the last step, Polya explains that the result of working should be checked again. Is the problem breaker clear? Is the argument of answer right? In this case, students have to explain it clearly. They also should look and view the problem from every side. In addition, students are expected to use the result and then method from their work to finish the connecting problem. They are also demanded to explain again how the finishing does simply. Probably, students will find solution to finish the problem when they are able to simplify problem.⁷⁷ It can be reached by doing exercise so that students will get many view to finish the problem based on their experience.

⁷⁷ *Ibid.*, page 36

In this step, students getting misconceptions are only 4 or 18%. It means that they are almost perfect in finishing the question based on Polya's theory although they get misconceptions. To know what problem causing misconceptions in the step of looking back, we will view or analyze other data.

The first data is lesson plan made by teacher. It explains that students in explanation step was taught to explain the result discussion. As Polya's statement, students are demanded to explain what argument is. They are also demanded to show the relation between answer and problem in the question. In the lesson plan, teacher challenges students to view the answer and connect it with the theory that they learn. It can be known from the lesson plan in the step of elaboration/application. In this step, students are demanded to learn deeply all subjects about LCM and GCF.

Other sources are student worksheet book and printed book for teacher. In the student worksheet book, the exercises provided are direct question which does not have problem solving to be solved. From the 40 competence test question in student worksheet book, only 7 questions containing problem solving. It means that only 17,5% of questions contains problem solving, and 82,5%, the question is provided directly its problem. While, in printed book (BSE), only 5 of 30 competence test questions of 16,67 are narrative question containing problem solving. It is proved by the amount of exercise question that is less. Based on Polya's explanation about looking back, factor causing misconception is in line because the deep comprehension can be obtained by doing exercise more with the various question.

Based on viewing the above data, it can be concluded that factor causing student's misconception in the "looking back" step is that the exercise of students in finishing question connecting with problem solving is less. It can be shown by the limited exercise question connecting with solving problem. Based on Polya's explanation about "looking back" step demanding deep comprehension, factor causing misconception is in line because the deep comprehension can be obtained by doing various exercise question.

F. Teacher's way of dealing student misconception in solving word problem material the least common multiple and greatest multiplier factor

Narrative question of mathematics contains problem solving where commonly it connects to daily activities consisting of applications of related material. Learning mathematics based on problem solving is still introduced by schools because it contains more benefits.

The National Council of Mathematics Supervisor stated that problem solving is the main focus of mathematics curriculum. Misconceptions in finishing narrative story can be finishing by learning mathematics based on problem solving. It is important to be informed that problem is the condition should be finished or omitted but there is no solution which is appear directly. Problem solving is different process in finishing situation where it is problem for a person not for other. The statement is in accordance with what was conveyed by homeroom IV Mrs. Yuni Murwanti. She said that the way that can be used in overcoming misconceptions experienced by students in answering story problems is with problem solving learning models

There are strategies can be used in mathematics learning based on 4 steps of finishing Polya's question when solving problem by Mrs Yuni Murwanti as a homeroom IV:

1. Making a drawing

One of the strategy helping to learn problem in question and get solution is by drawing sketch and diagram. Through drawing, students will be helped to think what solution needed is. In finishing problem, student can illustrate the main of problem so it may help students to learn question. In addition, by illustrating students can check directly process of finishing question based on plan that is made. Therefore, by drawing checking process will facilitate students because they are involved in each step directly.

2. Guessing and Checking

In guessing process, students may find mistakes. However, by guessing students will learn more problem and find solutions when they try answer. When, the first guessing is wrong, it will response students to guess well. Guessing and checking strategies are in line with students of elementary school because it will give them more experience to reach success. This strategy will be useful when they learn question and use various plan of finishing problem.

3. Making a Table

Sometimes, problems can be finished by listing probabilities. The table will facilitate in organizing that list. Strategy by making the table will facilitate students when they process many numeric data. By the table, students will find the great point needed in finishing table because of the regularity of table. Therefore, it can be assumed that table will facilitate student in checking correctness of their work.

4. Using a Models

The model is important in illustrating problem and suggestion to find solution. Using this model is useful when the problem connecting with the numbers and geometry. This model is also useful when student plans finishing problem and checking answer again.

5. Working Backward

Working backward is needed when student finds solution of the case that can be done by using probabilities of answer will be connected to the data. Then, student finds solution from each cases or problem that is appear. This model will influence in the step of devising a plan because it will show various way in finishing problems⁷⁸.

⁷⁸Albert B. Bennet and L. Ted Nelson, *Mathematics for Elementary Teacher a Conceptual Approach*, (Princeton: Princeton University Press, 2004), page 06 – 12

CHAPTER VI

CLOSING

A. Conclusion

From the results of the discussion, researchers can conclude the results of research based on the formulation of the problem created. From the results of this study the researcher can conclude that the location of misconception of students in solving word problem of material LCM and GCF in the fourth grade students in State Elementary School 01 Blayu is located at all stages. Of as many as 22 students who researched there are 5 students experienced the misconception on the stage of understanding the problem or as much as 22.73%. As much as 27.27% or 6 students undergo a misconception on stage devising a plan, 7 students or 31,82 % experienced a misconception on stage carry out the plan and the remaining 4 students or 18,18 % experienced a misconception on stage looking back. From the results of the research show that students of class IV SD Negeri 01 Blayu nothing is perfectly understood the material particularly in LCM and GCF solve the story problem solving. This is evident from the results of the work of the students there is nothing to achieve a perfect score.

Based on further discussion with the reduction of data and interpretation of documents obtained in field, researchers found several factors cause the misconception that happens to the student grade IV SD Negeri 01 Blayu. Document data obtained in field is Lesson Plan that created by teachers, students worksheet Book or LKS which became the student handbook, and printed books

in the form of electronics school book (BSE) who becomes a teacher handbook and other resources students in learning. Factors cause the misconception that happens to grade IV SD Negeri Blayu 01 in resolving the word problem in Material LCM and GCF are: 1. The factors that lead to misconceptions on the stage of understanding the problem because students do not get instruction about the understanding of the problem in a question word problem and a good understanding of the theory of learning about problems relating to the LCM and GCF; 2. The factors that lead to misconceptions on the stage in devising a plan is the allocation of a given learning teachers a bit so the time students to practice and gain experience in understanding the matter less; 3. Factors affecting the misconception on stage carry out the plan is the accuracy of the students in doing a matter less because the learning use Group work. In addition example completion question problem solving in stages the students Handbook are not coherently; 4. The factors that lead to the misconception of students on stage looking back that is students less exercise in resolving the word problem that is evidenced by at least question word problem solving available in student's and teacher's Handbook.

After finding out the cause of the misconception that students then researchers looking for book references deemed capable of overcoming the misconception that experienced students. One way to avoid misconceptions in order not to experienced by students is by giving the appropriate teaching strategies. Some of the strategies that can be done to prevent the occurrence of misconceptions students in working on the word problem in material LCM and

GCF i.e. 1. Mathematical Strategy Making a drawing; 2. the Guessing and checking; 3. Making a table; 4. Using a models; and 5. Working backward

B. Sugestion

After writing the results of this study, the researcher gives some suggestions so that this research can provide benefits either directly or not. Here are suggestions that can be submitted by researchers::

1. For teachers, should provide a more varied learning methods, especially mathematics learning which is often considered difficult by students. Math learning should be presented with problem solving method so that students are able to comprehend directly the benefits of mathematics learning. In addition, the teacher should be able to control every development of understanding of the students so that the level of understanding of students in one class evenly.
2. For readers, at least can be used as a reference that each student's understanding is different. Although both are wrong in answering a problem but each has a different level of understanding. This can be a reference that in judging people's mistakes should not be generalized.
3. For next researcher, from the limitations of this study is a matter that tested only the category of questions C2 and C3 which requires a high understanding in completion. The next researcher can further refine this research for other categories of questions such as the category of C1 questions related to memory. In addition, researchers should further refine

this research by making the object wider so that it will get a general description of misconceptions that often occur in students.



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KEMENTERIAN AGAMA REPUBLIK INDONESIA
UNIVERSITAS ISLAM NEGERI MAULANA MALIK IBRAHIM MALANG
FAKULTAS ILMU TARBIYAH DAN KEGURUAN

Jalan Gajayana 50, Telepon (0341) 552398 Faximile (0341) 552398 Malang
http:// fitk.uin-malang.ac.id. email : fitk@uin malang.ac.id

Nomor : 2364/Un.03.1/TL.00.1/9/2017 12 September 2017
Sifat : Penting
Lampiran : -
Hal : Izin Penelitian

Kepada
Yth. Kepala Dinas Pendidikan Kabupaten Malang
di
Malang

Assalamu'alaikum Wr. Wb.

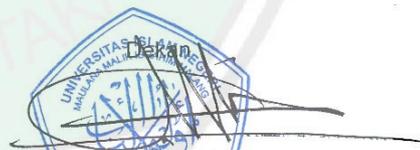
Dengan hormat, dalam rangka menyelesaikan tugas akhir berupa penyusunan skripsi mahasiswa Fakultas Ilmu Tarbiyah dan Keguruan (FITK) Universitas Islam Negeri Maulana Malik Ibrahim Malang, kami mohon dengan hormat agar mahasiswa berikut:

Nama : Khoiril Anwar
NIM : 12140156
Jurusan : Pendidikan Guru Madrasah Ibtidaiyah (PGMI)
Semester - Tahun Akademik : Ganjil - 2017/2018
Judul Skripsi : **Misconceptions of Student Solving Word Problem in Material the Least Common Multiple and the Greatest Common Factors**

diberikan izin untuk melakukan penelitian di SDNegeri 01 Blayu Wajak Malang mulai September 2017 sampai dengan November 2017.

Demikian, atas perkenan dan kerjasama Bapak/Ibu yang baik disampaikan terima kasih.

Wassalamu'alaikum Wr. Wb.


Dr. H. Agus Maimun, M.Pd
NIP. 19650817 199803 1 003

Tembusan :

1. Yth. Ketua Jurusan PGMI
2. Yth. Kepala SDNegeri 01 Blayu Wajak Malang
3. Arsip



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Nomor : 2361/Un.03.1/TL.00.1/9/2017 12 September 2017
 Sifat : Penting
 Lampiran : -
 Hal : Izin Penelitian

Kepada
 Yth. Kepala SDN 01 Blayu Wajak Malang
 di
 Malang

Assalamu'alaikum Wr. Wb.

Dengan hormat, dalam rangka menyelesaikan tugas akhir berupa penyusunan skripsi mahasiswa Fakultas Ilmu Tarbiyah dan Keguruan (FITK) Universitas Islam Negeri Maulana Malik Ibrahim Malang, kami mohon dengan hormat agar mahasiswa berikut:

Nama : Khoirul Anwar
 NIM : 12140156
 Jurusan : Pendidikan Guru Madrasah Ibtidaiyah (PGMI)
 Semester - Tahun Akademik : Ganjil - 2017/2018
 Judul Skripsi : **Misconceptions of Student Solving Word Problem in Material the Least Common Multiple and the Greatest Common Factors**
 Lama Penelitian : September 2017 sampai dengan November 2017 (3 bulan)

diberi izin untuk melakukan penelitian di lembaga/instansi yang menjadi wewenang Bapak/Ibu.

Demikian, atas perkenan dan kerjasama Bapak/Ibu yang baik disampaikan terima kasih.

Wassalamu'alaikum Wr. Wb.

Dekan

 Dr. H. Agus Maimun, M.Pd
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Tembusan :

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 Jl. Sidodadi II No. 5 Desa Blayu Kec. Wajak Kab. Malang Kode Pos 65173

Nomor : 432/XI/SK/35.07.101.424.07/2017
 2017
 Lampiran : -
 Perihal : Surat Keterangan

Malang, 23 November

SURAT KETERANGAN

Assalamu'alaikum Wr. Wb.

Dengan ini kami berikan keterangan bahwa di bawah ini:

Nama : Khoirul Anwar
 NIM : 12140156
 Jurusan : Pendidikan Guru Madrasah Ibtidaiyah (PGMI)

telah melaksanakan penelitian di SD Negeri 01 Blayu Kec. Wajak, Kab. Malang, dengan judul penelitian **“Misconception of Student Solving Mathematics Word Problem in Material the Least Common Multiple and the Greatest Common Factors”**

Demikian surat keterangan ini dibuat untuk dapat dipergunakan sebagaimana mestinya.

Wassalamualaikum Wr. Wb.

Kepala Sekolah,

Dra. SRI KUSMIARSIH
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EVIDENCE OF CONSULTATION

Name : Khoirul Anwar
Number of Student : 12140156
Departement : Islamic Primary Teacher Program
Advisor : Yeni Tri Asmaningtyas, M.Pd
Title of Skripsi : Misconception of Student Solving Mathematics Word Problem in Material the Least Common Multiple and the Greatest Common Factors

No	Date of Consultation	Consultation Material	Signature
1	22 April 2017	Bab 1	<i>Yeni Tri Asmaningtyas</i>
2	01 Mei 2017	Bab 3 dan angket validasi	<i>Yeni Tri Asmaningtyas</i>
3	12 Juni 2017	Revisi bab 1 dan 3	<i>Yeni Tri Asmaningtyas</i>
4	20 Juni 2017	Setor bab 2	<i>Yeni Tri Asmaningtyas</i>
5	05 Oktober 2017	Seto bab 4 dan 5	<i>Yeni Tri Asmaningtyas</i>
6	25 Oktober 2017	Revisi bab 4 dan 5	<i>Yeni Tri Asmaningtyas</i>
8	22 Desember 2017	Revisi bab 5 dan setor bab 6	<i>Yeni Tri Asmaningtyas</i>
9	26 Desember 2017	Final Draft	<i>Yeni Tri Asmaningtyas</i>

Acknowledged by,
Head of Islamic Primary Teacher Programe

H. Ahmad Sholeh
H. Ahmad Sholeh, M. Ag
NIP. 197608032006041001

RENCANA PELAKSANAAN PEMBELAJARAN**(R P P)**

Satuan pendidikan : SD Negeri 1 blayu

Mata pelajaran : Matematika

Kelas : IV

Semester : I (Ganjil)

Alokasi waktu : 2 jam pelajaran (2 x 35 menit)

A. Standar Kompetensi:

2. Memahami dan menggunakan faktor dan kelipatan dalam pemecahan masalah.

B. Kompetensi Dasar :

- 2.1. Mendiskripsikan konsep faktor dan kelipatan.
2. Menentukan keliptan dan fator bilangan.
3. Menentukan KPK dan FPB.
4. Menyelesaikan masalah yang berkaitan dengan KPK dan FPB.

C. Indikator :

- Menjelaskan pengertian faktor dan kelipatan.
- Menentukan kelipatan suatu bilangan.
- menentukan KPK dua bilangan.
- Menentukan faktor suatu bilangan.
- Menentukan FPB dua bilangan.
- Memecahkan masalah sehari-hari yang berkaitan dengan KPK dan FPB.

D. Tujuan : Melalui eksplorasi anak dapat :

- Menjelaskan pengertian faktor dan kelipatan.
- Menentukan faktor dan kelipatan suatu bilangan.
- Menentukan KPK dan FPB dua bilangan.
- Menyelesaikan masalah sehari-hari yang berkaitan dengan KPK dan FPB.

E. Materi pokok:

- Faktor adalah unsur perkalian dari suatu bilangan.
- Contoh : 2 dan 5 adalah faktor dari 10, sebab $2 \times 5 = 10$.
- Kelipatan adalah hasil perkalian dari suatu bilangan dengan bilangan lainnya.
- Contoh : 8 adalah kelipatan 2 karena $2 \times 4 = 8$.
- Mencari faktor suatu bilangan adalah mencari semua unsur perkalian dari bilangan tersebut.
- Contoh : Faktor dari 12 adalah 1, 2, 3, 4, 6 dan 12 sebab 12 adalah hasil perkalian dari
 - 1×12 , 2×6 , 3×4 .
- Mencari kelipatan suatu bilangan berarti mengalikan bilangan tersebut dengan urutan bilangan tertentu (1, 2, 3 ...) Contoh : kelipatan 2 adalah : 2, 4, 6, 8, 10
- Mencari FPB dari dua bilangan berarti mencari faktor yang sama yang paling besar dari dua bilangan tersebut. Contoh : Faktor 6 adalah ; 1, 2, 3, 6. Faktor 4 adalah 1, 2, 4. Jadi FPB dari 4 dan 6 adalah 2
- Mencari KPK dua bilangan berarti mencari kelipatan yang sama yang paling kecil dari dua bilangan tersebut. Contoh : Kelipatan 4 adalah : 4, 8, 12, 16, 20, kelipatan 3 adalah: 3, 6, 9, 12, 15,
- Jadi KPK dari 3 dan 4 adalah 12.

F. Langkah-langkah kegiatan:

Tahap Kegiatan	Kegiatan Guru	Kegiatan Siswa	Alokasi Waktu
1	2	3	4
1. Pendahuluan	* Apersepsi mengajak anak menyanyikan lagu "Aku dengar	Anak menyanyi bersama lagu "Aku	10 Menit

	<p>aku lupa”</p> <p>* Menggali pengetahuan awal tentang faktor dan kelipatan. Dengan memberi contoh perkalian dua-bilangan misalnya $2 \times 4 = 8$. guru menanyakan mana faktornya?</p> <p>Contoh kelipatan misalnya ; 2, 4, 6, 8,...</p> <p>kelipatan bilangan berapakah ini?</p>	<p>denganr aku lupa”</p> <p>* menjawab pertanyaan guru</p>	
2. Eksplorasi	<p>* Membimbing siswa untuk melakukan kegiatan secara kelompok.</p> <p>* Memberi kesempatan kepada siswa untuk menyelesaikan LKS secara kelompok.</p>	<p>* Mencari faktor dari suatu bilangan.</p> <p>* mencari faktor yang sama dari pasangan suatu bilangan.</p> <p>* Mencari faktor terbesar dari Pasangan dua bilangan (FPB)</p> <p>*Mencari kelipatan suatu</p>	25 Menit

		<p>Bilangan</p> <p>*Mencari kelipatan yang sama dari dua bilangan yang berbeda.</p> <p>*Mencari kelipatan yang sama yang terkecil dari dua bilangan. (KPK)</p>	
3. Eksplanasi	<p>* Meminta siswa untuk mewakili kelompoknya menyampaikan hasil diskusinya.</p>	<p>* Menyampaikan hasil diskusi kelompok.</p> <p>* Kelompok lain menanggapi.</p> <p>* Mencatat kesimpulan</p>	10 Menit
4. Elaborasi / Aplikasi	<p>* Mengarahkan hasil diskusi siswa untuk menjawab permasalahan pada kegiatan pendahuluan tentang faktor dan kelipatan.</p> <p>* Menunjukkan aplikasi konsep tentang kelipatan dan faktor.</p> <p>* Untuk menyederhanakan perbandingan dua bilangan</p>	<p>* berdiskusi dengan kelompok- nya untuk menjawab permasalahan pada kegiatan pendahuluan.</p> <p>* Mengemukakan pendapat sebagai jawaban permasalahan.</p>	10 Menit

	<p>dipakailah FPB dari dua bilangan tersebut.</p> <p>* Untuk menyamakan penyebut dari dua pecahan yang berbeda digunakan KPK</p>		
5. Evaluasi.	<p>* Mengajukan pertanyaan sebagai penilaian hasil pembelajaran. (lembar tes terlampir).</p> <p>* Tindak lanjut : Memberi PR : mencari FPB dan KPK</p>	Mengerjakan soal tes tulis.	15 Menit

G. Sumber, alat/ bahan :

- a. Sumber : Ayo Belajar Matematika, Untuk SD dan MI Kelas IV, hal 43 – 58, Pusat perbukuan Departemen Pendidikan Nasional.

G. Sumber, alat/ bahan :

- a. Sumber : Ayo Belajar Matematika, Untuk SD dan MI Kelas IV, hal 43 – 58, Pusat perbukuan Departemen Pendidikan Nasional.
b. Alat/bahan : LKS, alat tulis, papan tulis, spidol.

H. Penilaian: Tes tulis dan tes kinerja (alat tes terlampir)

Blayu, 01 Agustus 2017

Mengetahui,
Kepala SD Negeri 1 Blayu


Dra. SRI KUSMIARSIH
 NIP.195901121980102005

Guru Kelas


YUNI MURWANTI

Lembar Kerja Siswa

Judul kegiatan : Mencari KPK dan FPB.

Tujuan kegiatan : Siswa dapat menentukan KPK dari dua bilangan satu angka.
Siswa dapat menentukan FPB dari dua bilangan dua angka.

Waktu : 25 menit

Hari tanggal : 11 Agustus 2008.

Alat/bahan : Kertas, pensil, karet penghapus.

Prosedur kerja : I. - carilah kelipatan bilangan 2 yang lebih kecil dari 20!

2,,

- carilah kelipatan bilangan 3 yang lebih kecil dari 20!

3,,

- lingkari kelipatan yang sama dari bilangan 2 dan bilangan 3 tersebut.

- pilih kelipatan yang sama yang paling kecil sebagai KPK bilangan 2

dan bilangan 3.

- KPK dari bilangan 2 dan 3 adalah

II. – carilah pasangan bilangan yang jika dikalikan hasilnya 42 !

42

Faktor dari 42 adalah :,,

- carilah pasangan bilangan yang jika dikalikan hasilnya 70 !

70

- Faktor dari 70 adalah :,,

- Tulislah faktor persekutuan dari bilangan 42 dan 70 !

- Carilah faktor persekutuan yang terbesar dari 42 dan 70!

- FPB dari bilangan 42 dan 70 adalah :

Kunci LKS: I. - kelipatan 2 kurang dari 20 adalah : 2, 4, 6, 8, 10, 12, 14, 16, 18

- kelipatan 3 kurang dari 20 adalah : 3, 6, 9, 12, 15, 18.

- kelipatan persekutuan 2 dan 3 adalah: 6, 12, 18.

- KPK 2 dan 3 adalah : 6.

II. – faktor 42 adalah : 1, 2, 3, 6, 7, 14, 21, 42.

- faktor 70 adalah : 1, 2, 5, 7, 10, 14, 35, 70.

- Faktor persekutuan 42 dan 70 adalah : 1, 2, 7, 14.

- FPB dari 42 dan 70 adalah 14.

Teks lagu : "AKU DENGAR AKU LUPA"

Aku dengar aku lupa, aku lihat aku ingat.

Ku coba melakukannya, akhirnya menjadi bisa.

RUBRIK PENILAIAN

No	Nama siswa	Aspek yang dinilai			Skor	NA
		Keaktifan	Kerjasama	Ketepatan waktu		
1					
2					
3					
4					
5					
6					
....	dst.					

Keterangan:

Skor 4 : Dapat melakukan dengan tepat dan benar

3 : Dapat melakukan dengan benar.

2 : Dapat melakukan tetapi kurang benar

1 : Tidak melakukan sama sekali

Skor perolehan

$$NA = \frac{\text{Skor perolehan}}{\text{Skor maksimal}} \times 100$$

Skor maksimal

Soal tes tulis :

1. Carilah KPK dari bilangan : 1. 3 dan 5.
2. Carilah FPB dari bilangan : 1. 12 dan 15
 2. 5 dan 7.
 3. 4 dan 5.
2. 32 dan 60
3. 18 dan 54

Kunci jawaban : I. 1. 15
2. 35
3. 20

II. 1. 3
2. 4
3. 9

Pedoman penilaian: tiap nomor skornya 1.

$$N A = \frac{\text{Skor perolehan}}{\text{Skor maksimal}} \times 100$$



Appendix V

Soal Tes

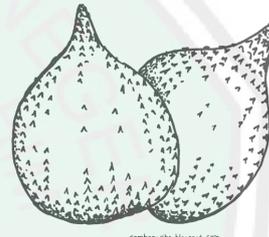
1. Pak Tarno datang dari desa dengan membawa 240 buah jambu, 700 buah rambutan dan 400 buah salak. Pak Tarno ingin membagikan buah-buahan tersebut kepada tetangganya, dengan jumlah masing-masing jenis buah sama banyak. Berapa tetanggakah yang akan menerima bingkisan buah dari Pak Tarno?



240 buah



700 buah



400 buah

2. Bu Leni mengisi galon air minum setiap 15 hari sekali di depo air minum “SEGAR”, sedangkan Bu Mira mengisi galon air minum setiap 10 hari sekali di depo air yang sama. Jika Bu Leni dan Bu Mira bertemu hari ini di depo air minum “SEGAR” untuk mengisi galon air minum, maka mereka akan bertemu kembali untuk mengisi galon air minum setelah ... hari.



3. Seno menabung setiap 15 hari sekali, Andi menabung setiap 20 hari sekali sedangkan Ratna menabung setiap 25 hari sekali. Jika hari ini Seno bertemu Andi dan Ratna untuk menabung, maka butuh berapa kali Seno menabung agar bertemu dengan kedua temannya tersebut?



4. Dalam rangka acara arisan keluarga, Bu Retno memesan 36 kue coklat, 42 kue donat, dan 60 kue sus. Ketiga jenis kue tersebut akan dimasukkan ke dalam kotak dengan jumlah yang sama untuk setiap jenis kue. Berapa banyak kue sus dalam setiap kotaknya?



gambar-abc.blogspot.com

- Selamat Mengerjakan -

Rubrik penilaian Soal Test

No	Kriteria Penilaian	Butir Soal 1	Butir Soal 2	Butir Soal 3	Butir Soal 4
1	Siswa menuliskan data yang diketahui				
2	Siswa menuliskan cara penyelesaian soal				
3	Siswa menentukan penyelesaian soal menggunakan KPK/FPB				
4	Siswa menjawab soal dengan benar menggunakan KPK/FPB				
5	Siswa menjawab soal dengan kalimat yang tepat dengan benar				
	Jumlah Skor				

Pedoman pengisian rubrik penilaian:

1. Setiap kriteria penilaian skor maksimal 1 dan minimal 0
2. Jumlah skor maksimal setiap butir soal adalah 5 dan minimal 0
3. Jika kriteria nomor 1, 2, dan 3 memperoleh skor 0 maka kriteria nomor 4 dan 5 dianggap salah dan memperoleh skor 0
4. Nilai akhir adalah jumlah skor maksimal setiap butir soal dikalikan 5 dan dibagi seratus

$$\text{Nilai} = (\text{Jumlah Skor Maksimal}) \times 5 \div 100$$

Appendix VI

Pedoman Wawancara

1. Apakah kamu merasa melakukan kesalahan dalam menjawab soal tes?
2. Nomor soal berapa yang kamu anggap paling sulit?
3. Coba kamu baca kembali soal tersebut! (pada butir soal yang salah)
4. Apa yang ditanyakan dari soal tersebut?
5. Data apa yang kamu temukan dalam soal tersebut?
6. Kira-kira itu soal yang berkaitan dengan KPK atau FPB?
7. Apa alasannya memilih berkaitan dengan KPK/FPB?
8. Langkah pertama, apa yang kamu bisa lakukan untuk menyelesaikan soal tersebut?
9. Coba selesaikan soal tersebut!
10. Apa jawaban dari soal cerita tersebut?
11. Coba jawab pertanyaannya dengan kalimat yang sesuai dengan soal cerita !
(Pertanyaan nomer 12 dan 13 untuk soal nomer 3)
12. Jika Ratna, butuh berapa kali menabung Ratna agar bertemu dengan Seno dan Andi?
13. Kalau Andi, butuh berapakali andi menabung agar bertemu dengan Seno dan Ratna?
(pertanyaan nomer 14 dan 15 untuk soal nomer 4)
14. Berarti berapa banyak kue coklat dalam setiap kotaknya?
15. Berarti berapa banyak kue donat dalam setiap kotaknya?
16. Adakah alternatif lain untuk menyelesaikan soal tersebut?

Pedoman Penilaian Wawancara

No	Pertanyaan	Memahami dengan baik	Cukup faham	Mengalami miskonsepsi
1	Apakah kamu merasa melakukan kesalahan dalam menjawab soal tes?	-	-	-
2	Nomor soal berapa yang kamu anggap paling sulit?	-	-	-
Tahap Understanding the Problem				
3	Coba kamu baca kembali soal tersebut! (pada butir soal yang salah)	Membaca dengan lancar tanpa ada kesalahan	Membaca dengan lancar dengan 2 kali mengalami kesalahan	Membaca dengan lebih dari 2 kali kesalahan
4	Apa yang ditanyakan dari soal tersebut?	Menjawab dengan jelas apa yang ditanyakan soal	Menjawab dengan ragu apa yang ditanyakan pada soal	Tidak bisa menjawab atau salah dalam menjawab
5	Data apa yang kamu temukan dalam soal tersebut?	Menjawab dengan benar dan lengkap mencakup semua data	Menjawab dengan benar tetapi terdapat data yang salah atau tidak disebutkan	Salah dalam menyebutkan semua data atau tidak menjawab
Tahap Devising a Plan				
6	Kira-kira itu soal yang berkaitan dengan KPK atau FPB?	Menjawab dengan lugas dan benar	Menjawab dengan ragu	Menjawab salah atau tidak menjawab
7	Apa alasannya memilih berkaitan dengan KPK/FPB?	Menyampaikan alasan dengan tepat dan mampu mengilustrasikan dengan jelas	Menyampaikan alasan dengan tepat tetapi tidak mampu mengilustrasikan	Alasannya salah atau tidak bisa memberikan alasan

	Langkah pertama, apa yang kamu bisa lakukan untuk menyelesaikan soal tersebut?	Mampu menjelaskan langkah pertama dan lanjutannya dengan jelas, benar dan runtut	Menjelaskan langkah awal dan selanjutnya tetapi tidak runtut dan kurang jelas	Tidak bisa menjelaskan langkah-langkah penyelesaian soal
Tahap Carry Out the Plan				
	Coba selesaikan soal tersebut!	Mampu menyelesaikan soal kurang dari 2 menit dengan benar	Mampu menyelesaikan soal lebih dari 2 menit dan benar	Salah dalam menyelesaikan soal
	Apa jawaban dari soal cerita tersebut?	Menjawab dengan lugas dan benar	Menjawab dengan benar tetapi ragu	Jawaban salah
Tahap Looking Back				
	Coba jawab pertanyaannya dengan kalimat yang sesuai dengan soal cerita !	Menjawab dengan lugas dan benar	Menjawab dengan benar tetapi ragu	Tidak bisa menjawab atau salah dalam menjawab
	Butir soal 12, 13, dan 14, 15	Menjawab dengan lugas dan benar	Menjawab dengan benar tetapi ragu	Tidak bisa menjawab atau salah dalam menjawab
	Adakah alternatif lain untuk menyelesaikan soal tersebut?	Jika siswa dapat memberikan cara lain untuk menyelesaikan soal		

Angket Validitas Ahli

Nama : Ria Norpika Y.
 NIP : 198607202015032003.
 Jabatan : Dosen BSM

No	Pernyataan	Sangat Baik	Baik	Cukup	Buruk	Sangat Buruk
1	Butir soal nomer 1 dan 2 telah menggambarkan tipe soal cerita pemahaman		✓			
2	Butir soal nomer 3 dan 4 telah menggambarkan tipe soal cerita aplikasi		✓			
3	Bahasa yang digunakan sudah dapat dimengerti oleh siswa usia sekolah dasar		✓			
4	Butir soal yang dibuat sudah bisa diselesaikan dengan menggunakan tahapan penyelesaian soal Polya		✓			
5	Tingkat kesulitan soal adalah sedang			✓		

Saran:

Perbaiki pada kalimat soal ada dilembar keipolnya.

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.....

.....

.....

Malang, 23 Mei 2017.

Validator Ahli Materi


 (Ria Norpika)

Angket Validitas Ahli

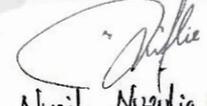
Nama : Nuril Nuzulia, M.Pd
 NIP : 19900423201608012014
 Jabatan : Asisten Ahli (Dosen PGM)

No	Pernyataan	Sangat Baik	Baik	Cukup	Buruk	Sangat Buruk
1	Butir soal nomer 1 dan 2 telah menggambarkan tipe soal cerita pemahaman		✓			
2	Butir soal nomer 3 dan 4 telah menggambarkan tipe soal cerita aplikasi		✓			
3	Bahasa yang digunakan sudah dapat dimengerti oleh siswa usia sekolah dasar		✓			
4	Butir soal yang dibuat sudah bisa diselesaikan dengan menggunakan tahapan penyelesaian soal Polya		✓			
5	Tingkat kesulitan soal adalah sedang		✓			

Saran:
 - Soal minimal 10

Malang, 17 Mei 2017

Validator Ahli Materi


 Nuril Nuzulia, M.Pd

Appendix VIII

Member of Fourth Grade SD Negeri 01 Blayu

No	Name
1	Rafi Aslamuddin Zakaria
2	Firli Afrian Saputra
3	Cherys Viola A.
4	Rangga Rizki Fitriani
5	Anita Febri Yani
6	Qutwah Gaida Zahira
7	Moch. Syamil Ihkamuddin
8	Martha Dewi Olivia
9	Syahrul Alfani Azizi
10	Andro Vani Maulana
11	Muhammad Riski Afandi
12	Adi Setia Pradana
13	Norma Amalia
14	Adellia Putri Wardani
15	Nurul Fadhila
16	Lola Dewi Ramdhania
17	Revi Lestari
18	Dwi Saputra
19	Dafani Debi Yohana
20	Ahmad Fadhori
21	Muhamad Rafli
22	Yoania Friska

Appendix IX**BIODATA**

Name : Khoirul Anwar
NIM : 12140156
Date and Place of Birth : Malang, February 20th, 1994
Fac./Study Programe : Faculty of Tarbiyah and Teaching Training,
Islamic Primary Teacher Education Program
(PGMI)
Entrance Year : 2012
Address : Jl. Kolonel Sugiono Gg. 3b No. 103 Mergosono
Kedungkandang Kota Malang
: Dusun Pijetan, Rt. 20 Rw. 06 Desa Blayu,
Kecamatan Wajak, Kabupaten Malang
:
Contact : 085755240098

Malang, December 23th, 2017

Writer

(Khoirul Anwar)

Appendix X

Dokumentasi Foto

Picture 1. Fourth grade student SD Negeri 01 doing writing test



Picture 2. Sstudent interview

