THE STRATEGY OF TEACHER IN REDUCING THE MISCONCEPTION OF SCIENCE LEARNING IN MATERIAL OF FORCE AND MOTION AT FIFTH GRADE OF SDI MOHAMMAD HATTA MALANG

THESIS

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MALANG

MAY 2018

THE STRATEGY OF TEACHER IN REDUCING THE MISCONCEPTION OF SCIENCE LEARNING IN MATERIAL OF FORCE AND MOTION AT FIFTH GRADE OF SDI MOHAMMAD HATTA MALANG

THESIS

Presented to To Tarbiyah and Teacher Training Faculty Maulana Malik Ibrahim State Islamic Univercity, Malang in Partial Fulfillment of the Requirement for the Degree of Sarjana Pendidikan (S.Pd))

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APPROVAL SHEET

THE STRATEGY OF TEACHER IN REDUCING THE MISCONCEPTION OF SCIENCE LEARNING IN MATERIAL OF FORCE AND MOTION AT FIFTH GRADE OF SDI MOHAMMAD HATTA MALANG

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THE STRATEGY OF TEACHER IN REDUCING THE MISCONCEPTION OF SCIENCE LEARNING IN MATERIAL OF FORCE AND MOTION AT FIFTH GRADE OF SDI MOHAMMAD HATTA MALANG

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DEDICATION

Segala puji bagi Allah SWT, atas rahmat dan karunia-Nya, sehingga karya ini dapat diselesaikan. Shalawat serta salam semoga senantiasa tercurahkan keharibaan Rasulullah SAW.

Teriring do'a, rasa syukur dan dengan segenap kerendahan hati Kupersembahkan karya ini untuk orang-orang istimewa yang telah mengisi dan mewarnai hidupku.

Yang tercinta kedua orang tuaku Bapak Hasyim, S.Pd.I dan Ibu Umayah. M.Pd, yang telah mendidik dan membesarkanku dengan penuh cinta kasih, yang selalu mengingatkan dan memberi dukungan kepadaku, yang tak pernah lelah selalu mengiringi langkahku dengan do'a-do'a.

Saudaraku Mas Azhar Syarifuddin, M.Pd, sepupu-sepupuku, serta keluarga tercinta Bani Mandrim yang selalu memberikan semangat, motivasi, dan dukungan yang tak terhingga.

Sahabat-sahabat seperjuangan
Para Guru dan Dosen
Almamater tercinta UIN Maulana Malik Ibrahim Malang

MOTTO

فَإِنَّ مَعَ الْعُسْرِ يُسْرًا (٥) إِنَّ مَعَ الْعُسْرِ يُسْرًا (٦)

(5) For Indeed, with hardship (will be) ease

(6) Indeed, with hardship (will be) ease.[2]

(Q.S Al-Insyirah: 5 – 6)

[2] Prof. T. M. Hasbi Ashshiddiqi, *Al-Qur'an dan Terjemahnya* (Surabaya: Al-Hidayah, 1971), p. 1073

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Assalamu'alaikum Wr. Wb.

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is considered **acceptable** to be defended after being intensively read and regularly consulted in the area of research content, language, and writing composition.

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CERTIFICATE OF THESIS AUTHORSHIP

I hereby declare that this thesis is originally written by Fajriya Rizqi Rahmawati, students of Islamic Elementary Education Department (PGMI) as the requirement for degree of Sarjana Pendidikan (S.Pd), Faculty of Tarbiyah and Teaching Training at Maulana Malik Ibrahim State Islamic University, Malang. This research writing does not incorporate any material previously written or published by other parties to achieve the other *Sarjana* status of ather Higher Tertiary Education, except those which are indicated in the notes, quotation, and bibliography. Therefore, I am the only person who is responsible for the thesis if there is any objection or claim from others.

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PREFACE

بِسْمِ ٱللَّهِ ٱلرَّحْمَٰنِ ٱلرَّحِيمِ

Assalamu'alaikum Wr. Wb

Praise author prayed to Allah the Almighty, who has given grace, *taufiq*, and His guidance. Only by the power of him the thesis with the title "THE STRATEGY OF TEACHER IN REDUCING THE MISCONCEPTION OF SCIENCE LEARNING IN MATERIAL OF FORCE AND MOTION AT FIFTH GRADE OF SDI MOHAMMAD HATTA MALANG" can be completed on time.

Sholawat and salam is always delegeted to be Prophet Muhammad SAW, who has been brought the Islamic religion from the darkness to the lightness.

Hopefully with the completion of this thesis by the title "The Strategy Of Teacher In Reducing The Misconception Of Science Learning In Material Of Force and Motion At Fifth Grade Of SDI Mohammad Hatta Malang" providing benefits to all parties.

This thesis describes abot the strategy of teacher of teacher in reducing the misconception of science learning in material of force and motion. Researcher looked for the data about the implementation of teaching and learning, strategy of teacher in reducing the misconception of force and motion, and the obstacle in reducing the misconception at fifth grade of SD Islam Moh. Hatta Malang.

With the completion of this report, the autors do not forget to say thanks to:

1. Beloved father and mother who always give me prayers and support, both moral and material that was never able to replace it with anything.

2. Prof. Dr. H. Abd. Haris, M.Ag, as the Rector Maulana Malik Ibrahim State Islamic University Malang.
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4. H. Ahmad Sholeh, M.Ag, as Chairman of Islamic Elementary Education Department at Maulana Malik Ibrahim State Islamic University Malang.
5. Dr. H. Nur Ali, M.Pd, as thesis advisor.
6. The teacher and students of fifth grade at SD Islam Moh. Hatta Malang. Especially to Mr. Tomi Ariansyah, S.Pd and Mr. Eko Cahyono, S.Pd, as teacher class of fifth grade.
7. All my friends in the International Class Program of Islamic Elementary Education Department; Ratna, Rima, Anisah, Osy, Nabilah, Alwi, Elma, Umi, Firdausi, Elma, Anny, Tsalats, De Nanda, Rahmah, Risda, Rizkya, Rizka, Tutut, Azizah, Fina, Nikmah, Nurul, Yulia, and Miyah.

The autors are aware that in the preparation of this report there still many shortcomings, the author critiques and suggestions are expected to improve the preparation of the next report. Hopefully, this thesis provides benefits to all partie. Amin Yaa Rabbal Alamin.

Malang, on May 4th, 2018

Author,

Fajriya Rizqi Rahmawati

PEDOMAN TRANSLITERASI ARAB LATIN

Penulisan transliterasi Arab-Latin dalam skripsi ini menggunakan pedoman transliterasi berdasarkan keputusan bersama Menteri Agama RI dan Menteri Pendidikan dan Kebudayaan RI No. 158 Tahun 1987 dan No. 0543 b/U/1987 yang secara garis besar dapat diuraikan sebagai berikut:

A. Huruf

ا	=	a	ز	=	Z	ق	=	Q
ب	=	b	س	=	s	ك	=	K
ت	=	c	ش	=	Sy	ل	=	L
ث	=	ts	ص	=	Sh	م	=	M
ج	=	j	ض	=	di	ن	=	N
ح	=	h̲	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. Vokal Panjang

Vokal (a) panjang	=	Â
Vokal (i) panjang	=	Î
Vokal (u) panjang	=	Ŭ

C. Vokal Diftong

اَوْ	=	Aw
اَيْ	=	Ay
اُوْ	=	Ŭ
اِيْ	=	Î

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ABSTRAK

Rahmawati, Fajriya Rizqi. 2018. ***Strategi Guru Dalam Memperbaiki Miskonsepsi Pembelajaran IPA Pada Materi Gaya dan Gerak Kelas V SDI Moh. Hatta Malang.*** Skripsi. Jurusan Pendidikan Guru Madrasah Ibtidaiyah, Fakultas Ilmu Tarbiyah dan Keguruan, Universitas Islam Negeri Maulana Malik Ibrahim Malang

Dosen pembimbing:

Dr. H. Nur Ali, M.Pd

Penelitian ini bertujuan untuk memahami: (1) pelaksanaan pembelajaran IPA pada materi Gaya dan Gerak di kelas V SDI Moh. Hatta Malang, (2) strategi guru dalam memperbaiki miskonsepsi pembelajaran IPA pada materi Gaya dan Gerak di kelas V SDI Moh. Hatta Malang, dan (3) kendala dalam memperbaiki miskonsepsi pembelajaran IPA pada materi Gaya dan Gerak di kelas V SDI Moh. Hatta Malang.

Penelitian ini menggunakan metode kualitatif. Teknik pengumpulan data menggunakan wawancara, observasi, dan dokumentasi. Data dianalisis menggunakan model analisis interaktif yang terdiri dari *data collection, data reduction, data display,* dan *conclusion.* Pengecekan keabsahan data dilakukan dengan triangulasi sumber data, triangulasi teknik pengumpulan data, dan pengecekan anggota.

Hasil penelitian ini menunjukkan bahwa: (1) pelaksanaan pembelajaran IPA di kelas V SDI Moh. Hatta Malang menerapkan layanan pendidikan di dalam dan di luar kelas dan pembelajaran disesuaikan dengan karakteristik siswa, (2) strategi guru dalam memperbaiki miskonsepsi pembelajaran IPA pada materi Gaya dan Gerak di kelas V SDI Moh. Hatta Malang antara lain; mengidentifikasi konsep-konsep IPA yang berpotensi terjadi miskonsepsi kepada siswa, menuliskan hasil identifikasi tersebut dalam table, membuat langkah-langkah pembelajaran untuk mengatasi miskonsepsi, memberikan target capaian belajar, dan koordinasi antar guru, dan (3)kendala memperbaiki miskonsepsi pembelajaran IPA pada materi Gaya dan Gerak di kelas V SDI Moh. Hatta Malang meliputi; konsep awal siswa yang berbeda-beda, kesulitan memahamkan konsep yang abstrak., minimnya fasilitas yang menunjang, ruang media pembelajaran yang belum representative, dan siswa berguarau ketika kegiatan pembelajaran.

Kata Kunci: *Strategi Guru, Miskonsepsi IPA, Gaya dan Gerak*

ABSTRACT

Rahmawati, Fajriya Rizqi. 2018. ***The Strategy Of Teacher In Reducing The Misconception Of Science Learning In Material Of Force and Motion At Fifth Grade Of SDI Mohammad Hatta Malang***.Thesis. Islamic Elementary Education Department, Faculty of Tarbiyah and Teaching Training, Maulana Malik Ibrahim State Islamic University Malang.

Advisor:

Dr. H. Nur Ali, M.Pd

This study aims to understanding: (1) knowing the implementation of science learning in the material of Force and Motion at Fifth Grade of SD Islam Moh. Hatta Malang, (2) knowing the strategy teacher in reducing the misconception of science learning in the material of Force and Motion at Fifth Grade of SD Islam Moh. Hatta Malang, and (3) knowing the obstacles in reducing the misconception of science learning in the material of Force and Motion at Fifth Grade of SD Islam Moh. Hatta Malang.

This study uses qualitative. The data collection techniques are interview, observation, and documentation. The data are analyze using an interactive model, consisting of data collection, data reduction, data display, and conclusion. Checking the data validity is done by triangulation of data source, triangulation of data collection techniques, and members checking.

The result of this study indicate that: (1) the implementation of science learning in the material of Force and Motion at Fifth Grade of SD Islam Moh. Hatta Malang is needs the learning implemented in the classroom and outside the classroom and the materials tailored to the characteristics of the students, (2) the strategy teacher in reducing the misconception of science learning in the material of Force and Motion at Fifth Grade of SD Islam Moh. Hatta Malang, are; identification the concepts in science learning, write the identification in table, create the steps of learning in reducing the misconceptions, giving the target of learning achievement, and coordination between teachers, and (3) the obstacles in reducing the misconception of science learning in the material of Force and Motion at Fifth Grade of SD Islam Moh. Hatta Malang, are; preconceptions' students are not true, difficulty understands abstract concepts, the lack of supporting facilities, instructional media space that has not been representative, and students joked when learning activities.

Kata Kunci: *Teacher's strategy, Misconception of Science Learning, Force and Motion*

مستخلص البحث

فجريا رزقي رحمواتي. ٢٠١٨. **إستراتيجية المعلم في إصلاح المفاهيم الخاطئة لعلوم الطبيعية في مادة الأناقة والحركة بالصف الخامس في مدرسة الإبتدائية محمد هاتا بمالانق.** قسم تربية المعلمين للمدرسة الإبتدائية كلية علوم التربية و التعليم جامعة مولانا مالك إبراهيم الإسلامية الحكومية مالانق.

المشرف:

الدكتور نور على الماجستر.

يهدف هذا البحث إلى فهم: (١) تنفيذ تعلم علوم الطبيعية في مادة الأناقة والحركة بالصف الخامس في مدرسة الإبتدائية محمد هاتا بمالانق، (٢) ومعرفة إستراتيجية المعلم في تحسين المفاهيم الخاطئة لتعلم علوم الطبيعيةفي مادة الأناقة والحركة بالصف الخامس في مدرسة الإبتدائية محمد هاتا بمالانق، (٣) المشكلات في تصحيح المفاهيم الخاطئة في تعلم علوم الطبيعيةفي مادة الأناقة والحركة بالصف الخامس في مدرسة الإبتدائية محمد هاتا بمالانق.

هذا البحث يستخدم المدخل النوعية. وأسالب في جمع البيانات باستخدام المقابلات والملاحظة والوثائق. البيانات في التحليل باستخدام نموذج التحليل التفاعلي الذي يتكون من جمع البيانات وإعداد البيانات وصنع البيانات. يتم التحقق من صحة البيانات مع تثليث مصادر البيانات، وتثليث تقنيات جمع البيانات، وفحص الأعضاء.

ونتائج من هذا البحث الحامعي هي: (١) تنفيذ تعلم علوم الطبيعية في مادة الأناقة والحركة بالصف الخامس في مدرسة الإبتدائية محمد هاتا بمالانق وتطبيق خدمات التعليم من داخل وخارج الفصول الدراسية والتعلم وفقا لخصائص الطلاب (٢) واستراتيجية المعلم في تحسين الفهم الخاطئ في التعلم تعلم علوم الطبيعيةفي مادة الأناقة والحركة بالصف الخامس في مدرسة الإبتدائية محمد هاتا بمالانق و منها: تحديد المفاهيم الخاطئة المحتملة

للطلاب، كتابة نتائج تحديد الفحص في الجدول، وجعل خطوات التعلم للتغلب على المفاهيم الخاطئة، وتوفير إنجاز التعلم. والتنسيق بين الطلاب، و (٣) ومشكلات لتحسين الفهم الخاطئ لتعليم علوم الطبيعيةفي مادة الأناقة والحركة بالصف الخامس في مدرسة الإبتدائية محمد هاتا بمالانق وتشمل فيها: المفاهيم المبدئية المختلفة، وصعوبة المفاهيم التجريدية، ونقص المرافق الداعمة، وكان الطلاب مزدحمين عند الأنشطة تعليم.

الكلمة الرئيسية: إستراتيجية المعلم، المفاهيم الخاطئة في علوم الطبيعية، التصميم والحركة.

CHAPTER I

PREFACE

A. Background of The Research

Education is a conscious effort and aims to develop human qualities. For the sake of developing quality human, then education is very important to give to the students. Important education is given to students for education as the transmission of knowledge or the process of building a human become educated. One way that is used to provide education to students is through school. The statement was based on the notion that a school is a group of services that provide education in formal, non-formal, and informal at all levels and types of education. Schools provide knowledge to students through a wide variety of subjects. The subjects were held in the Indonesian schools by the Education Unit Level Curriculum (SBC) is a religious education, citizenship, language, mathematics, science, social studies, art and culture, physical education and sport, or vocational skills, as well as local content.[3]

Based on the foregoing, the Natural Sciences is one of the subjects that will be taught to students through the elementary school level. Science education in primary schools aims to enable students to master knowledge, facts, concepts, principles, the process of the invention and has a scientific attitude, which will be useful in the study of self and nature.

[3] Enco Mulyasa, *Kurikulum Tingat Satuan Pendidikan* (Bandung: Remaja Rosdakarya, 2006), p. 2

Natural Sciences contains about concepts related to habitual activity, it is important for students to understand. In fact, there are still many students who found it difficult to understand the concepts that exist in science subjects, especially physics. Natural Sciences in particular Physics is a lesson to learn the concepts of a concept that is simple to more complex concepts. Physics is the most fundamental science because it deals with the structure and behavior of objects.[4] In science subjects Physics, teachers have to teach the basic concepts, but there are still many students who have a low understanding of the concept of the material being studied, resulting in misconceptions.

To be a teacher in the learning activities can be optimally organized and professional education then a teacher requires a basic and thorough knowledge about the process of learning activities and the steps to be taken to realize a quality learning. So that the tasks as a teacher can be performed well and of course the purpose of learning can also be fulfilled, including in addressing students' conceptions so as not to misconceptions.

Many learners are confused by the concept of Force and Motion. In Physics, the term "Force" and "Energy" are interchangeable. Some learners connect forces with an action and motion. Then they catch that if there is no force, there will be no movement. As a result, they think that when there is no motion at all, there is no force. For example, if one pushes a car and the car moves, learners say there is a working force on the car. However, if the car does not move, they say that there is no force on the car, even if the person

[4] Douglas Giancoli, *Fisika*. Edisi kelima Jilid 1 (Jakarta: Penerbit Erlangga, 2001), p. 1

pushes the car with great energy. In physics even though the train does not move, there is still a force working on it.

The science learning should be designed to realize the students' learning experience so as to build the preconception of the students correctly, so as to avoid misconceptions on students after the learning process takes place. One plan that must be possessed by the teacher to understand the student in the learning process is a teacher must have a strategy in the field of education, with a strategy of a teacher will have guidelines in learning activities which can make the learning process becomes more systematic and in accordance with the need for the material to be conveyed by a teacher, so the strategy can help to facilitate the teachers to meet the learning objectives. By learning strategy is also a teacher will be more focused in the delivery of lessons that make learning will be more smoothly and effectively. Therefore, one way or the steps that a teacher can have and develop strategies so teachers must master the knowledge and insight regarding the nature of learning, as well as a variety of teaching methods or techniques and their use, skills teaching, and components associated with the smooth process of learning. So by controlling these factors, a teacher can always develop useful strategies to implement good teaching and learning activities and quality.

In a learning activity, there is often a wide range of obstacles that make teaching and learning activities to be disrupted. One of the obstacles that occur in the learning process are the concepts presented by the teacher cannot be accepted by learners well or called misconceptions. The misconception is

the students' conceptions of knowledge about construction results that do not fit or different from concept scientific experts.[5] Misconceptions experienced by each student in a class may vary from one to another with a different cause anyway. Therefore, it is very important for teachers to identify misconceptions and causes that occur in students.

According to the results of observations and interviews conducted by investigators on October 16, 2017 in SD Islam Moh. Hatta Malang, obtained the information that there are problems encountered in science teaching in fifth grade. After the researchers conduct in-class observations, that misconceptions caused by the initial concept obtained by students. Be said that, there are obstacle in teaching and training at SD Islam Moh. Hatta Malang, are; difficulty understand about abstract concept by fifth grade and also there is no the room media to support the learning activity.

The student's misconception by fifth grade in SD Islam Moh. Hatta Malang does not develop by itself, but is caused by a learning methods given earlier, students also reads the book before without understood. Then, the misconceptions are very difficult to change by teacher. Many misconceptions come a lot appears in childhood and is very difficult to be solved until they got a structured activity. The misconception is due to hear or see the events in everyday life.

This needs urgent repair of teachers so that misconceptions are not attached to the students, so teachers need to improve the method or way of

[5] Paul Suparno, *Miskonsepsi dan Perubahan Konsep Dalam Pendidikan Fisiska*. Jakarta: Grasindo, 2005), p. 35

teaching in the class, so that students can understand the material being taught and experienced no misconceptions.

From the description above, the writer is interested in conducting research on the process of science teaching at fifth grade of SD Islam Moh. Hatta Malang entitled "Strategy of Teacher In Reducing the Misconception of Science Learning In Material of Force and motion at Fifth Grade of SD Islam Moh. Hatta Malang"

B. Focus of the Research

1. How teacher manage teaching and learning in the material of science at Fifth Grade of SD Islam Moh. Hatta Malang?
2. How are teachers strategies in reducing the misconception of science learning in the material of Force and motion at Fifth Grade of SD Islam Moh. Hatta Malang?
3. How is an obstacle in reducing the misconception of science learning in the material of Force and motion at Fifth Grade of SD Islam Moh. Hatta Malang?

C. Objectives of the Research

Based on the above research focus, the purpose of this research is:

1. Knowing how teacher manage teaching and learning in the material of science at Fifth Grade of SD Islam Moh. Hatta Malang.

2. Knowing the strategy teacher in reducing the misconception of science learning in the material of Force and motion at Fifth Grade of SD Islam Moh. Hatta Malang.
3. Knowing the obstacles in reducing the misconception of science learning in the material of Force and motion at Fifth Grade of SD Islam Moh. Hatta Malang.

D. Benefit of Research

This research is expected to provide benefits theoretically and practically, in order in reduce the misconception of science learning in the material of Force and motion at Fifth Grade of SD Islam Moh. Hatta Malang. The details of the benefits of this research are:

1. Theoretically

This study is expected to provide an explanation of various information, about the concept and implementation of efforts in reducing the misconception of science learning in the material of Force and motion at Fifth Grade of SD Islam Moh. Hatta Malang.

It is expected that this study can contribute to science in the form of reference data and facts on the ground regarding efforts to rectify misconceptions in students over the location of the subject matter by Force and motion, which will be the subject of a reference in the development of the theory the misconceptions of natural science and subsequent research.

2. Practical

a. For Institutions

The result is expected to be input and resources to discover the advantages and disadvantages of efforts to reduce the misconception of science learning in the material of Force and motion at Fifth Grade of SD Islam Moh. Hatta Malang.

b. For the Maulana Malik Ibrahim State Islamic University Malang

This study is expected to be material to develop further scientific studies on learning strategies, especially in terms of reducing the students' misconceptions on SD / MI in the Graduate Program of the Maulana Malik Ibrahim State Islamic University Malang.

c. For readers and researchers Further

If the results of this research considered to be good and decent, it is expected to be taken into consideration and a reference for subsequent studies. Both in the case of a similar nature, as well as other cases that are relevant.

E. Previous Research

Awareness of the importance of teachers in teaching and learning strategies and learning science concepts in primary school students has prompted scientists, academics, and practitioners to conduct research and scientific study of teaching practice. Here are some of them:

First, Thesis Fiki Aprilia, Students of Elementary School Teacher Education of the State Islamic University of Maulana Malik Ibrahim Malang with the title " *Strategi Guru Dalam Membentuk Sikap Social Siswa Kelas 1 Di MIN Malang 1*" in 2015. This study aimed to describe: 1) the strategy of teachers in shaping social attitudes at first grade of MIN Malang 1, 2) strategies of teachers in shaping social attitudes of students at first grade of MIN Malang 1, 3) supporting the factors and obstacles in the implementation of the strategy of teachers in shaping social attitudes of students in MIN Malang 1.

Second, Adi Wibowo Thesis, Study Program Student Elementary School Teacher of Sanata Dharma University with the title " *Miskonsepsi IPA Fisika Siswa Kelas V SD Negeri Semester 2 Se-Kecamatan Berbah Sleman* " in 2015. This study aimed to describe the existence of misconceptions IPA Physics graders V elementary School Semester 2 sub-district Berbah, Slemah.

Third, Mahendrawan Ersam Thesis, Faculty of Mathematics Study Program Student Teaching and Education University of Muhammadiyah Surakarta with Title "*Upaya Mengatasi Miskonsepsi Siswa Melalui Metode Pembelajaran Delikan (Dengar, Lihat, Kerjakan) Pada Siswa Kelas VIII Semester Genap SMP Muhammadiyah 2 Surakarta"* in 2012. The purpose of this study was to describe the efforts of teachers in addressing student misconceptions at VIII Class SMP Muhammadiyah 2 Surakarta related Delikan learning methods (Look, See, Do),

More specifically, this research position among previous studies can be seen in the following table:

Tabel 1.1
Previous Research

No.	Researcher, the Title and Research Year	Similarity	Diverification	Previous Research
1.	Fiki Aprilia's Thesis, *Strategi Guru Dalam Membentuk Sikap Social Siswa Kelas 1 Di MIN Malang 1*, 2015	- Research focus is the strategy of teacher in learning - Research approach is Kualitatif	- Research focus is described of strategy in shaping the social attitude	The focus of this research is described, how to the strategy of the teacher in reducing the misconception of science learning in five grade.
2.	Adi Wibowo's Thesis, *Miskonsepsi IPA Fisika Siswa Kelas V SD Negeri Semester 2 Se-Kecamatan Berbah Sleman*, 2015	- Research focus is student's misconception in science learning - Research subject is five grade	- Research subject is five grade in subdistrict	
3.	Mahendrawan's Thesis, *Upaya Mengatasi Miskonsepsi Siswa Melalui Metode Pembelajaran Delikan (Dengar, Lihat, Kerjakan) Pada Siswa Kelas VIII Semester Genap SMP Muhammadiyah 2 Surakarta*, 2012	- Research focus is the strategy of teacher in reducing the student's misconception	- Research subject is third class of junior high school - The resolve of misconception is which Delikan method	

F. Definition of Key Terms

1. The strategy is a program teacher or teacher-planned steps used to achieve goals or future goals that have been determined.
2. The misconception is a concept that is incompatible with a scientific understanding or knowledge received by experts in that field.
3. Natural Science is a science which deals with natural phenomena that are more uncertain because it is based on human observation trial and measured manner.
4. Misconception Natural Sciences is an incorrect understanding of the concept of science.

G. Compositions of Research Findings

In the discussion of this paper is divided into five chapters. As for ease of discussion and understanding in the preparation of this paper, the researchers will propose systematic discussion as follows:

Chapter I Preface, contains a general overview that covers the background of the research, the focus of the research, objectives of the research, the benefits of research, previous research, the definition of key term and compositions of research findings. This thesis examines the strategies of teachers in reducing a misconception in a subject matter of at Fifth Grade of SD Islam Moh. Hatta Malang.

Chapter II review of the literature, the author outlines a general overview about the teacher in the learning strategy, explained the strategy learning of

nature in elementary school, describe the purpose and goals of reducing the misconception of nature learning on students, and introduce the content of the subject matter of Force and motion.

Chapter III Research methods, describe the approach and research design used by the researcher during the research process. Sets the location that is used to get the data and data sources, techniques conducted by researchers in collecting data. Procedure for research or the stages in conducting research, ranging from the preparation, execution, and result processing the data, and then the data validity.

Chapter IV Research findings, describe the results of research in the form of presentation of data obtained by researchers. Includes teacher's strategy and obstacles in reducing the misconception of science learning in material of Force and motion at Fifth Grade of SD Islam Moh. Hatta Malang.

Chapter V Research discussion, discuss about results of the research in four chapters. The research analysis from the result of research focus. Answering the research focus, refer to objectives of the research, and explain the implications from the result of the research.

Chapter VI Closing, which consists of conclusions and suggestions. While at the end of writing this essay is a list of libraries, and attachments.

CHAPTER II

REVIEW OF RELATED LITERATURE

A. Theoretical Framework

1. Teacher

a. Understanding of The Teacher

Teachers are educators who provide of science to students in school. With it's scientific, teachers guide students in developing their potential. Teachers have a personality that fits their background before becoming a teacher. Personality and the views of teachers and educational background and teaching experience greatly affect the quality of learning. Teacher is a unique human being that has its own character, this character will cause a difference in learning situations created by each teacher varies.[6]

According to the traditional view, the teacher is the one who stands in front of the class to deliver science. According to the teachers union of the United States, teachers are all officers involved in the tasks of education. According to Balnadi Sutadipura, teachers are eligible *digugu* and *ditiru*. Based on a number of sources it can be concluded that a teacher is not just a giver of knowledge to the students or by Soepardjo Adikusumo "give the information" in front of the class. However, he was a professional force that can make

[6]Pupuh Fathurrohman and Sobry Sutrikno, Teaching and Learning Strategies (Bandung: Refika Aditama, 2009), hlm.43

students able to plan, analyze and conclude the problems encountered. Thus, a teacher let aspiring, educated broad, strong and tough personality and a deep human.[7]

b. Teacher's Task and Role

Teachers as professional work, holistic are located at the highest levels in the national education system. Because teachers in performing their professional duties have a strong autonomy. The task of the teacher is very much both associated with the workplace and the profession in schools. According to Roestiyah NK, teacher's task outline that is inherited culture in the form of skills, knowledge and experience of empiric to his student, shaping the personality of the students in accordance with the basic values of the state, ushering students become active citizens, the function themselves as media and intermediaries learning for pupils, directing and guiding the child to have the maturity to speak, act and behave, the function ourselves as a liaison between the school and community environment.[8] Roestiyah N.K of affirmation could be confirmed that the teacher responsible for finding a way to achieve the life of the students in the narrow sense and the nation in a broad sense.

In performing the duties of teachers is not limited to words, but also in the form of behaviors, actions, and examples. By Anwar and

[7] Syarifuddin Basyiruddin Nurdin and Usman, *Guru Profesional dan Implementasi Kurikulum* (Jakarta: Ciputat Pers, 2002), hlm.7

[8] Syaiful Segala, *Kemampuan Profesional Guru dan Tenaga Kependidikan* (Bandung: Alfabeta, 2009), p. 12

Sagala experience shows the attitude and behavior are much more effective compared to words that were not accompanied by a real charity.[9] Teachers in carrying out its role, namely as an educator, teacher, leader, administrator, must be able to serve learners based on the awareness, confidence (belief), discipline and responsibility optimally so as to provide a positive influence to the optimal development of students, both physically and psychologically.[10]

Teachers as the holder of the autonomy of the class or reformer class can carry out its role as follows, the first teacher as an educator, role of teachers as educators have a responsibility that is deeper and broader in the world and the hereafter, whether they are intellectual, moral, emotional, cinestetic, and aesthetics. There is an assumption that states, with life sciences, becomes easy with live art to be beautiful, with religious life becomes focused. Both the teacher as a teacher, in connection with the teacher's role as a teacher, here are presented some of the forces of teaching that is, the teaching force of the classic role of the teacher here dominant in delivering the materials and learners accept it, then the teaching force technologies teachers here also acts as a facilitator in the process learners. Personalized teaching force teachers act as facilitators' data implementation of learning, learners, considering the teacher as a person who mastered professional expertise in psychology and

[9] Ibid, p. 13

[10] Nanang Hanafiah dan Cucu Suhana *Konsep Strategi Pembelajaran* (Bandung: PT Refika Aditama, 2009), p. 108

methodology. Teacher's teaching force interactional role in creating a climate of mutual dependence in the learning process so as to facilitate the interactive dialogue among learners in an effort to create new ideas that full meaning to life.[11]

The next teacher's role is a teacher as a leader, a teacher as a leader in its class to be able to create a classroom atmosphere that is scientific, religious, and fun. It is said Riawan Amin in his book The Celestial Management, although in this case is modified by the author, teachers must establish the classroom as a place of worship is classes as a place to build a worship then the teacher must build a classroom as a place of wealth that is the place to build prosperity and unseen so that the class be a place to share and soothing several innovative.[12]

The teacher's role The fourth is the teacher as a supervisor, a teacher in performing their duties is a personal being professional, ready cooperative to help its partners reduce their competence, both in container working group of teachers, for teachers of primary schools, as well as in containers deliberation subject teachers for teachers -Teacher secondary school and senior high school. Teachers as administrator, the teacher's role here are responsible for planning,

[11] Ibid, p. 108-110
[12] Ibid, p. 111-113

implementation, assessment, and determine follow-up activities of the learning process in the classroom.[13]

2. Strategy

a. Understanding of The Strategy

In general, the strategy has a basic understanding and guidelines for action in order to achieve specific targets. Anchored by learning strategies could be interpreted as a manifestation of teaching and learning activities to achieve the objectives that have been outlined. Another understanding of the strategy of the word "strategy" is an outline of the bow to act in achieving specific targets. To understand the word "strategy" or "technique" in a more steady, then the explanation is usually associated with the term "approach" or "method".

While the term strategy in a large dictionary Indonesian has to mean: The science and art of using all the resources of the nations to implement certain wisdom in war and peace; science and art of leading an army to face the enemy in the war, in favorable conditions. A careful plan of the activities to achieve specific goals. A good place according to the tactics of war.[14]

[13] Ibid, p. 114
[14] Penyusun, *Kamus Besar Bahasa Indonesia* (Jakarta: Pusat Bahasa, 2008), p. 1377

b. Learning Strategy

In general, the strategy has an idea as an outline of the bow in the act in order to achieve specific targets. Anchored by learning, the strategy could be interpreted as a general pattern of teacher-student activities in the embodiment of teaching and learning activities to achieve the objectives that have been outlined.[15]

According to Hilda Taba, learning strategies are the means chosen by the teacher in the learning process that can provide facilities or facilities for students towards the achievement of learning goals. Also in the learning strategies are methods, the way or the path to achieving the learning objectives. In reaching its destination, open the possibility of choosing various methods appropriate to the circumstances and conditions of the students and the ability of the teacher concerned. In the teaching and learning strategy also contains a teaching technique is the use of teaching aids and or methods using relevant teaching methods in order to encourage or motivate students to learn optimally.

Learning strategy at least includes answers to the question:

1) *Who* do anything and use any tools in the learning process. This activity involves the role of learning resources as well as the use of materials and tools or aids teaching lessons.

[15] Suprihady saputro, dkk, *Strategi Pembelajaran, Bahan Sajian Program Pendidikan Akta Mengajar* (Malang: Universitas Negeri Malang, 2000), p. 21

2) *How* carrying out learning tasks that have been identified (analysis results) so that the task can provide optimal learning results. This activity involves methods and techniques.

3) *When* and *where* the learning activities as well as how long they are carried.

c. Components of Learning Strategy

Dick and Carey say that there are five components of learning strategies, namely learning activity, follow-up activities as part of an overall learning system plays an important role. In this section, teachers are expected to attract the interest of students on the subject matter to be delivered. Submission of information, delivery of information is often regarded as the most important activities in the learning process, but this section is only one component of a learning strategy. That is, in the absence of preliminary activities that attract or motivate learners in studying the activities of delivery of this information would be meaningless. Teachers are able to convey the information properly but do not perform the preliminary activities with smooth face further obstacles in the learning activities. Participants learners, based on the principle of student-centered, the learner is the center of a learning activity. This is known as the SAL (Student Active Training), the meaning of which is that the learning process will be more successful when learners are actively doing exercises directly relevant and appropriate to the learning objectives

that have been defined. The first is a test. A series of tests commonly used by teachers to know a) whether the specific learning objectives have been achieved, b) whether the knowledge attitudes and skills have really owned by learners or not. Then follow-up activities, an activity known as the follow up of the results of activities that have been done are often not adhered to by the teacher. In fact, each time after the test is done always there are learners who successfully by good or above average, (a) only controls part or inclined at an above average level of mastery that is expected to be achieved, (b) learners should receive follow-up is different as a consequence of these various learning outcomes.[16]

d. Learning Strategy in Elementary School

To reduce the quality of learning and learning outcomes of one of the activities is the use of appropriate learning strategies and in accordance with good and appropriate strategies will produce quality learning. Forms of learning strategies that suit a wide range of fields and objectives of learning, therefore we need the ability to select appropriate learning strategies to the learning objectives.

The learning process is something that is done to convey the material to the students of that teacher resources. This learning strategy is the first step that must be known before the teachers do the teaching and learning process to the students in the classroom.

[16] Hamzah B. Uno, *Model Pembelajaran* (Jakarta: PT Bumi Aksara, 2007), p. 3-7

Many kinds of learning methods will allow teachers to deliver the material to the recipient of that student. A teacher will surely implement a learning strategy that good produce a feat to his student. With a good strategy the teacher will be easier to teach, as well as students will more easily receive the material from the source of the information.

There are several types of learning strategies that can be applied in teaching and learning, among others:

1) Learning Strategies Expository

The expository strategy is a learning strategy that emphasizes the verbal process of delivering material from a teacher to a group of students with the intention that students can master the subject matter is optimal. Characteristics strategy expository include: (a) strategy expository done by delivering course material verbally, that is spoken verbally is a key tool in doing this strategy, therefore, often the identification with lectures, (b) is usually the subject matter presented is material a lesson that is so, such as data or facts, certain concepts to be memorized so it does not require students to think again, (c) the main purpose of learning is mastery of the subject matter itself.

2) Inquiry Learning Strategy

This learning strategy emphasizes the process of seeking and finding. The subject matter is not given directly. The role of the

student in this strategy is to seek and find himself the subject matter; while teachers act as facilitators and mentors students to learn. Inquiry learning strategy is a series of learning activities that emphasize the process of thinking critically and analytically to seek and find their own answer to the problem in question. The thinking process itself is usually done through a question and answer between teachers and students. The characteristics of inquiry learning, among others; (a) the strategy of inquiry to stress to students the maximum activity to seek and find, which means that the strategy of inquiry put the student as a subject of study. In the learning process, students not only acts as a receiver lesson through the teacher's explanation verbally, but their role is to find their own core of the subject matter itself, (b) all activities performed students are directed to seek and find the answers themselves from something that is questionable, which is expected to grow attitude of confidence {self belief). Thus, inquiry learning strategy puts the teacher not as a source of learning, but as a facilitator and motivator of student learning. Learning activities are usually done through a process of questions and answers between teacher and student. Therefore, the ability of teachers to use questioning is the main requirement in conducting an inquiry, (c) the purpose of the use of inquiry learning strategy is to develop the ability to think systematically, logical, critical, or develop intellectual abilities as part of the mental process. Thus, the

students' inquiry learning strategy not only required in order to master the subject matter but how they can use their potential. The man who just learned the lesson not necessarily optimally develop thinking skills; but on the contrary, students will be able to develop the capacity to think when he could master the subject matter. The man who just learned the lesson not necessarily optimally develop thinking skills; but on the contrary, students will be able to develop the capacity to think when he could master the subject matter. The man who just learned the lesson not necessarily optimally develop thinking skills; but on the contrary, students will be able to develop the capacity to think when he could master the subject matter.

3. Concept

a. Understanding of Concept

A concept is a unit of meaning which represents a number of objects that have the same characteristics. People who have a concept able to make abstraction of the objects encountered, so that objects placed in certain groups. The concept can be represented in the form of a word (symbol languages).[17] The concept can be obtained from the incident meets, both positive and negative. Once acquire concepts, study participants will be able to recognize things

[17] Bahri Djamarah, *Psikologi Belajar* (Jakarta: PT Rineka Cipta, 2011), p. 30

or events and are able to provide verbal The definition of the concept.[18]

While the concept of differentiated on concrete concepts and concepts should be define.[19] The concrete concept is the notion that refers to objects in the physical environment. These concepts represent certain objects, such as tables, chairs, cars, and so on. The defined concept is a concept that represents the reality of life but does not directly point to the reality of the physical environment, because the reality is not incorporated. For example, cousin, etc., are words that cannot be see with the naked eye, even with a microscope though.

Based on the opinion of the experts that have been submitted can be said that a concept is a unit of both positive and negative meanings acquired recipient concept of events encountered.

b. Understanding of the Construct

According to Berg understanding of each student toward a concept called conception.[20] For example, if the same two magnetic poles, namely the north and north brought near, it will get the pupils who have a different understanding of each other on the magnet concept. There is an understanding that the magnets repel each other, there are also students who have an understanding that the magnets

[18] Anisah Basleman and Syamsu Mappa, *Teori Belajar Orang Dewasa* (Bandung: PT Remaja Rosdakarya, 2011), p. 67

[19] Bahri Djamarah, *Psikologi Belajar* (Jakarta: PT Rineka Cipta, 2011), p. 31

[20] Suryanto, *Pemahaman Murid Sekolah Dasar (SD) Terhadap Konsep-konsep Ilmu Pengetahuan Alam (IPA) Berbasis Biologi: Suatu Diagnosis Adanya Miskonsepsi*., 2002, p. 13

do not want to unite, there also have an understanding of magnetism are pushed or styling.

Conception is the ability to understand the concept, both derived from the senses as well as environmental conditions. The conception of a person different from another person's conception, conception is derive from the word to conceive that means how to receive. Based on the opinions that have been submitted by the expert concluded that a person's conception is an understanding of the concept.

c. Understanding of the misconception

Misconceptions or wrong concept refers to a concept that is incompatible with a scientific understanding or definition is accepted expert in that field. According to Fowler explained that the misconception is an inaccurate understanding of the concept, the use of the wrong concept, classification examples wrong, the chaos of different concepts, and relationships concepts that are not true.[21] Examples of misconceptions as follows, if a push of a train and the train moving, students say there is a force act on the carriage. But when the train was not moving, students say there is no force acting on the train, even if that person pushing a stroller with a great force. According to physics, although the train does not move, there remains a force that works.

[21]Paul Suparno, *Miskonsepsi dan Perubahan Konsep Dalam Pendidikan Fisiska* (Jakarta: Grasindo, 2005), p. 4-5

Errors or misconceptions is the concept of conception there is a difference between people with each other in learning a concept to grasp the meaning of the concept through the process of perception through the stages of recording information. Based on some of the opinions that have been mentioned, it can be concluded that the misconception is the understanding of the concept of someone who is different from scientific concepts predetermined by experts.

d. The Cause of misconception

The cause of misconceptions can be summarized into five groups: students, teachers, textbooks, context, and methods of teaching. For more details, will be explained as follows:

1) student

Misconceptions come from students can be grouped in several ways, among others:

a) Preconception

Many students already have initial concepts or preconceptions about a matter before the student following the formal lessons under the guidance of teachers. This initial concept often contains misconceptions. One of the initial concepts is clearly going to lead to misconceptions in physics lessons while following the next until the error was corrected. These preconceptions are usually obtained from parents, friends, school early, and experience in the student environment. For

example from everyday life experience, that is about sunrise and sunset. Students found that the sun around the earth as the sun rises from the east, then walk on the earth, and finally sets in the west. The student misconception that the sun around the earth. The concept expressed by the student is wrong,

b) Associative Thinking Students

Association of students to the terms of every day sometimes also creates misconceptions. For example, students associate the force with action or movement. Force by many students considered always causes movement. So if students do not see object moves, they make sure there is no force.

c) Humanistic thought

Students often looked at all objects from human sight. The behavior of objects conceived as a living human behavior, so it is not suitable. For example, student's misconceptions will be conservation of energy. A when the work is ongoing or continuous play will feel tired and hungry. From experience as a human being hungry and running out of energy when it continues to work, students assume that conservation of energy is not possible. Existing energy must be reduce and disappeared. Students are not easy to get out of this human thinking.

d) Reasoning The Incomplete / Incorrect

Misconceptions can also be cause by a student's reasoning or the reasoning is incomplete or incorrect. Detailed reasons can be caused due to incorrect logic in reaching conclusions, resulting in misconceptions. For example, students know that the planet Earth including, the student is considered that all the planets in our solar system like Earth. Means the planets are plants, water, force, gravity, hard stones, and others.

e) Intuition Wrong

Intuition is wrong and feelings of the students can lead to misconceptions. Intuition is a feeling in a person, who spontaneously expressing attitudes or ideas about something before it objectively and rationally examined. Examples of students sometimes have great intuition, that object will be in free fall faster than smaller objects. This intuitive thinking often makes students not critical and lead to misconceptions.

f) Students Cognitive Development Phase

Cognitive development of students who are not in accordance with the material that was involved may be the cause of the misconceptions students. In general, students who are still in the stage of concrete operations when learning something abstract material difficult to catch and often misunderstand the concept.

g) ability Students

The ability of students also has an influence on student misconceptions. Students, who are less talented or less able physics in the study of physics, often have trouble grasping the concept that is actually in the process of learning.

h) Student Interests

Students interested in physics tend to have misconceptions lower than students who are not interested in physics. Students will not be interested in learning if one catches a material, often students are not interested in looking for what is right and change misconceptions. As a result, it will be easier to recording errors or misconceptions.

2) Teacher

Misconceptions students may also occur due to misconception brought about by a physics teacher. Teachers who do not master the material or understand the physics of materials improperly will cause a student to get misconceptions.

3) Book

a) Textbook

Textbooks also lead to misconceptions. Either because the language is difficult to understand or because the description is not correct, misconceptions continue. The researchers found that some of the misconceptions come from a textbook.

b) Science Fiction Books

Often the author makes the idea less based on the rules of physics that real science. For example fictional movement character movement in the air which sometimes do not heed the laws of physics. As a result, in the child embedded value and understanding is not correct.

c) Cartoons

Cartoons in the magazine Science can often emerge and cause misconceptions in students if they do not heed the laws and theories of physics apply.

4) Context

a) Experience

The student experience can lead to misconceptions. We can see it in the case of conservation of energy. In everyday life, the student experience, that they will feel tired after working hard. The motor will run out of fuel when used for too long and the fuel is not replenished. It appears that the energy is lost and not eternal. Here the students are thinking about energy in a limited sense and not in the broad sense.

b) A daily convertation

Some misconceptions come from a daily language that has another meaning in physics. For example, in daily language

those students understand and use the terms weight and kg. However, in physics, weight is a force, and the unit is Newton.

c) Other friends

The young people were very happy to learn in a group with the friend's group. The group is often dominated by a few people whose voices vocals. When students are dominant or vocal that has the misconception, then obviously they can affect other students in terms of misconceptions.

d) Beliefs and Religious Teachings

Religious beliefs or students can also be the cause of the misconceptions in the field of physics. Beliefs or religious teachings are believed to be less precise often makes students unable to accept the explanation of science.

5) Teaching methods

Some of the teaching methods used by teachers, especially those emphasizing only one aspect of the concept of material that was involved, although help students capture the material, but often have a bad effect that raises student misconceptions.[22]

e. How to Identify the Misconceptions

To detect the occurrence of misconceptions, can be done in various ways, among others: through concept maps, in-depth interviews, and interactive discussion in the classroom.

[22] Ibid, p 35-49

1) Concept maps

Concept maps can be used to detect misconceptions of students in the field of physics. Concept maps that reveal meaningful relationships between concepts and emphasize the principal ideas, which are arrange hierarchically, can clearly reveal student misconceptions in the concept map. Usually misconceptions can be seen in the proposition that one and the absence of full relations between concepts.

2) Multiple Choice

Some researchers use multiple-choice questions that have been combined with certain reason. So reasons-why are pre-selected. This model was chosen, usually with the excuse to make it easier to analyze. The weakness of this model is the reason students are not listed in the selection, not terungka

3) Written Essay Test

From these tests it can be seen misconception that brought students and in what areas. Once found the misconception, it can be several students were interviewed to learn more about why they have such idea.

4) Diagnosis interview

Interviews can be freely shaped and structured. In a free interview, teachers or researchers are free to ask the students and the students could freely answer. While in structured interviews,

questions have been prepared and the order also outlines already drafted, making it easier in practice.

5) Discussion in the Classroom

In the classroom students are asked to express their gagsan of concepts already taught or be taught. From the discussion in the classroom can be detected as well as whether or not their idea itutepat.

6) Practicum with Question

Practical accompanied by a question and answer between teachers and students who perform lab can also be used to detect whether students have misconceptions about the concept in the lab or not. During the lab, the teacher always asks how the concept of the student and how the student to explain the problems in the lab.

Based on expert opinion can be concluded that the way to detect misconceptions in students is to use the concept maps, multiple-choice tests, essay tests, diagnostic interviews, discussion in the classroom and practicum with a question and answer session. In this study, researchers used a multiple-choice test and an essay to detect misconceptions in students. In a multiple-choice test, the researcher gives reason to be filled by students in the form of true and sure option was not sure exactly to the selected answer.

4. The Nature of Science

Natural Science is often referred to briefly as a Science. In English: Science comes from the Latin "*scientia*" which means (1) knowledge of, or know about; (2) knowledge, understanding, understand the true and deep. Science or Science undergoing expansion and refer to the nature of knowledge that is more uncertain because the observed symptoms are relatively tangible and measurable.[23] In the development of science is used to refer to nature and have knowledge of natural objects and phenomena of nature are often as natural sciences.

Natural science is a translation of the English word that is natural science, natural science means. Science is about natural phenomena systematically arranged based on the experimental results and observations made by humans. Natural Sciences is referred to as the study of the events that occur in nature. Natural science as a discipline is also known as natural science product which is shaped in the form of facts, concepts, principles, and theories of science.[24] Facts in science learning is a statement about the objects that actually exist, and the events that actually occur and are confirmed objectively. Concepts in Science is an idea that connects several facts that already exist. Natural science has an analytical principle because it is an amalgamation of the concepts of Science.

[23] Surjani Wonoraharjo, *Dasar-dasar Sains Menciptakan Masyarakat Sadar Sains* (Jakarta: PT Indeks, 2010), p. 11

[24] Iskandar Srini M, *Pendidikan Ilmu Pengetahuan Alam (IPA)* (Bandung: Maulana, 2001), p. 3

Natural science is a skilled process undertaken by several activities: to observe, measure, draw conclusions, controlling variables, formulate hypotheses, make charts and data tables, create operational definitions, and conduct experiments. Skills in the natural science process also include activities to conduct research and communicate the results of his research. Aspects of process skills contains several things: 1) observe, which is a process of gathering information by using all the senses, 2) classification, an activity classifying is activity arranging or composing objects, events, or information into categories or a class by using a specific way for a specific system, 3) measurement, which is an activity measure the results of observations by comparing with a standard that has been set, 4) identifying and controlling variables, which is to mark the object characteristics or factors in the event or events that remain and that changes in the conditions vary, 5) formulation hypothesis, carried out to give the alleged relationship possible reasons found in the experiment or research, 6) design of experiments and conclusions of experimental results is a process that is compiled with the experiment contains steps that must be done. Design of experiments was conducted in order to obtain good data so that its results can be satisfactory.[25]

Based on expert opinion can be concluded that the natural science is the science which deals with natural phenomena that are more uncertain because it is based on experiment and observation in a measured man

[25] Ibid, p. 51

who said to be a process skills as well as the shape of the product science facts, concepts, principles, and theories of science.

5. The Science in Elementary School

Natural Sciences are associated with the natural way of finding out about a systematic manner so that the natural science is not only a mastery of knowledge in the form of a collection of facts, concepts, or principles but also a process of discovery.[26] Science education is expected to become a vehicle for students to learn about themselves and the environment, as well as prospects for further development in applying it in our daily lives. The learning process emphasizes providing direct experience to develop the potential in order to explore and understand the universe around scientifically. Science education directed to inquire and doing so can help learners to gain a deeper understanding of nature around.

Natural science is required transform daily life to meet human needs through solutions to problems that can be identified. The application of science needs to be done wisely so not in poor impact on the environment. In elementary school, is expected to be an emphasis Salingtemas learning (Science, environment, and society) are directed to the learning experience to design and create a masterpiece through the application of science concepts and competencies scientific work wisely.

[26] Sri Sulistyorini, *Model Pembelajaran IPA Sekolah Dasar dan Penerapannya Dalam KTSP* (Yogyakarta: Tiara Wacana, 2007), p. 39

Learning science should be taken of scientific inquiry (scientific inquiry) to foster the ability to think, work and communicate scientific attitude as an important aspect of life skills. Therefore, learning science in elementary school emphasizes providing a direct learning experience through the use and development of process skills and scientific attitude.

Competency Standards (SK) and the Basic Competency (KD) of natural science in elementary school is a national minimum standard that must be achieved by learners and become a reference in the development of the curriculum in any educational institution. Achievement of SK and KD is based on empowering learners to build capability, scientific work, and knowledge itself facilitated by the teacher.

a. Course Objectives Natural Science in Elementary School

- Gaining confidence in the greatness of the Almighty God by the presence, beauty, and order of his creation.
- Develop knowledge and understanding of science concepts that are useful and can be applied in everyday life.
- Develop a curiosity, a positive attitude and an awareness of the relationship interplay between science, environment, technology, and society.
- Develop skills to investigate the process of natural surroundings, solve problems and make decisions.
- Raising awareness to participate, protecting and preserving the natural environment.

- Raising awareness to appreciate nature and all its regularity as one of God's creation.
- Acquire a stock of knowledge, concepts, and skills of science as a basis for continuing education to Junior High School (SMP).

b. Scope of Study Materials Science in Elementary School

- Living things and life processes, namely humans, animals, plants and their interaction with the environment, and health.
- Objects / materials, properties and uses include: liquid, solid and gas.
- Energy and the changes include the force, sound, heat, magnetism, electricity, light, and simple aircraft.
- Earth and the universe include the land, the earth, the solar system, and other celestial objects.[27]

6. The Lesson of Motion and Force

a. Force

In daily life "Force" might say we've heard. But notions of force in Natural Sciences (IPA) is different from the understanding of the force used in everyday life. Definition of force in science and technology has a very important role. Lots of activity related to the force we can do or can we observe in everyday events. For example, to move the book, we need to lift it, to shift the location of the

[27] Ibid, p. 40

cupboard we need to encourage, to open / close the door, we need to push / pull, to draw water from the well by using hoists we need to pull the rope. In addition we also often see small children who are trying to move a table by pushing it though to no avail, the horse that was pulling the train, which was pulling a plow buffalo in rice paddies. If we look, all the aforementioned activities can occur because there is the pull or push force of human, animal, or object to another object. Lifting means doing pull upward. In science push or a pull that's called force. From the examples above it appears that the objects are experiencing push or a pull (subject to force) can migrate or move. But keep in mind that push or a pull (force) on the object is not always From the examples above it appears that the objects are experiencing push or a pull (subject to force) can migrate or move. But keep in mind that push or a pull (force) on the object is not always From the examples above it appears that the objects are experiencing push or a pull (subject to force) can migrate or move. But keep in mind that push or a pull (force) on the object is not always causes it to migrate or move.

b. Relationship Forces and Motion

Is a definite relationship between force and motion? Aristotle (384- 322 BC) believed that force is something that is necessary to maintain objects that move along a horizontal plane. He argued that the move to make the book on the table, should be given a

continuous force. According to Aristotle the nature of the object is stationary, so that the necessary force in order to keep things moving. Furthermore Aristotle argued, a larger force will result in a greater rate.

In contrast to Galileo who found untuk push objects across the table at a constant speedwe need a force to fight friction. The driving force is equal to the friction but opposite direction, so that the total force acting on an object is equal to zero. This corresponds to the view of Galileo that if things move at a constant speed then the resultant force is equal to zero.

The difference between the views Arietoteles and Galileo are not in simple to say that one is right or wrong. Aristotle's view actually not wrong, from our everyday experience shows that moving objects will tend to stop if not driven continuously. In fact the difference is in the fact that Aristotle's views about the "nature" of an object as a final statement that in principle there is no possibility is developed. Analysis of Galileo, on the other hand, can is developed to explain some of the broader phenomenon.

Based on this foundation, then the great Isaac Newton developed the theory of motion. Analysis of motion Newton formulated three laws of motion into that famous. In fact Newton's first law is very similar to the conclusion of Galileo on the motion,

that every object is continuously at rest or at constant speed in a straight line unless it is affected by the resultant force acting on it.

7. The Implementation of Strategy on Science Teaching and Learning

The strategy is a way or method, whereas the general strategy has the sense of an outline of the bow to act in order to achieve specific targets.[28] The strategy is similar to the word tactics, tactics or politics which is an arrangement of potential and resources in order to efficiently obtain the results of a design. Finesse is the optimal utilization of circumstances to reach a goal.[29]

The strategy is also interpreted as an outline of the bow to act in order to achieve specific targets. If associated with learning, a strategy can be defined as the general patterns of activities of teachers and students in the realization of teaching and learning activities to achieve the objectives that have been determine.[30]

Teachers in the era of modern education required to be more creative and innovative in presenting lessons. Learning paradigm shift from teacher-centered to student-centered complex implications of the implementation of learning. Included in this is the selection strategy to be used by teachers in implementing the learning in the classroom. Teachers

[28] Syaiful Bahri Djamarah and Aswan Zain, *Strategi Belajar Mengajar* (Jakarta: Rineka Cipta, 2002), p 5.

[29] Noeng Muhajir, *Ilmu Pendidikan dan Perubahan Sosial: Teori Pendidikan Pelaku Sosial Kreatif* (Yogyakarta: Rake Sarasin, 2000), p. 138-139.

[30] Syaiful Bahri Djamarah and Aswan Zain, *Strategi Belajar Mengajar* (Jakarta: Rineka Cipta, 2002), p. 5

no longer serve as the sole source of knowledge in the classroom, but the teacher's role is as a facilitator, motivator, and mediator for students in understanding the learning materials are sourced both from textbooks and the environment. Teaching and learning strategy are not just limited to the procedures of activities but also includes teaching materials or packages.

Learning strategy is a teacher, the lesson activities with the aim of learning process that takes place in the class can achieve its goals effectively and efficiently. The strategy can also be regarded as a means to an end in the form of a plan. In other words, the strategy is "a plan for Achieving Goals". Teaching and learning strategies are the activities of teachers in teaching and learning can provide facilities or facilities for learners to achieve teaching objectives have been set.

Learning strategy begin of a learning process that aims to make the students learn and change behavior. In choosing a learning strategy should also take into account the circumstances and conditions of teachers and learners. To determine the achievement of learning goals is to assess the results of which will be used to review all components of the system of science teaching. Broadly speaking, the kinds of learning strategy is determined by the following 4, they are:

a. Source Material: Who is organizing material or learning material? Teachers, in the narrow sense or in a broader sense (in relation to

other sources), or a programmed text such as a module or even by learners themselves.

b. The material carrier: Who brought the matter? Individuals, groups, or learned on their own.

c. The approach is: How does the material presented deductive and inductive approach or the other?

d. Recipients Matter: How and some number of recipients of the material? Individual, Small Group, Large Group, Heterogeneous group, or Homogeneous.

The combination of these four factors cause various strategies. Which will be discussed in this paper is a learning strategy because of the way delivery of materials science, namely inductive and deductive learning strategies. Selection of the Natural Science strategy based delivery of content objects science learning process that consists of:

a. Natural Science product in the form of facts, concepts, principles, laws, and theories

b. Value and / or scientific attitude of Natural Science

c. Work and / or the scientific process of Natural Science

d. Natural Science application in habitul activity

e. Creativity in learning science

B. Research Roadmap

Natural Sciences is the subject that is very important for students, because natural science is not just a science that must be understood by students but also relate to everyday life. However, implementation of natural science learning there are students poorly understand several concepts. Many students difficult to understand the concept in science subject, expecially physics. They are have a low understanding of the concept of force and motion. In physics, the force and motion are interchangeable. They are catch that; if there is no force, there will be no movement.

Learning in the classroom is the responsibility together all the elements of education. Teachers as the cutting edge and forefront in reducing student misconceptions demanded to be responsive to all obstacles in the implementation of learning for students. Therefore, teachers need strategies that can be implemented to overcome barriers to the implementation of repair misconceptions in students.

Broadly speaking, the above frameworks can be described in the following chart.

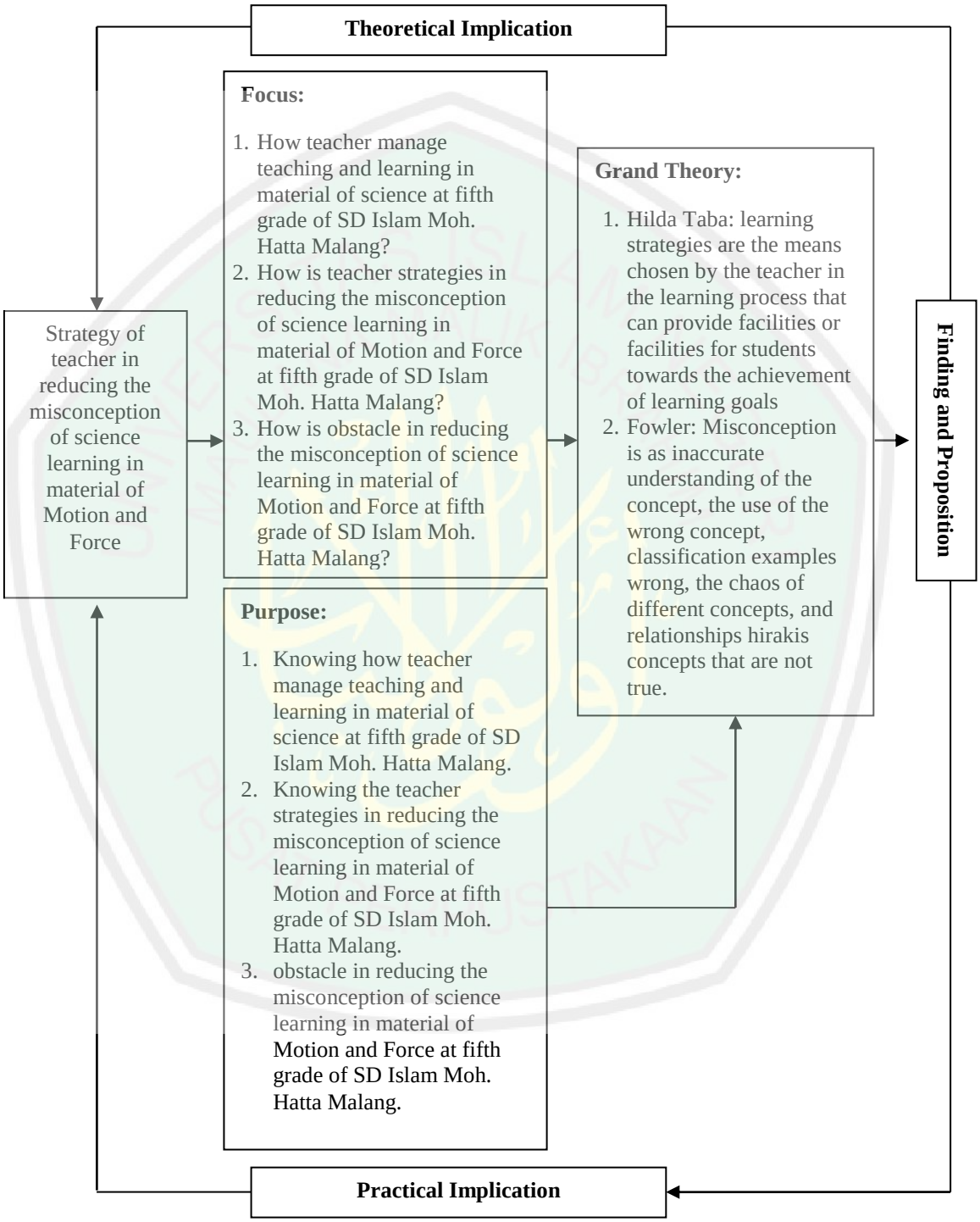

Figure 2.1 Research Roadmap

CHAPTER III

RESEARCH METHOD

A. Approach and Research Design

Based on the focus of the research strategy in reducing the misconception of science learning in the material of Force and Motion at Fifth Grade of SD Islam Moh. Hatta Malang. To achieve these objectives in this study, the researchers used a qualitative method descriptive approach. By using this approach is expected to reveal the facts, circumstances, phenomena, variables, and circumstances that occur as the research proceeds and presenting.

According to Bogdan and Taylor, "qualitative methodology as a research procedure that produces descriptive data in the form of words written or spoken of people and behaviors that can be observed. This approach is directed at the background and the individual is holistic (intact). So, in this case, should not isolate individual or organization into a variable or hypothesis, but it needs to be looked at as part of something whole. "[31]

In line with this definition, Kirk and Miller define "Qualitative research is a certain tradition in the social sciences: What Knowledge is fundamentally dependent on the observations in humans both in the region and in their terminologies."[32] The aim of this study was to obtain data/images that

[31] Lexy J. Moleong, *Metodologi Penelitian Kualitatif*, Cet. 2 (Bandung: PT Remaja Rosdakarya, 2007), p. 4

[32] Prastowo Adi, *Metodologi Penelitian Kualitatif Dalam Perspektif Rancangan Penelitian* (Yogyakarta: Ar-Ruzz Media, 2011), p. 23-24

objective, factual, accurate and systematic about problems studied by the researchers.

This research used interviews and observations, this study seeks to explain, describe and learn ways or strategies of teachers in reduce the misconception of science learning in the material of Force and Motion at Fifth Grade of SD Islam Moh. Hatta Malang. A qualitative approach directly shows the settings and individuals in the setting as a whole, and not narrowed down to a separate variable. In addition, the results are displayed clearly, without any element of manipulation or treatment of the object, because it has the characteristic; (A) naturalistic, (b) field work, (c) main instrument is the human being, and (d) the descriptive nature. The collected data is more in the form of words rather than numbers.[33]

B. Attendance of The Researches

Researchers act as a key instrument that acts as planners, implementers, collection, and processing of data, as well as the reporting of research results. The presence of investigators in this research is to find out more about the strategies that teachers in reducing the misconception of science learning in the material of Force and Motion at Fifth Grade of SD Islam Moh. Hatta Malang.

The role of researchers in this study include: 1) the study planner, in this phase of the study investigators plan includes; research proposal, determine

[33] Slavin, *Analisis Data pada Penelitian Kualitatif* (Jakarta : UI, 2005) p. 63.

the location of research, observation pre-study, and establish *silaturrahim* with informants, 2) collecting data, in this stage the researchers with methods and techniques of data collection that has been determined, to collect data from the data source, 3) analyzer Data, once the data is collected, then the researchers to reduce and analysis to answer the focus of research, and 4) the reporting of research, the results of the analysis is then interpreted and comparative theories used, the results are then compiled in a research report.

C. Setting of The Research

The research was conducted in SD Islam Moh. Hatta Malang, East Java. The class used in obtaining the data is a fifth grade, class research locations. Some of the reasons are as follows. First, the study site SD Islam Moh. Hatta Malang, is schoolars muslim who are competent and professional in Malang. From interviews that researchers do with the teacher in fifth grade of SD Islam Moh. Hatta, said that to meet an obstacle in learning as the low mastery of concepts fifth-grade science students on a subject Force and Motion.

D. Data and Data Sources

Data is real information or material on which to base assessment (analysis or conclusions), the data can be classified into two types, namely quantitative and qualitative data. Whereas, if viewed from the source, the data can be divided into two, namely primary data and secondary data. Primary data is data obtained directly from the source, such as informants, or social

events were observed, and the like. Meanwhile, secondary data is data obtained from informants that have been processed by other parties or data that is not cultivated himself was collected by researchers, such as statistical agencies, magazines, and information, or any other publication.[34]

The data collected in this study is the data corresponding to focus research, the strategy of teachers in reducing the misconception of science learning in the material of Motion and Force at Fifth Grade of SD Islam Moh. Hatta Malang. The data is divided into two, namely primary and secondary data. Primary data in this study is the result of observation of teaching strategies in reducing the misconception of science learning in material of Force and Motion at fifth grade, interviews with informants (class teacher and headmaster). Meanwhile, secondary data in this study a document learning tools, curriculum, and statistical data SD Islam Moh. Hatta Malang.

The main data sources in qualitative research are the words and actions, the rest is additional data, such as documents and others.[35] The data source can be either informants, documents, or photos. The source of the data in this study include:

1. Informant

Informants in this study are divided into two, namely the key informants and non-key informants. The key informant in this research is the teacher in fifth grade of SD Islam Moh. Hatta. As for non-key

[34] Marzuki, *Metodologi Rise* (Yogyakarta: BPEF-UII, 2000), p. 55-56

[35] Lexy J. Moeloeng, *Metodologi Penelitian Kualitatif* (Bandung: PT Remaja Rosdakarya, 2007) p. 157

informants of this research is the principal, staff, and students from both institutions.

2. Activity or action

Activity or an act is referred to here is any form of activity, actions, and behaviors associated with the informant increase the values of character education in science teaching fifth-grade students of SD Islam Moh. Hatta Malang.

3. Document

This document data sources include documents curriculum, learning tools, statistical data, as well as photo documentation of the results of SD Islam Moh. Hatta Malang.

E. Data Collection Technique

In order to obtain valid data and has a high reliability, so in this study used multiple data collection techniques as follows:

1. Observation

Observation is the people's daily activities by using the senses of the eye as its main tools in addition to other sensory perception, such as the ears, smell, mouth, and skin. Therefore, observation is the ability to use his observations through the eyes of the senses work and assisted with other senses.[36] So this method is used to observe the events related to the issues raised in both the events prior research studies, as well as current

[36] M. Burhan Bungin, *Penelitian Kualitatif: Komunikasi, Ekonomi, Kebijakan Publik, dan Ilmu Sosial Lainnya* (Jakarta: Kencana Prenada Media Group, 2011), p. 118.

research. In observation is required memory of observations that have been done before.

The use of this observation technique intended to obtain data in accordance with a research focus holistically and comprehensively. Researchers involved directly or actively participate in the activities and informants. All data are seen during their later recorded on the observation sheet. Whereas, for the other events that are not recorded in the observation sheet will be entered into the court record.

As for the things that are observed in this study were (1) teacher manage teaching and learning in the material of science at Fifth Grade of SD Islam Moh. Hatta Malang, (2) the strategy of teachers in reducing the misconception of science learning in material of Motion and Force at Fifth Grade of SD Islam Moh. Hatta Malang, and (3) the obstacles rectify the misconception of science learning in material of Motion and Force at Fifth Grade of SD Islam Moh. Hatta Malang.

2. Interview

The interview is a conversation between two people or more, in this context is a researcher and informants, with a specific purpose. There are several types of interviews that could be used in qualitative research, but in this study, the type of interview was used semistructured interview by reason of this interview belong to the category of in-depth interviews (depth interview), which in practice is freer than the structured interview.

Semi-structured interviews used for information related to: 1) teacher manage teaching and learning in the material of science at Fifth Grade of SD Islam Moh. Hatta Malang, 2) the strategy of teachers in reducing the misconception of science learning in material of vat Fifth Grade of SD Islam Moh. Hatta Malang. The informant who is the source of this data is the teacher of fifth grade in SD Islam Moh. Hatta Malang, and 3) the obstacles rectify the misconception of science learning in the material of Motion and Force at Fifth Grade of SD Islam Moh. Hatta Malang.

3. Documentation

The use of this technique is to obtain the necessary documents that include documents of curriculum, learning tools, and statistical data of SD Islam Moh. Hatta Malang.

Some of the reasons why this technique in among others; First, the source of this data is always available so easily accessible. Besides excavation does not require a lot of cost and time. Second, the data source documentation is a source of stable data accuracy in the data illustrate the past and present. In addition, the data obtained can be easily checked for validity. Third, this is a source of legal question to meet accountability.

4. Test

The test contains questions that are used to determine students' understanding of misconceptions related to mass and weight materials for

elementary fifth grade students of Islam Moh. Hatta. The test used is the pre-test and post-test that aims to measure student learning outcomes before and after treatment. The questions posed to students, first performed validity by experts.

F. Data Analysis

Data analysis is the process of systematically searching for and compiling data obtained from interviews, field notes, and other materials, making it easy to understand and its findings can be communicated to others.[37]

Analysis of the data in this study conducted in three stages, namely; before entering the field, on the field during and after its completion in the field. Before entering the field, the analysis is done to determine the focus of the study, so the focus is still tentative. However, in the present study, data analysis is more focused during the pitch process in conjunction with the data collection and after the completion of data collection, ie, during the preparation of research reports.

The procedure of data analysis in this study is inductive by using a model that Miles and Huberman interactive models. Activities in the analysis of this data is data collection, data reduction, display data, and then topped with a verification or conclusion.

[37] Sugiyono, *Metodologi Penelitian Kuantitatif Kualitatif dan R&D* (Bandung: Alfabeta, 2011), p. 244

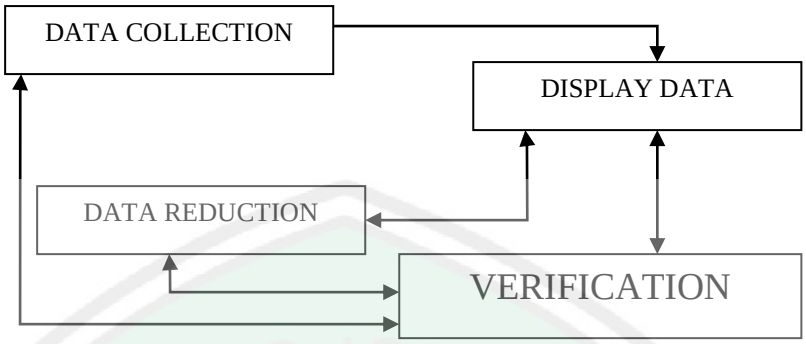

Figure 3.1 Interactive Analysis Model by Miles and Huberman

1. **Data Collection**

   Collecting data in this study was conducted using interviews, observation, and documentation. The use of methods adapted to the type of data required.

2. **Data Reduction**

   This research data reduction is done by collecting the records during the observation, record the results of interviews with informants, and the result of recording documentation. Data have been collected and then sorted according to the research focus.

3. ***Display* Data**

   At this stage, the researcher to organize the data that has been reduced to narrative text, and then, if necessary, the data are summarized in tables, charts, and diagrams to facilitate analysis and interpretation. This data includes the results of variation, interviews, and documentation.

4. Verification

The initial conclusion is still tentative and will be amended, if not found concrete evidence of strong support for subsequent data collection phase. But if initial conclusions put forward is supported by evidence that is valid and consistent, then the conclusion is credible conclusion.

G. Procedures Research

Research procedures used in this study was adapted from measures developed by Miles and Huberman. Due to time constraints and cost-owned researcher, an outline of the steps described earlier studies, simplified according to the needs of researchers.

Taking a major step Miles and Huberman, this research procedure is divided into four steps, namely; 1) preparation / pre-field, 2) phase of field work and 3) the stage of analysis/data processing, 4) check the validity of the data.

1. Preparation / pre-field

a. Drafting research

The research will be done departing from the scope of the problem in the events that are ongoing and can be observed and verified significantly during the course of the study. The events observed in this context is an event or events that occur in the environment of people or communities and occurred around the time now.

b. Selecting the field

In accordance with the issues raised in the study, the selected research sites surrounding communities experiencing the diversity of the issues raised by the researcher. Location is used as a place of research and data sources by investigators

c. Data collection

Techniques used in the form of data collection activities:

1) Observation

These observations were made to collect data by direct observation to study subjects in which they are daily and regularly conduct its activities. Utilization of information technology spearheads observation activities undertaken, such as the use of Tape Recorder and Handy Camera.

2) Interview

Interviews conducted is to obtain a rational meaning, the observation needs to be confirmed by the interview. Researchers conducted a direct dialogue with the data source, where respondents have the freedom and opportunity to remove thoughts, views, and feelings naturally. Researchers at interviewing, prepare some questions in the form of an instrument submitted to the research subject.

2. Field

a. Understanding and enter the field

Researchers observed directly, understand the customs, habits, manners and cultural background of the study. Building relationships with all members of the school researcher / academic institutions, and establish familiarity with the subject of research.

b. Active in the (data collection)

This qualitative approach puts the researcher as the main instrument in extracting and processing the data obtained. Qualitative research is often called the naturalistic method, the researchers took the data directly from a natural setting.

3. Data processing

a. Data reduction

The data obtained by researchers is written in the form of reports or detailed data. The report is based on data obtained reduced, summarized, been the subject matters, and focused on things that are important.

b. Display Data

The data obtained were categorized according to the subject matter and are made in the form of a matrix making it easier for researchers to look at the relationship patterns of the data with other data.

c. Infer

The next step is to conclude and verify the data that has been processed into shapes that fit the pattern of problem-solving is done.

4. Checking the validity of the data

That the data obtained from the study site has a high credibility and can be justified scientifically, the researchers checked the validity of the data. The steps taken are (1) triangulation of data sources and data collection techniques, (2) checking member, and (3) peer discussion.

Triangulation of data sources is done by comparing the information obtained from interviews, observation, and documentation. For example, researchers compared the results of interviews with key informants fifth-grade teacher SD Islam Moh. Hatta Malang) with non-key informants such as principals, staff employees, and vice versa. Whereas, for the triangulation method researchers are comparing the results of observations with the results of interviews or the results of the documentation.

Another technique that is used to check the validity of the data in this study is member check. Member checking done by researchers visited each informant and show data from interviews and observations included the interpretation of research results. The informant was asked to re-read, comment, add or subtract when deemed necessary.

In addition to triangulation techniques and checking members, researchers also use peer discussion techniques to check the validity of the data. This technique is done either by people who are experienced in qualitative research, as well as with fellow student Elementary School Teacher Education UIN Maulana Malik Ibrahim Malang. Steps to be

taken, namely; researchers presented data that is interpreted and analyzed to colleagues. Researchers then asked for feedback on the data that has been presented. This discussion is intended to determine the level of data coverage, is too narrow or too wide, whether the data is relevant to the focus of the study or not.

CHAPTER IV

RESEARCH FINDINGS

A. Profile of SD Islam Moh. Hatta Malang

1. History of SD Islam Moh. Hatta Malang

SD Islam Moh. Hatta Malang was pioneered by Prof. H. Masruchin Ruba'i, SH. MS. as well as the initiative of scholars-Muslim scholars who are competent, professional and concerned about the development of the child as well as the Islamic struggle. Based on the results of consideration and agreement, then in 2003, the pioneering / Muslim scholars are united to establish a basic education by the name of SD Islam Moh. Hatta Malang, which is located at Simpang Flamboyan No. 30 Malang, which is under the auspices of Bina Foundation perfect man (YANAIKA) Malang.

On 8 December 2004, down decree (SK), organize SD Islam Moh. Hatta Malang with number SK.421.8/5429/420 304/2004 of the Directorate of Primary and secondary Malang. In 2009 SD Islam Moh. Hatta Malang accreditation to result in a decline in the number SK 200/BAP-S/M/SK/X/2016, From the National Accreditation Board for School East Java with very encouraging results that Accredited "A".

With good management and co-operation of the pilot schools, the board of teachers and employees/employee SD Islam Moh. Hatta Malang, the school finally has developed quite rapidly. This development

can be seen from the increase in the quantity or quality of education learners.

Image 4.1 The Masjid at SDI Mohammad Hatta

2. Teachers Data in SD Islam Moh. Hatta Malang

The number of primary school teachers who teach in SD Islam Moh. Hatta Malang totaled 38 people, the following:

Table 4.1 Teachers name and the task

No	NAMA	JABATAN
1	Suyanto, S.Pd., M.K.Pd	Headmaster
2	Riesda Januarty, S.Pd	Waka. Kesiswaan
3	Muhammad Farid, S.Pd	Waka. Sarpras
4	Tomi Ariyansah, S.Pd	Waka. Kurikulum
5	Dra.Nuning Widiastuti	Teacher class
6	Mahda Chaira, S,TP	Teacher class
7	Deni Siam Kustantin, S.Pd	Teacher class
8	Angga Mulyawan , S.Pd	Teacher class
9	Mutia Fatmawati, S.Si, S.Pd	Teacher class
10	Genta Patria Antariksa, S.Pd	Sport teacher
11	Djoko Nursafa'at , S.Pd	Teacher class
12	Yuwafinikmah, S.Pd	Teacher class
13	Yulia Fajar Minhayati, S.Pd	Teacher class
14	Faricha Isnaini, S.S	Teacher class

No	NAMA	JABATAN
15	Siti Khotimatul Khusna, S.Pd	Teacher class
16	Niswati Suhada Rohmah, S.Pd.I	Teacher class
17	Novita Dini Sholikhati, S.Pd	Teacher class
18	Muhammad Khoirudin, S.Pd.I	Teacher class
19	Nurhasanah, S.Pd	Teacher class
20	Ika Ferindyah Kusumasari, S.Pd	Teacher class
21	Sri Wahyuni, S.Pd	Teacher class
22	Vega Mareta Sceisarriya, M.Pd	Sport teacher
23	Erika Syahrani Lubis, SP	Teacher class
24	Eko Cahyono, S.Pd	Teacher class
25	M. Khoirul Fadeli, S.Pd.I	Islamic teacher
26	Annisa Dinda Bestari	GPK
27	Fahrudin Alwi, S.Pd	GPK
28	Anggi Ayu Ratnasari, S.Pd	GPK
29	Erni Zuliati	Koperation
30	Totok Wahyudiono	Cleaning service
31	Wawan Setyo Budi	Cleaning service
32	Ahmad Mudzakir	Security
33	Achmad Jazuli, S.Pd	Ka. Tata Usaha
34	Istichomah Huda, S. I.Kom	Library
35	Hersi Kusumastuti	Koperation
36	Anas Maulana Akbar	Staf Tata Usaha
37	Aprilliani Setyaningtyas,S.Pd	Staf Tata Usaha
38	Ugik Iwan Susanto	Cleaning service

3. Students Data

This school both in terms of management and learning, has been very good and got a good appreciation of the surrounding community, it is evident from the graph of the number of students continues to grow from year to year, the following:

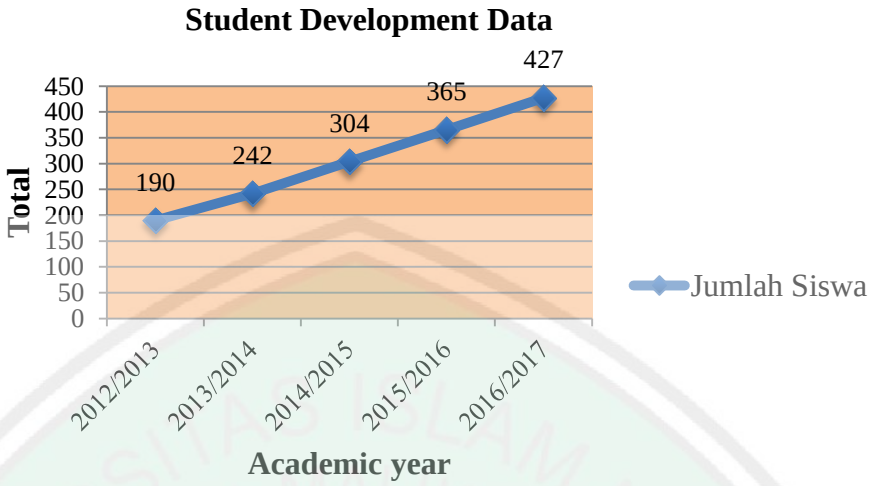

Image 4.2 Student Development of SDI Mohammad Hatta.[38]

B. Result of the Research

1. Teacher Manage Teaching and Learning In The Material Of Science At Fifth Grade Of SD Islam Moh. Hatta Malang

a. Lesson Planning

Lesson Plan (RPP) in SD Islam Moh. Hatta Malang is based on Competency of Core (KI) and the Competency of Basic (KD) in the curriculum. The class teacher did the make-up at the beginning of the school year. This is as stated by master of curriculum, Tomi Ariansyah, S. Pd, as follows:

> "For this year requested directly made at the beginning of the year. Sometimes ya bother too, because of *kepotong-kepotong* with another job, because I also double as an operator. If it *kepotong* so yes, start again a little heavy. "[39]
>
> *"Untuk tahun ini diminta langsung dibuat di awal tahun. Kadang ya repot juga, soalnya kepotong-kepotong dengan kerjaan lain, karena saya juga merangkap sebagai operator. Kalau sudah kepotong gitu ya, mulai lagi agak berat."*

[38] Profile document of SD Islam Moh. Hatta Malang
[39] Tomi Ariansyah, Interview (Malang, November 17, 2017)

1) Analysis of KI and KD

This phase is carried out to determine the KI and KD, which can be taught to the students concerned. Consideration in the analysis phase includes characters or types of student needs, time and level of difficulty of the material.

The references in the preparation of lesson plans, among others, document the curriculum, student books, and teacher books. Based on interviews with Master of curriculum, there are several different steps in analyzing KD. Tomi Ariansyah, S.Pd for example, he prefers to use the students' books than books teachers. In this analysis stage, Tomi Ariansyah, S.Pd directly viewing the material in the student book, after which he matches with KD contained in the curriculum. If any material which is likely a student cannot understand, the KD that fit the material is not included in the RPP. This is as expressed by Tomi Ariansyah, S.Pd as follows:

> "The reference I used earlier was textbooks, but only take KI and KD, the difference later in the lesson. KI and KD are there, but I am usually more look into the material. So I first read the material, what children cannot, if not, it goes KD matter where the KD was my streak, because of the material in accordance with the ability of the children. "[40]
>
> *"Acuan yang saya gunakan ya buku paket tadi itu, tapi cuma diambil KI dan KDnya saja, yang membedakan nanti pada pembelajarannya. KI dan KD memang ada, tapi saya biasanya lebih banyak melihat ke materi. Jadi saya baca dulu materinya, anak-anak bisa apa nggak, kalau nggak, materi itu masuk KD mana, maka KD itu saya coret, karena materinya sesuai dengan kemampuan anak-anak."*

[40] Tomi Ardiansyah, Interview (Malang, November 17, 2017)

2) Indicators according to Learning

At this stage, grade teacher KD-based learning to develop indicators that have been analyzed. The payload in the indicators adapted to the characteristics of the students.[41] Fifth-grade teacher, Eko Cahyono, S.Pd, states:

> "We use a KD indicators that were analyzed. I take the material in accordance with my kids, but it turns out that the material which I took not finished, so I will evaluate. "[42]
>
> *"Kita pakai indikator KD yang sudah dianalisis. Materi yang sesuai dengan anak-anak saya ambil, tapi ternyata kalau materi yang saya ambil belum tuntas, ya saya evaluasi."*

b. Implementation of Teaching and Learning

Learning for students of fiffh grade carried out inside and outside the classroom. During the learning process, the students accompanied by Teacher class V. The material studied in class as it appears in the RPP.

Teacher classes do not prepare students specifically for the following study. This is because the fifth-grade students were able to follow the learning activities to teach well. However, there is a different implementation of learning, namely finished studying teacher reminded students to learn the material that will be taught next Dieteman. As stated by Tomi Ariansyah, S.Pd:

> "Implementation of the learning does not much different from other schools. But there is a difference, before the return of students are reminded to study the material that will be taught at

[41] Rahmanitia Nadiatus Salichah, Interview (Malang, October 17th, 2016)
[42] Eko Cahyono, Interview (Malang, November 20, 2017)

the meeting tomorrow. Children can search for material from books or internet, and told to develop their own that material. "[43]

"Pelaksanaan pembelajarannya sih tidak jauh berbeda dengan sekolah-sekolah lain. Tetapi ada yang beda, sebelum pulang siswa selalu diingatkan untuk belajar materi yang akan diajarkan di pertemuan besoknya. Anak-anak bisa mencari materi lewat buku atau interner, dan disuruh mengembangkan sendiri materi itu."

In addition to giving the task to study the material that will be taught in the future, teachers also reminded the parents or guardians to accompany their children learn. This is as expressed by Tomi Ariansyah, S.Pd as follows:

"Not only students are reminded to study at night, parents should also be reminded to accompany their children every night studying. Usually in a group of parents told their children in order to learn this material. "[44]

"Tidak hanya siswa yang diingatkan untuk belajar malam, orang tuanya juga harus diingatkan untuk mendampingi anak mereka setiap belajar malam. Biasanya di group orang tua diberi tahu anaknya di suruh belajar materi ini."

Image 4.3 The implementation of teaching and learning at fifth grade in SDI Mohammad Hatta

[43] Tomi Ardiansyah, Interview (Malang, November 17, 2017)
[44] Ibid (Malang, November 17, 2017)

The next day in learning activities, in the fifth-grade teacher apersepsi always do the post-test. Teachers provide post-test in the form of questions to the students to see how far the understanding of students learned last night. Fifth-grade teacher, Eko Cahyono, S.Pd, states:

> "Upon entering the classroom of children did post-test, the point to see how much the children learn did last night. After completion of the post-test, I give the children the question of how much understanding they learned last night. "[45]
>
> *"Setelah masuk kelas anak-anak melakukan post test, gunanya untuk melihat seberapa jauh anak belajar tadi malam. Setelah selesai post test, saya beri pertanyaan kepada anak-anak seberapa jauh pemahaman mereka belajar tadi malam."*

Meanwhile, Eko Cahyono, S.Pd states, to understand the material, the teacher will explain the material and explanations to the students. For more to understand the material in class, V teacher asked a simple lab where necessary, used to strengthen the material and increase the knowledge of students. Here is the statement from Masterclass of fifth grade, Tomi Ariansyah, S.Pd:

> "After the children discuss and learn on their own, clearly should provide insight into the material. Straighten they have learned. To minimize the misconceptions as well. Usually after the completion of material children are invited to a simple practical if the tool and the material is easy to get or obtained, use what? To strengthen the material and increase the knowledge of the students. "[46]
>
> *"Setelah anak-anak berdiskusi dan belajar sendiri, jelas harus memberikan pemahaman materi itu. Meluruskan yang sudah mereka pelajari. Untuk meminimalisir miskonsepsi juga.*

[45] Eko Cahyono, Interview (Malang, November 20, 2017)
[46] Tomi Ardiansyah, Interview (Malang, November 17, 2017)

Biasanya setelah selesai materi anak-anak diajak untuk praktikum sederhana jika alat dan bahannya mudah didpatkan atau diperoleh, gunanya apa? Untuk memperkuat materi dan menambah pengetahuan siswa."

Based on interviews and observations in the above can be seen that, the learning implementation of fifth-grade in SD Islam Moh. Hatta Malang did by the class teacher. Learning tailored to the RPP which had been developed previously.

c. Evaluation of Teaching and Learning

Evaluation of learning for students are divided into three types. First, the formative evaluation conducted by an assessment rubric arranged in the RPP. The evaluation is done every end of the discussion of a subject/topic, and are intended to determine the extent to which the learning process has been running be planned. Same with evaluation in general, formative evaluation of students also includes three aspects of core competence is the attitude, cognition, and skills.

Rate gesture or affective aspects do when students follow lessons. Teachers observe students' attitudes and behaviors in the classroom when learning activities take place. Note these observations later became the material that will be put to vote in the student report cards. In addition to using an assessment rubric in the RPP, the teacher also customizes assessment students' attitudes at home. On this subject, Tomi Ariansyah, S.Pd states:

"Certainly not just in school attitude assessment, I and other teachers also work closely with the parents to educate their children. At school, the responsibility of the teachers, in the house is the responsibility of the parents. "[47]

"Tentu tidak hanya di sekolah penilaian sikapnya, saya dan guru-guru yang lain juga bekerja sama dengan wali murid untuk mendidik anak-anaknya. Di sekolah tanggung jawab para guru, di rumah menjadi tanggung jawab para orang tua."

As for the assessment of cognitive aspects, teachers use assessment rubrics contained in the RPP, while for psychomotor, assessment done by giving project tasks to students.

2. Teachers Strategies In Reducing The Misconception Of Science Learning In The Material Of Force and Motion At Fifth Grade

In general, strategies in reducing the misconception of science learningin the material of Force and Motion at Fifth Grade of SD Islam Moh. Hatta Malang can be classified as follows:

a. Identification the concepts of Force and Motion in science learning

As the data presented observations and interviews on top of that to reduce science learning misconceptions on the matter Force and Motion, the class teacher to identify the concepts that occur misconceptions of science learning. As did Mr. Eko Cahyono, S.Pd, he conducted the identification of the topics that could potentially occur misconceptions. Eko Cahyono, S.Pd states:

[47] Tomi Ariansyah, Interview (Malang, November 20, 2017)

"For example, I teach the material of the concept was about Force. Which you saw earlier after an evaluation at the end, children expressed understanding of the concept of Force; wrong. Then mentions examples of improper or inverted-inverted, meaning that they have misconceptions. "[48]

"Misalnya materi IPA yang saya ajarkan tadi tentang Gaya. Yang sampean lihat tadi setelah evaluasi di akhir, anak-anak menyatakan pengertian konsep gaya; salah. Lalu menyebutkan contoh-contoh yang tidak benar atau terbalik-terbalik, berarti itu mereka mengalami miskonsepsi."

Other examples, such as mass and weight differentiate for a student named Althaf Dain Rifqi Adiwidya fifth-grade too hard, then the class teacher Eko Cahyono, S.Pd identify no occurrence of misconceptions in students. He added:

"Sometimes material is very difficult for children, probably from the mistakes that concept. Examples differentiate units of mass and weight, not children who do not understand but perhaps out of habit their everyday language."[49]

"Kadang pas di kelas materinya sulit dipahami anak-anak, mungkin dari kesalahan konsep tadi. Contohnya membedakan satuan massa dan berat, bukan anak-anak yang tidak paham ya tapi mungkin dari kebiasaan bahasa sehari-hari mereka."

Once you know or reveal their misconceptions that occur in students, then teachers are looking for the cause of misconceptions. The cause of misconception that occurs in students is still very limited. In reality on the ground, fifth-grade students experiencing misconceptions about causes more diverse and complicated, because

[48] Eko Cahyono, Interview (Malang, November 17, 2017)
[49] Eko Cahyono, Interview (Malang, November 17, 2017)

students are sometimes not openly disclose how until they have the incorrect concept.[50]

b. Write the identification in Table

After checking the concepts of science to students, by providing questions that potential occurrence of misconceptions. Teachers make an identification result table that he can after the identification. As stated Eko Cahyono, S.Pd:

> "Usually when I once knew the kids had a misconception, I created a table. Let me clear it and can be identified concepts that harm where, and I know the cause of what. Perhaps from myself or from the students. "[51]
>
> *"Biasanya kalau saya setelah tau anak-anak punya miskonsepsi, saya buat tabel. Biar jelas saja dan bisa diidentifikasi konsep yang salahnya dimana, dan saya tau penyebabnya karena apa. Mungkin dari saya sendiri atau dari siswa."*

Table 4.2 Table Results Identification Misconceptions

No.	Concept	Why of misconceptions
1.	Understanding force	Preconceptions Students
2.	Stationary objects do not have any force	Reasoning which is incomplete or incorrect
3.	The influence of body weight against the force and motion	Preconceptions Students

In this table, write the wrong concept that occurs in students and possible causes of these misconceptions. With these tables, it can help teachers to take the next steps to resolve the students' misconceptions.

[50] Observations in Class V SD Islam Moh. Hatta, October 20th, 2017
[51] Ibid (Malang, November 17, 2017)

c. Create the steps of learning in reducing the misconceptions

After knowing the misconceptions held by students and what causes it, the teacher seeks the appropriate treatment to address and rectify the misconceptions that are not sustainable. Teachers must understand the misconceptions experienced by each student because in one class may be different and the cause is also different. Then it can happen, in one class there are various misconceptions and cause misconceptions. Tomi Ariansyah, S.Pd states:

> "It can be tough to overcome misconceptions, let alone one class was definitely different. But of course, I have to fix it because it is my duty to teach the children. I need to reduce my teaching strategies and methods misconceptions when it happens like this. "[52]
>
> *"Sulit memang untuk mengatasi miskonsepsi, apalagi satu kelas itu pasti berbeda-beda. Tapi tentu saya harus memperbaiki itu, karena sudah menjadi tugas saya untuk mengajar anak-anak. Saya perlu memperbaiki strategi dan metode mengajar saya apabila sudah terjadi miskonsepsi seperti ini."*

The steps of teaching learning in reducing the misconception of science learning in the material of Force and Motion at Fifth Grade of SD Islam Moh. Hatta Malang is as follows:

1) Giving the students to inform their idea

In the classroom is not only teachers who play an active role in the learning process, students are also required to play an active role in learning. As was done by the fifth-grade teacher in SD Islam Moh. Hatta, it gives an opportunity for students to express thoughts, ideas,

[52] Tomi Ariansyah (Malang, November 17, 2017)

and opinions about the concept that they know before learning the core begins. Special causes that by students, among others, preconception, associative thinking students, humanistic thinking, reasoning incomplete, intuition is wrong and so on. With a wide variety of special causes such, a wide range of opinions and ideas that emerged about concept Forces and Motion As stated Eko Cahyono, S.Pd:

> "Before I explain the concept of a true, my first question to the children about the concept that they can. I gave them the opportunity to reveal their opinion and way of thinking. Sometimes if you've any right they justified difficult concept, so I slowly just so they do not feel blamed, but I straighten later. "[53]
>
> *"Sebelum saya jelaskan konsep yang benar, saya tanya dulu ke anak-anak tentang konsep yang mereka dapat. Saya memberi kesempatan kepada mereka untuk mengungkap pendapat mereka dan cara berpikir mereka. Kadang kan mereka kalau sudah salah konsep susah dibenarkan, jadi saya pelan-pelan saja agar mereka tidak merasa disalahkan, tapi saya luruskan nantinya."*

By understanding what students think and what ideas the students, teachers are expected to know the cause of misconceptions and find ways to overcome these misconceptions. In the material Forces and Motion, certainly many special causes of the students resulting in misconceptions. Because before learning begins all students own preconceptions respectively.

[53] Eko Cahyono, Interview (Malang, November 17, 2017)

2) Students discussion

Discussions with students are also required in teaching and learning. Discussions can be held before or after the teacher explains the material to the students. Unlike the Class V learning activities in SD Islam Moh. Hatta Malang, teachers do not encourage students to discuss in the beginning but after the distribution of learning materials by teachers. As stated by Tomi Ariansyah, S.Pd:

> "It is rare that invites children of discussion at the beginning of the lesson, almost never possible. Because I think that if children or a group discussion at the beginning of the time it's not efficient, because certainly not all share thinking. Only the children are active. "[54]
>
> *"Jarang kalau mengajak anak-anak diskusi di awal pelajaran, hampir tidak pernah mungkin. Karena saya rasa kalau anak-anak berdiskusi atau berkelompok di awal waktu itu tidak efesien, karena pasti tidak semua yang ikut berpikir. Hanya anak-anak itu saja yang aktif."*

At the beginning of teaching and learning activities, masterclass of fifth-grade requires children submitted ideas Forces and Motion related concepts that have been learned previously. The fifth-grade teacher asked each student to give a statement that they are already familiar or ask questions they have not understood the concept Forces and Motion. After that, the teacher also gives the opportunity for other students to answer his question, to assess how much understanding they already know. As stated Eko Cahyono, S.Pd:

> "My children are enjoined to leave a question or a statement in accordance with their understanding. Then the answer is also

[54] Tomi Ardiansyah, Interview (Malang, November 17, 2017)

answered by their own friends. It was to train their talk, too, that depends on me. "[55]

"Anak-anak saya wajibkan untuk memberikan pertanyaan atau pernyataan sesuai dengan pemahaman mereka. Kemudian jawaban juga dijawab oleh teman mereka sendiri. Itu untuk melatih berbicara mereka juga, agar tergantung pada saya."

Image 4.4 The teacher guides students in discussion

If at the time it was discovered that they have difficulty understanding concepts, like many misconceptions that occur in fifth grade SD Islam Moh. Hatta is about the concept of objects that do not have any force when the object is at rest. Eko Cahyono, S.Pd will create a discussion group to resolve misconceptions that occur in students, by making four groups sit in a circle. He added:

"Most children have misconceptions about the concept of stationary objects, I still give children the opportunity to discuss"[56]

"Paling banyak anak-anak mengalami miskonsepsi tentang konsep benda diam, saya tetap memberi kesempatan anak-anak untuk berdiskusi"

[55] Eko Cahyono, Interview (Malang, November 17, 2017)
[56] Ibid, Interviews (Malang, November 17, 2017)

3) Use of the instructional media

Most of the barriers faced by students in terms of understanding the learning materials is an understanding of the concepts that tend to be abstract. To overcome these problems, the fifth grade teacher in SD Islam Moh. Hatta using instructional media as a tool to clarify and facilitate student understanding. As for the media, that is often used is the visual media and audio-visual equipment, such as pictures and videos. The use of this medium adapted to the material being studied. To use instructional media on material Forces and Motion, teachers use methods Role Playing. In this material focuses on students to avoid misconceptions.

Image 4.5 Role playing instructional of Science learning at fifth grade of SDI Mohammad Hatta

d. Improve the student motivation

Some of the steps taken by teachers to reduce students' motivation, among others:

1) Reward

Teachers give rewards when students are able to work on a problem or successfully carry out a job in accordance with the

direction or instruction of the teacher. A form of reward is mixed. For example, the applied Eko Cahyono, S.Pd, sometimes giving a gift in the form of snacks, which are given at the time the student can answer the questions when evaluating learning in the classroom, but with a record of whether points earned enough students or not.[57]

As for punishment given when students do not perform the command teacher or do not behave as expected. Penalties were not in the form of physical activity but in the form of warnings. As told Tomi Ariansyah, S.Pd follows:

> "Sometimes if for example there are children who do not pay attention the teacher, I pretended to hold the handphone, then I recorded him, is not he afraid that if I reported to her mother. If you know my record so, she immediately invited to learn. "[58]
>
> *"Kadang kalau misalnya ada anak yang lari-lari tidak memperhatikan guru, saya pura-pura memegang HP, kemudian saya rekam dia, kan dia takut kalau saya adukan ke mamanya. Kalau tahu saya merekam gitu, dia langsung mengajak belajar."*

Image 4.6 One of student inform her idea in front of the class

[57] Eko Cahyono, Interview, (Malang, November 20, 2017)
[58] Tomi Ariansyah, Interview (Malang, October 25, 2017)

Penalties for students to follow the class rules, this is done if the student abuses are common and in accordance with the class rules. For example, when students are rowdy and bullying, then the points will be reduced.[59]

2) Advice

Another step undertaken by teachers to reduce students' motivation is to give praise, advice, and motivation to make students more enthusiastic. As Eko Cahyono, S.Pd, he gives advice and reminds students that bad behavior is eliminated. He states:

> "Once the children have misconceptions about the plants, keep them so lazy to learn because he said it is too difficult. So, I remind you wrote, if not seriously studied, later rapotnya ugly. Normally I asked "you want the rapot is bad?", They replied, "NO."[60]
>
> *"Pernah itu anak-anak mengalami miskonsepsi tentang tumbuhan, terus mereka jadi malas belajar karena terlalu susah katanya. Ya saya ingatkan aja, kalau nggak serius belajar, nanti rapotnya jelek. Biasanya saya tanya "kalian mau rapotnya jelek?", mereka jawab "nggak mau."*[61]

e. Giving the target of learning achievement

So that students are more motivated, Masterclasses provide a boost for the provision targets students must achieve. If students successfully complete the task in accordance with the targets set, then give rewards grade teacher, for example by allowing students an early break. However, if the student does not meet the target, students are not allowed to break first.

[59] Observations in Class V SD Islam Moh. Hatta, October 20th, 2017
[60] Eko Cahyono, S.Pd Teacher class V, 17 November 2017
[61] Interview Eko Cahyono, S.Pd Teacher class V, 17 November 2017

f. Coordination between teachers

Coordination is done routinely every Monday to Thursday when students are chanting the hours of the 1st and 2nd. Coordination routinely conducted by a team of classroom teachers at each grade level.

The purpose of the meeting is to discuss the coordination of the preparation of study during the next week. All things need to be prepared, such as learning tools, learning resources, instructional media, strategies, and methods, as well as the constraints that may be encountered during the learning.[62] If a coordination meeting to discuss matters related to students with special needs, or for example, there are problems with students with special needs, a team of classroom teachers invited Master Special Assistants (GPK), Tomi Ariansyah, S.Pd for a recommend countermeasures to be applied.[63]

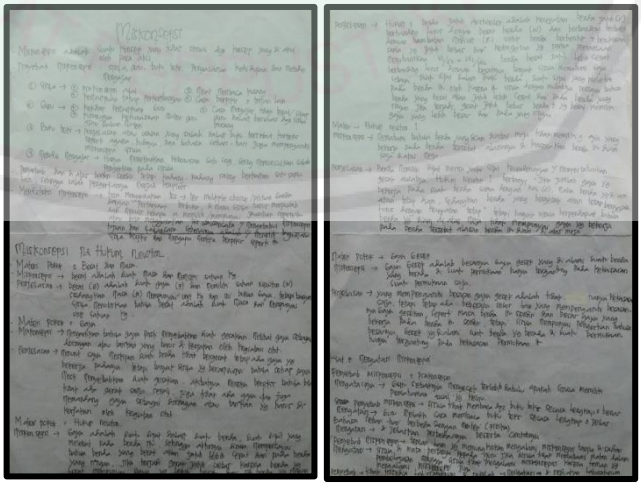

Image 4.7 The result of coordination between teachers

[62] Interviews with all fifth grade elementary school teacher of Islam Moh. Hatta Malang
[63] Tomi Ariansyah, Interview (Malang, October 25, 2017)

3. Obstacle In Reducing The Misconception Of Science Learning In The Material Of Force and Motion At Fifth Grade

a. Variacy concept of the students

As described above, many of the students who experienced the initial concept or different preconceptions. So it is very difficult to unify their opinion. As stated by Tomi Ariansyah, S.Pd:

> "Yes it is, right before school children already have preconceptions of each masing.pendapatnya also vary, so sometimes it's hard if it were so."[64]
>
> *"Ya itu mbak, sebelum masuk kelas kan anak-anak sudah punya prakonsepsi masing-masing.pendapatnya pun berbeda-beda, jadi kadang susah kalau sudah begitu."*

Agree with Tomi Ariansyah, S.Pd, Eko Cahyono, S.Pd also stated that the matter Forces and Motion, Masterclass experience constraints in integrating the students' conceptions. Eg understanding the concept of force and motion, students already have their own concept of it. There are two classes of fith grade in SD Islam Moh. Hatta Malang, in a class of 30 students only a few who possess the same conception. He states:

> "One class there are 30 students, not all have the same opinion. Only a few. I ordered the one expressed concepts of force and motion understanding alone is different."[65]
>
> *"Satu kelas ada 30 siswa, tidak semua memiliki pendapat yang sama. Hanya beberapa. Saya suruh satu-satu menyatakan konsep tentang pengertian gaya dan gerak saja sudah berbeda-beda."*

[64] Ibid (Malang, October 25, 2017)
[65] Eko Cahyono, S.Pd Teacher class of fifth grade, 17 November 2017

To explain the concept of force and motion, Masterclass needs to unite the conceptions of the students first. Fixed accommodate all opinions of the students, after the class teacher added, justifying and straighten when an error from what has been stated by the students. In order for the material to be described hereinafter teachers not experiencing errors.

b. Difficult to understanding the abstract concepts

Concepts in Science there are two kinds: the concept of concrete and abstract concepts. The concept of a concrete example of the material Earth and the Universe. Including concrete concept because it talks about rocks, soil and water recycling. One abstract concept in science is in the fifth-grade science lessons SD / MI matter Forces and Motion. An abstract concept that is the teacher in explaining the material obstacles to learning, as stated Eko Cahyono, S.Pd as follows:

> "Sometimes the abstract concept which makes it difficult to explain to children. For example, the material of the unit, which is in units of mass eg kilograms and in units of length ie meters. These units are abstract as a form of mass and not a real long symbolized only by a particular object or to a certain number. „[66]

> *"Kadang konsep abstrak yang membuat sulit untuk menjelaskan kepada anak-anak. Misalnya pada materi tentang satuan, yaitu pada satuan massa misal: kilogram dan pada satuan panjang misal: meter. Satuan-satuan tersebut bersifat abstrak karena wujud dari massa dan panjang tersebut tidak nyata hanya dilambangkan dengan suatu benda tertentu atau dengan suatu angka tertentu."*

[66] Ibid, Interviews, (Malang, November 20, 2017)

Force and Motion concept is an abstract concept for students of fifith grade in SD Islam Moh. Hatta Malang. Students better understand the concrete concept for more real in front of students. Not all fifth-grade students to think abstractly, and therefore the distress grade teacher in teaching abstract concepts to students. Eko Cahyono, S.Pd added:

> "Not all children fifth grade smart, they are smart as diligent. Because of the abstract concept that should really be understood, not as an abstract concept that is a totally real presence in front of them. "[67]
>
> *"Tidak semua anak kelas V cerdas, mereka pintar karena rajin. Karena konsep abstrak itu harus benar-benar dof science learninghami, tidak seperti konsep abstrak yang benar-benar nyata adanya didepan mereka."*

c. The lack of facilities

A large number of students as mentioned above also do not offset the availability of adequate infrastructure. Tomi Ariansyah, S.Pd states although already available classrooms interactive media, but in utilization should share with the utilization of other things. The media room is sometimes used for extracurricular activities, sometimes used for activities that are conditional, and incidentals, such as learning activities six grade. This is because the location of the media space is located next to the six grade. Tomi Ariansyah, S.Pd add:

> "Eighty percent is what we wear, just sometimes the condition is less convenient for children, when it comes dirty, not ready so.

[67] Ibid, Interview, (Malang, November 20, 2017)

But Alhamdulillah, I am still grateful, still available instructional media space."[68]

"Delapan puluh persen memang kita pakai, cuma kadang-kadang kondisinya ini kurang nyaman untuk anak-anak, ketika datang kotor, tidak siap pakai begitu. Tapi ya Alhamdulillah, saya masih bersyukur, masih tersedia ruang media pembelajaran."

In explaining the concept of influences on the shape of objects, fifth grade teacher desperately needs props to explain concepts to students. Because often there is the use of media space, so it can not use it. But the Teacher class is always trying to find another alternative to learning continues to run well.

d. Students are joke in the class

At the time of the learning activity takes place, students sometimes feel bored eventually make noise in the classroom. This also happens in fifth grade of SD Islam Moh. Hatta Malang, teachers often find students who were noisy when learning takes place. Especially when learning science material which is considered very boring by the students. Interests of students studying science affect students' understanding of the concept. Students who do not wish to learn the of science learning will have difficulty in learning science and also tend to have misconceptions. As stated by Eko Cahyono, S.Pd follows:

"Children who lack interest in learning science certainly make noise in the classroom, because he was bored. Sometimes

[68] Tomi Ariansyah, Interview (Malang)

difficult to cope with such a child. Already making noise in class, certainly can not be the lesson for not listening."[69]

"Anak-anak yang kurang minat belajar IPA pasti membuat gaduh di dalam kelas, karena ia merasa bosan. Kadang sulit mengatasi anak seperti itu. Sudah membuat gaduh di kelas, sudah pasti tidak bisa pelajarannya karena tidak mendengarkan."

Students who are not interested tend not to listen and pay attention to the full, they tend to ignore what is being taught by the teacher. As a result, the concept of science is learned becomes difficult and the students tend to have misconceptions.

Image 4.8 Students are joke in the class

C. Findings and Propositions in SD Islam Moh. Hatta Malang

1. Teacher Manage Teaching and Learning In The Material Of Science At Fifth Grade Of SD Islam Moh. Hatta Malang

Implementation science teaching in elementary school students of fifth grade in SD Islam Moh. Hatta Malang implemented using student-

[69] Eko Cahyono, interview (17 November 2017)

centered learning model. This learning model requires students to active learning in the classroom so that the masterclass fifth grade in SD Islam Moh. Hatta Malang just needs to adjust the active students in classroom activities. Masterclass served as facilitator and motivator for teaching and learning in the class. In addition, to train students' independence, the class teacher always reminded the students to look for that will be studied next day. As well as any prior learning activity starts, the class teacher always held a pre-test to determine how far the students' understanding regarding the material to be taught.

Learning phase begins with the preparation of Lesson Plan (RPP) before the semester begins. At this stage, grade teacher conducts an analysis of Competencies of Core (KI), Competency of Based (KD), and teaching materials in the student's book adapted to students' level of cognitive ability. Before RPP applied, the first-grade teacher, to coordinate with the headmaster. RPP drafting done by the class teacher and not done collectively. This is because there is no team in the RPP SD Islam Moh. Hatta Malang.

The next step is an evaluation. Implementation of evaluation adapted to the rubric assessment listed in the RPP. There are three types of evaluation, namely formative, summative, and diagnostic. Formative evaluation is done after the completion of a provision of learning materials, summative evaluation is done after the semester is finished (UAS). Meanwhile, the diagnostic evaluation is done to determine the

development of the fifth-grade students Scoring the authority of teachers of grades to be submitted to Master of curriculum.

2. **Teachers Strategies In Reducing The Misconception Of Science Learning In The Material Of Force and Motion at Fifth Grade**

Based on the data exposure, it was found that teachers strategies in reducing the misconception of science learning in the material of Force and Motion at Fifth Grade of SD Islam Moh. Hatta Malang can be classified as follows is:

First, identification the concepts of Force and Motion in science learning. This step is performed when completed provision of material concepts to students. Teachers identify the concepts that occur misconceptions of science learning. Teachers know or reveal their misconceptions occur in students and find the cause. *Second,* write the identification in Table. To facilitate the teachers understand the causes and how to overcome misconceptions Forces and Motion, teachers create a table identification results in tabular form.

Third, create the steps of learning in reducing the misconceptions. Teachers make the learning steps that teachers, among others: 1) giving the students to inform their idea. Students are required to disclose their preconceptions before the teacher gives the correct concept. 2) students discussion. The discussion is conducted independently by the students, the students play an active role in the learning process. Question or

statement from the student addressed by the other students, the teacher is only as a listener and justify at the end of the discussion. 3) use of visual media, such as pictures, video, and props. This step is done the teacher to explain the material associated with abstract objects. Say, a matter Forces and Motion, in addition to the use of visual media is also using Roleplaying.

Fourth, reduce the students motivation. This step is done the teacher to restore the spirit of the missing student learning. The forms of motivation are made that provide rewards when students are well-behaved, punishment (punishment) if a student misbehaves or violates the order of the class and give praise in group activities. *Fifth*, giving the target of learning achievement. This work is done so that students are more disciplined and have a clear goal in learning.

Sixth, coordination between teachers. This strategy is to synchronize the activities of fellow classroom learning. Teachers also involve princof science learningl and curriculum to consult Waka learning steps that will be given to students in grade V SD Islam Moh. Hatta Malang.

3. Obstacle In Reducing The Misconception Of Science Learning In The Material Of Force and Motion at Fifth Grade

Some of the obstacles faced by teachers in reducing science learning misconceptions on the matter Forces and Motion, among others; *First*, preconceptions students are not true. This is because before the material

is taught the students own preconceptions respectively. Could be because of the environment that they see and hear, because of the influence of everyday language, and other causes. *Second*, it is difficult to teach abstract concepts to students. Abstract concept different from the concept of the concrete, which is a concrete concept seen or viewed directly by them. For example in the concept of mass and length, it is an abstract concept that is simple but difficult to explain to the students. They mistakenly think that the "masses" are "heavy", but it was different.

Third, the lack of facilities that support. The quality of instructional media space is not adequate, and their use is still mixed up with other activities become an obstacle for teachers to provide effective teaching to students of class V. Fourth, the students joked while learning. Due to the lack of interest in learning science by students, they regard learning science concepts are very boring. So that they become bored and do not pay attention to the teacher who was explaining to the class.

Table 4.3

Findings and Proposition in SD Islam Moh. Hatta Malang

Focus	Research findings
Teacher manage teaching and learning in the material of science at fifth grade of SD Islam Moh. Hatta Malang	- Implementing learning is the Masterclass of fifth-grade - Most science teacher education background is not linear with the requirements of the profession. - RPP development tailored to the results of the initial assessment of students. - Developers RPP is Masterclass and Wakakurikulum. - RPP development carried out before entering the new semester.

	- During the Masterclass, accompanied student learning. - Learning tailored to the RPP. - Learning implemented in the classroom and outside the classroom as needed. - Learning materials tailored to the characteristics of the students. - There are three types of evaluation, namely formative, summative, and diagnostic. - Instruments matter on the formative and summative evaluation made by the Masterclass of fifth-grade. - Indicators about simplified according to the student's ability.
Teachers strategies in reducing the misconception of science learning in the material of Force and Motion at fifth grade	- Identification the concepts in science learning - Write the identification in table - Create the steps of learning in reducing the misconceptions. o Giving the students to inform their idea. o Studnts discussion. o Using of instructional media. o Improve students' motivation. - Giving the target of learning achievement. - Coordination between teachers.
Obstacle in reducing the misconception of science learning in the material of Force and Motion at fifth grade	- Preconceptions students are not true. - Difficulty understands abstract concepts. - The lack of supporting facilities - Instructional media space that has not been representative. - Students joked when learning activities.

CHAPTER V

RESEARCH DISCUSSION

Natural Sciences is the subject that is very important for students, because natural science is not just a science that must be understood by students but also relate to everyday life. However, implementation of natural science learning there are several concepts are poorly understood by students. Many students difficult to understand the concept in science subject, expecially physics. They are have a low understanding of the concept of force and motion. In physics, the force and motion are interchangeable. They are catch that; if there is no force, there will be no movement.

Learning in the classroom is the responsibility together all the elements of education. Teachers as the cutting edge and forefront in reducing student misconceptions demanded to be responsive to all obstacles in the implementation of learning for students. Therefore, teachers need strategies that can be implemented to overcome barriers to the implementation of repair misconceptions in students.

In this section, presented a discussion of theory on which the research with the results of our analysis on data and research findings related to; (1) teacher manage teaching and learning in material of science at Fifth Grade of SD Islam Moh. Hatta Malang, (2) the teachers strategies in reducing the misconception of science learning in the material of Force and Motion at Fifth Grade of SD Islam Moh. Hatta Malang, (3) the obstacle in reducing the misconception of science

learning in the material of Force and Motion at Fifth Grade of SD Islam Moh. Hatta Malang.

A. Teacher Manage Teaching and Learning In The Material Of Science At Fifth Grade Of SD Islam Moh. Hatta Malang

1. Lesson planning

One of the keys to success in achieving the goal or dream is their planning. Included in this is a learning activity. Implementation of learning to be effective and efficient, if supported by the Lesson Plan (RPP) was overcooked and systematic. This is because the learning activities is a system that consists of many components are interlocked with each other. One of these components is lesson plan (RPP).

Permendikbud Number 81A Year 2013 stating that the lesson plan is a plan developed a detailed study of a particular subject matter or theme that refers to the syllabus. RPP include: (1) Data schools, subjects, and grade / half; (2) the subject matter; (3) the allocation of time; (4) learning objectives, KD and indicators of achievement of competencies; (5) learning materials; learning methods; (6) media, tools and learning resources; (7) steps of learning activities; and (8) ratings.[70]

Every teacher in any educational institution obliged to prepare lesson plans for the classroom where the teacher is teaching. Lesson plan development can be done at the beginning of each semester or the beginning of the school year, with the intention that the lesson plan has

[70] Permendikbud No. 81 A Year 2013 on the Implementation of the Curriculum

been available prior to the beginning of each learning implementation. Lesson plan development can be done independently or in groups through consultation and subject teachers or through the forum Teachers Working Group and through supervision of the school principal or senior teacher appointed by the school principal.

The theory also adopted by SD Islam Moh. Hatta Malang in preparing and developing the lesson plan. In this case the development of the lesson plan in SD Islam Moh. Hatta Malang did before the new semester begins. As for the stages of preparation of the lesson plan in SD Islam Moh. Hatta Malang is; (1) Teacher class conducted an analysis of Competency of Core (KI) and the Competency of Basic (KD) in the curriculum and teaching materials in the Book of Students, (2) Teacher class sorting KD and adapt to students' cognitive abilities, (3) Draft of lesson plan, then coordinated to parents to find out if there are things that need to be revised, (4) Draft of lesson plan is then submitted to the headmaster to be examined and approved, and (5) Teacher class implements the lesson plan has approved by Headmaster.

The lesson plan is created by teacher class of fifth grade is verry good, especially in strategy of learning. But, the teacher does not implemented all of the strategy in learning activities. In arranging the lesson plan, teacher has filled the requirement of the component of lesson plan. Whereas, the teacher created the strategy in lesson plan, this is not related which the action.

2. Implementation of Teaching and Learning

After Lesson Plan is made, the next is implementing them in learning activities. Teachers, in this case, must take into consideration various aspects that allow programs to run effectively.

The success of the school in providing quality education depends on the significance of the overall organizational planning of the school and the effectiveness of teaching and learning strategies applied by teachers in class. A suitable environment for students is characterized by its structure and organization, having the appropriate furniture arrangement, suitable learning materials, presentation of curriculum-related, and provide ease of access to the student's work.

The strategy is also interpreted as an outline of the bow to act in order to achieve specific targets. If associated with learning, a strategy can be defined as the general patterns of activities of teachers and students in the realization of teaching and learning activities to achieve the objectives that have been determine.[71] Such as the theory, in learning activity at fifth grade, the teacher is implemented the good strategies in reducing the misconception of science learning in material of fore and motion.

During the learning activities, teachers class of fifth grade in SD Islam Moh. Hatta Malang is realize that he is not only are than a facilitator and motivator. But, the learning activities should also be

[71] Syaiful Bahri Djamarah and Aswan Zain, *Strategi Belajar Mengajar* (Jakarta: Rineka Cipta, 2002), p. 5

monitored and evaluated at any time to see the development or progress of students, through observation or testing. Periodically do informal tests to provide feedback, in order to be a better implementation of the program.

3. Evaluation of Teaching and Learning

The evaluation process of seeking to obtain information the extent to which the learning activities to give effect to the students. Because who wants to know is the quality of learning, so in essence, the information gathered in the evaluation process, the first user is a teacher. With the results obtained from the evaluation process, a teacher can take a stand whether the learning process has been going well, and whether the teacher has been able to turn to the subject of the next, or whether he should be approach or method to another at the next event, and other things so.[72]

The evaluation of teaching and learning at fifth grade of SD Islam Moh. Hatta Malang did by teacher's class and tailored to the curriculum and RPP is used. The evaluation covers three areas of competence, namely affective, cognitive and psychomotor. The evaluation was done in two forms, namely the evaluation process and learning outcomes. Both forms of this evaluation have their respective functions. Evaluation process carried out during the learning process, namely in the form of

[72] Amalia Sapriati et al, Learning science in elementary (Jakarta: Earth Literacy, 2008), p.7

teacher observing student behavior includes how students behave to one another, the attitude of the students when the teacher explains the material, and the attitudes of the students when getting assignments from teachers. The result of this evaluation serves to determine the student's level of development. As for the evaluation of the results is done when a matter is complete or incomplete.

In implemented the evaluation of teaching and learning, the teacher has been used the good evaluation. Cause the misconception can diminish by students about the material of force and motion. The students knows the concept of this material, they are not confused the concept of force and motion.

B. Teachers Strategies In Reducing The Misconception Of Science Learning In The Material of Force and Motion at Fifth Grade

Learning science is an important subject for students because the science learning is also linking the material with everyday life. Students often have misconceptions about science learning should not correspond with the true science studies. Therefore, teachers need to overcome or reduce the student misconception according to scientific studies. One misconception that occurs in fifth-grade is matter Forces and Motion. Some of the efforts made in elementary school classroom teachers Islam Moh. Hatta in correcting misconceptions on material science learning Forces and Motion can be described as follows:

1. Identification the concepts of Force and Motion in science learning

Identification of the concepts of science conducted to determine how the level of misconceptions that occur in students. Identification of concepts in fifth-grade SD Islam Moh. Hatta Malang carried out with reference to the results of student assessment. Teachers do a debriefing to determine the results of students' understanding of the concept after the material taught Forces and Motion. This effort of teachers to determine the cause of the students had misconceptions so that teachers can know how or how to correct errors in the material concept Forces and Motion in fifth-grade.

2. Write the identification in Table

Based on the results of the identification of student misconceptions done by teachers and analyzed the causes as well as the obstacles, the teacher class of fifth-grade in SD Islam Moh. Hatta Malang about misconceptions students gains an overview of the matter Forces and Motion presented as in the following table.

Table 5.1 Table Results Identification Misconceptions

No.	Concept	Why of misconceptions
1.	Understanding about Force	Preconceptions Students
2.	Stationary objects do not have any force	Reasoning which is incomplete or incorrect
3.	The influence of body weight against the force and motion	Preconceptions Students

Based on the above table, some students have misconceptions about the concept Forces and Motion. In no.1 students had misconceptions sense of force, which is the cause of the initial concept of preconception or students, no.2 students said objects do not have any force silent, following the students' misconceptions on science learning. Known causes are the reason that is incomplete or incorrect, no.3 students experiencing misconceptions about the effect of body weight on force and motion, is the cause of the student preconceptions.

With the identification of the teacher can determine the cause of misconceptions in students with results of tests conducted. Not only do the tests, teachers also conduct interviews for students to adjust to the results obtained after the test.

From the results of identification by teachers, for the learning process carried out further, teachers can find the steps to implement a method or a way to reduce science learning materials misconceptions Forces and Motion in fifth-grade SD Islam Moh. Hatta Malang.

3. Create the steps of learning in reducing the misconceptions

a. Giving the students to inform their idea

SD Islam Moh. Hatta Malang implementing student-centered learning has implications for the left fan students in learning activities in the classroom. This will have an impact on students who feel inferior so as to build confidence in their spirit. In addition, with the chance to

express their ideas constantly to the students will have an impact on student independence in learning. Students are required to and do not feel inferior to other friends so that the inferior properties and low self-esteem will be helped by the students speak in front of the class.

The positive impact of learning science to overcome misconceptions on the subject material Forces and Motion is that students can freely argue any related concepts previously learned. Teachers can also find out the cause of the initial conception of the students and how to resolve errors that concept. The positive impact is independent students can progress more quickly, because it does not depend on the teacher, on the other hand, students can more freely mingle with classmates because it does not feel special.

b. Students discussion

Discussions jointly conducted by the class teacher in SD Islam Moh. Hatta Malang intended to provide training to the students to think logically, and are able to express arguments in solving a problem. This discussion is done to solve the problem of the misconception that occurs in science learning in the subject matter Forces and Motion, which is performed continuously both within, and outside of the learning process.

How that is done also varied; 1) The start of each student shall render an opinion at the beginning of learning and then taken up by other students, 2) each student should prepare the questions and answered and

explained by other students, 3) the teacher prepares a problem as will be discussed later students each comment about the problem.

This strategy, if examined closely, a more precise character term as planting strategy. Through this strategy, students are expected to have broad insight that the estuary will support the creation of a comfortable learning environment for all students. In this regard, the concepts that need to be developed by teachers to correct misconceptions on material science learning force and weight, among others; sense of force, influence of the force to the acceleration of the motion of objects, force free fall, the sense of motion, as well as the influence of body weight on force and motion.

c. Use of the instructional media

Media is one of the essential components of learning that must be met so that the learning process is effective and efficient. Clarify the role of instructional media information submitted by teachers, as well as delivering information that cannot be expressed by teachers. With media, abstract learning materials will become more concrete for students, especially students at the elementary level. Included in this is the explanation of abstract concepts that exist in fifth grade, the abstract concept led to students experiencing misconceptions often called misconceptions. Misconceptions that occur in students caused them to experience barriers to understanding the learning material. However,

keep in mind by teachers, that using instructional media must be adapted to the type of obstacles students.

Use of instructional media teachers should consider the characteristics and learn forces of students. Not just any learning media according to the needs and abilities of students. Moreover, in choosing the media for the sake of learning, according to Sudjana & Rival should consider the following criteria; a) accuracy with learning goals; it means learning media selected on the basis of instructional objectives that have been set. Instructional objectives which contain elements of comprehension, application, analysis, synthesis further enable the use of instructional media, b) support for the content of teaching materials; means materials that are facts, principles, concepts and generalizations really need the help of the media, to make it easier to understand the students, and c) ease of obtaining media; meaning that the required media are easy to obtain, at least, is made by teachers on teaching time.[73]

Based on observations and interviews, found that the use of instructional media for fifth-grade students in elementary Islam Moh. Hatta Malang has been adapted to the type of obstacles students. For example, carried out by teacher classs of fifth-grade Eko Cahyono, S.Pd, to help students who have misconceptions about understanding the concept of force, the teacher makes the media by showing a picture "The fruit does not fall far from the tree." While the concept of error Weight,

[73]Fathurrohman, et al, *Investment Through Teaching and Learning Strategies and Concepts General Concepts Islami* (Bandung: PT. Refika Aditama) 2009

teachers use media visual form of the video to understand and concentrate fifth-grade students in learning activities.

d. Improve the student motivation

The paradigm shift of education/learning has put the teacher not only as a teacher, more than that; the teacher also acts as a facilitator, motivator, catalyst, and mediator. The role of the teacher as an indispensable motivator of students, it has the spirit of learning. Classes in which students met with high motivation to learn will be the class more lively and dynamic. That will create a comfortable learning climate for students. Therefore, teachers must be creative in fostering students' motivation.

Forms of efforts to provide motivation are very diverse, such as giving compliments, involving students, giving reward and punishment, advice, and so forth. Mental students with special needs who are still unstable demand for teachers able to provide motivation when students are in a state of mood or loss of enthusiasm for learning. As for other forms of motivation attempts to special needs students who performed in the fifth-grade of SD Islam Moh. Hatta Malang, among others:

1) Give praise,
2) Involve students in the learning process,
3) Reward in the form of goods or special treatment,
4) Punishment when students violate the rules or misbehave, and
5) Provide advice when students are feeling saturated.

4. Giving the target of learning achievement

Provision of learning achievement targets in each of the different institutions. SD Islam Moh. Hatta Malang provides targeted learning achievement to students in accordance with the RPP that was created by the Teacher class. According to Standard Process to the Minister of National Education No. 41 of 2007, indicators of achievement of competencies are behaviors that are measured and/or observed to demonstrate achievement of certain basic competencies that the reference subjects assessment.[74] Indicators of achievement of competencies defined by using the operational work that can be measured, which the knowledge, attitudes, and skills. This means indicators of achievement of competencies is a formulation of ability to be carried or displayed by the students to demonstrate the achievement of basic competence (KD). Thus competence achievement indicator is a measure of the achievement of a KD. This is consistent with the intent that the indicators of achievement of competencies to be a reference assessment subjects.

Meanwhile, in reducing science learning misconceptions on the matter Forces and Motion, a fifth-grade teacher in SD Islam Moh. Hatta Malang also provides targeted learning outcomes in the form of indicators that have been set. Types of learning outcomes matter Forces and Motion, among others; student sense of force, Students know influences the acceleration of the motion of objects, students understand

[74] Ministerial Regulation No. 41 of 2007 on the Lesson Plan

the force of free fall, the students know the sense of motion, as well as students to understand the effect of body weight on force and motion.

This is a good strategy, especially to know the aims of learning activity. Giving the target can help the teacher to implementation of teaching and learning in the class. The target or learning purpose in lesson plan must have by a teacher to know how to become students been better in understanding the material in learning activity. The strategy of teacher to give the target in reducing the misconception of science learning in material of force and motion is very good to repair it.

5. Coordination between teachers

The form of coordination between teachers in SD Islam Moh. Hatta Malang is already evident. As outlined in the previous section, the coordination between teachers in the weekly regular meeting activities along with other classroom teachers. Regular meetings are done to prepare the learning activities for the next week. The results have then coordinated the meeting to the parents through the parents and the community to the school principal. Teacher class with master of curriculum tasked with monitoring the progress of students in the subject, either in the form of recommendations and actions directly related to student learning.

Teacher class of fifth-grade makes learning steps to address student misconceptions in science learning materials Forces and Motion. The

teachers are forefront in reducing the student's misconception. Therefore, between teachers must coordination each other about strategy that can be implemented to repair the misconception in students. Then coordinated to the other teachers to provide feedback and reducement of the lesson plans have been implemented by the teacher class of fifth-grade. In order for these reducements can be input and consideration for the sake of learning activities in the classroom.

C. Obstacle In Reducing The Misconception Of Science Learning In The Material Of Force and Motion At Fifth Grade

Based on observations and interviews as well as checking the documents, conducted at the stage of collecting data, it was found that the obstacles or barriers faced by teachers in reducing science learning misconceptions on the matter Forces and Motion in fifth-grade of SD Islam Mo. Hatta Malang can be divided into three categories:

1. Student

These constraints arise from within the students themselves. A study conducted by Aldika Sabdarey about problems that occur in students or the cause of the misconceptions. The problems arising in respect of students who stated, among other things; preconception or early concept of students, the notion of associative students, humanistic thinking,

reasoning which is incomplete or incorrect, intuition is wrong, the students' cognitive stage, the ability of students, and student interest.[75]

The constraints that arise from students in elementary Islam Moh. Hatta Malang, among others:

a) Variacy concept of the students

These constraints arise at students who have a first draft of different and incompatible with scientists. As experienced Rifki Lamsy, students of fifth-grade in SD Islam Moh. Hatta Malang experiencing misconception about the force of motion. Teachers had difficulty uniting the opinion of the students who are different because they are already being affected by the everyday language they use in interpreting the concept of force and motion. Many students already have initial concepts or preconceptions about a matter before the student following the formal lessons under the guidance of teachers. This initial concept often contains misconceptions. These preconceptions are usually obtained from parents, friends, school early, and experience in the student environment. Preconceptions of the students showed that children from birth do not mind him, but continued actively to understand something. Misconceptions will be even more; if that affects the formation of the concept in this child have many misconceptions, such as parents,

[75]Aldika Sabdarey, "*The misconception IPA Physics Elementary School Grade V Semester 2 SE Gamping Sleman*", Thesis, Faculty of Teacher Training and Education Sanata Dharma University in Yogyakarta, 2016, p. 13-17

neighbors, friends, and others. It can be concluded that the child's environment will affect the formation of child concept.[76]

b) Difficult to understanding the abstract concepts

These constraints are found in fifth-grade of SD Islam Moh. Hatta Malang who have difficulty in explaining abstract concepts. This constraint is particularly true of students with slow cognitive development, such as autism, slow learner, dyslexia and mental retardation. Most of the materials science is an abstract concept such as measurement, material changes, a phase of matter, energy and motion. These concepts are less likely to be studied by students who do not have the ability to think normally. As a result of these characteristics, it will take longer to understand a concept properly. If this error occurs continuously (consistent), it can be said to suffer from misconceptions or misconceptions.[77]

c) Students are joke in the class

A common obstacle faced by teachers in addressing misconceptions and reduce science teaching is student spring make noise in the classroom. This leads to the handling of students who have misconceptions not optimal.

[76] Paul Suparno, *Miskonsepsi dan Perubahan Konsep Dalam Pendidikan Fisiska* (Jakarta: Grasindo, 2005), p. 25

[77] Ibid, p. 26

2. Teacher

Some of the constraints that come from teachers, among others; first, the background of teacher education is not appropriate. SD Islam Moh. Hatta Malang institution has this constraint; teacher's class has the educational background that is not appropriate. The implications of this educational background mismatch lead teachers to have difficulty in overcoming learning science concepts that an error occurred in fifth-grade. Second, the lack of ideas in learning. Due to lack of instructional media facilities, Teacher classes often have run out of ideas in the teaching of science learning, especially in addressing and fixing Forces and Motion misconceptions that occur in students.

3. Facilities and Infrastructure

Facilities and infrastructure in helping to address and rectify misconceptions of students is hardware, and software that are used to support the successful implementation of learning. Facilities and infrastructure in institutions of SD Islam Moh. Hatta Malang adequate indeed has to be said, however, for specific means of learning science is not representative. For example, the use of space should be alternated with the use of media in others.

Virtually all the educational facilities in certain education units can be used in learning activities, but to optimize the learning process needs to include accessibility for the smooth mobilization of students. Thus,

these institutions still have to reduce the quality and completeness of facilities and infrastructure.

Constraints above, when further scrutiny have links with each other, both of the problems of students, as well as facilities and infrastructure. First, the problems related to a student, student difficulties in communicating feelings and ideas led to the teacher is less able to understand them. This then affects the difficulty of teachers in organizing learning appropriate to the needs of students. In addition, the diversity of students' conceptions and characteristics, as well as difficulties abstract concept of matter Forces and Motion makes teachers have difficulty in providing maximum service.

Problems related to the teacher, teacher class of fifth-grade complained about the difficulty in dealing with rowdy students in the classroom. This is due to lack of interest of students in learning science concepts. This lack of understanding causes difficulty in conditioning the student's teacher, so it is not easy to explain the concept Forces and Motion to students when they are bullies. Second, the above constraints exacerbated by the lack of infrastructure support in helping teachers to repair on material science learning misconceptions Forces and Motion. For example, the condition of media space is used for other activities in SD Islam Moh. Hatta Malang.

CHAPTER VI

CLOSING

A. Conclusion

Based on the data exposure, the results of the analysis, and discussion has been described in the previous section, the overall results of this study can be summarized as follows: *first*, Teacher manage teaching and learning in the material of science at fifth grade of SD Islam Moh. Hatta Malang using the active learning model. SD Islam Moh. Hatta Malang using full education services and modifications to the implementing of learning is the classroom teacher or subject teachers.

Second, teachers strategies in reducing the misconception of science learning in the material of Motion and Force at Fifth Grade, among others; identification of science concepts that could potentially occur on student misconceptions, write down the identification results into the table, making the learning steps to address misconceptions provide targeted learning achievement, and coordination among teachers. While learning steps performed by the Masterclass of fifth-grade include; giving the students to inform their idea, students discussion, use of instructional media, and reducee students' motivation.

Third, obstacle in reducing the misconception of science learning in the material of motion and force at fifth grade, among others; Preconceptions students are not true, Difficulty understands abstract concepts, the lack of

supporting facilities, instructional media space that has not been representing institutions, and students joked when learning activities.

B. Suggestion

As for suggestions that can be submitted relating to the results of this studies are:

1. For Teachers and Schools

a) Reducing strategy formulation science learning misconceptions on the material of Forces and Motion by teachers should use quality management paradigm that PDAC (Plan, Do, Check, Act), to be more systematic and focused so that the results obtained more leverage and measurable;

b) There needs to be a thorough analysis of the strengths, weaknesses, opportunities, and challenges / SWOT before strategize misconception reducee science teaching in basic material Forces and Motion;

c) Various constraints need to be managed using a management problem by involving various stakeholders such as principals, teachers, parents, staff, and community. The steps that can be taken is to hold a Focus Group Discussion (FGD);

d) The intensity of discussion and exchange of experience among teachers, both fellow teachers, and the school community should be reduceed;

2. For Parents'

a) Parents should be more open to teachers and schools about the development and conditions of the students when at home;

b) Should pay more attention and assist their children in learning, especially in everyday language and learning related to their lives. Because learning science is very influential in our daily lives that can lead to misconceptions;

3. For the Government

Government in this regard and the Department of Education in order to further reducee the support, both material (support infrastructure, the provision of specialized teaching materials), as well as non-material (reduceement of teacher competence, and socialization).

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KEMENTERIAN AGAMA REPUBLIK INDONESIA
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FAKULTAS ILMU TARBIYAH DAN KEGURUAN
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http:// fitk.uin-malang.ac.id. email : fitk@uin_malang.ac.id

BUKTI KONSULTASI SKRIPSI
JURUSAN PENDIDIKAN GURU MADRASAH IBTIDAIYAH

Nama : Fajriya Rizqi Rahmawati
NIM : 14140094
Judul : The Strategy of Teacher To Improving The Misconception of Science Learning In Material of Force and Motion at Fifth Grade of SD Islam Moh. Hatta Malang
Dosen Pembimbing : Dr. H. Nur Ali, M.Pd

No.	Tgl/ Bln / Thn	Materi Konsultasi	Tanda Tangan Pembimbing Skripsi
1.	16 Januari 2018	BAB I, II, dan III	
2.	20 Maret 2018	BAB I – VI	
3.	23 Maret 2018	BAB I – VI	
4.	27 Maret 2018	BAB I – VI	
5.	13 April 2018	Pendahuluan, BAB 1 – VI, dan Lampiran	
6.	17 April 2018	Pendahuluan, BAB 1 – VI, dan Lampiran	
7.	20 April 2018	Pendahuluan, BAB 1 – VI, dan Lampiran	
8.	2 Mei 2018	Perbaikan Bahasa Inggris	
9.	11 Mei 2018	ACC Ujian Skripsi	

Malang, 11 Mei 2018
Mengetahui
Ketua Jurusan PGMI,

H. Ahmad Sholeh, M.Ag
NIP 197608032006041001

Certificate No. ID08/1219

APPENDIX II

Letter of Research Permit inSDI Mohammad Hatta Malang

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 : 2810 /Un.03.1/TL.00.1/10/2017 — 20 Oktober 2017
Sifat : Penting
Lampiran : -
Hal : **Izin Penelitian**

Kepada
Yth. Kepala SDI Moh. Hatta Kota 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	:	Fajriya Rizqi Rahmawati
NIM	:	14140094
Jurusan	:	Pendidikan Guru Madrasah Ibtidaiyah (PGMI)
Semester - Tahun Akademik	:	Ganjil - 2017/2018
Judul Skripsi	:	**Strategi Guru dalam Memperbaiki Miskonsepsi Pembelajaran IPA pada Materi Pokok Massa (Kg) dan Berat (N) Siswa Kelas 5 SDI Moh. Hatta Kota Malang**
Lama Penelitian	:	**Oktober 2017** sampai dengan **Desember 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
NIP. 19650817 199803 1 003

Tembusan :
1. Yth. Ketua Jurusan PGMI
2. Arsip

APPENDIX III

Certificate of Research in SDI Mohammad Hatta Malang

YAYASAN BINA INSAN KAMIL [YANAIKA] INDONESIA
SD ISLAM MOHAMMAD HATTA
Terakreditasi A
NIS : 100630 – NSS : 102056104009 – NPSN : 20533897
Jl. Simpang Flamboyan no. 30 Malang 65141, Tlp. (0341) 413003
Website : sdimohammadhatta.sch.id e-mail : sdimh@sdimohammadhatta.sch.id

SURAT KETERANGAN
Nomor : 205/S.Ket/KS/SDI-MH/III/2018

Yang bertandatangan di bawah ini :

Nama : Suyanto, S.Pd., M.KPd

NIY : 992069022

Jabatan : Kepala SD Islam Mohammad Hatta

Menerangkan dengan sesungguhnya bahwa :

Nama : Fajriya Rizqi Rahmawati

NIM : 14140094

Program Studi : Pendidikan Guru Madrasah Ibtidaiyah

Telah melaksanakan penelitian di SD Islam Mohammad Hatta mulai 17 Oktober sampai dengan 22 Desember 2017 guna penyusunan skripsi dengan judul **"Strategi Guru dalam Memperbaiki Miskonsepsi Pembelajaran IPA Siswa Kelas VC SDI Mohammad Hatta Malang."**

Demikian surat keterangan ini dibuat dengan sebenarnya dan dipergunakan sebagaimana mestinya.

Malang, 9 Rajab 1439 H
27 Maret 2018 M

Kepala Sekolah,

Suyanto, S.Pd.,M.KPd

APPENDIX IV

RENCANA PELAKSANAAN PEMBELAJARAN
(RPP)

Sekolah	:SD Islam Mohammad Hatta
Kelas /Semester	: V/1
Pembelajaranke-	: 5
FokusPembelajaran	: IPA, Matematika, Bahasa Indonesia
Alokasi Waktu	:6 x 35 menit(6 JP)
Judul	: Gaya dan gerak

A. KOMPETENSI INTI (KI)

1. Menerima dan menjalankan ajaran agama yang dianutnya.
2. Memiliki perilaku jujur, disiplin, tanggung jawab, santun, peduli, dan percaya diri dalam berinteraksi dengan keluarga, teman, guru, dan tetangga.
3. Memahami pengetahuan faktual dengan cara mengamati (mendengar, melihat, membaca) dan menanya berdasarkan rasa ingin tahu tentang dirinya, makhluk ciptaan Tuhan dan kegiatannya, dan benda-benda yang dijumpainya di rumah dan di sekolah.
4. Menyajikan pengetahuan faktual dalam bahasa yang jelas, sistematis dan logis dalam karya yang estetis, dalam gerakan yang mencerminkan anak sehat, dan dalam tindakan yang mencerminkan perilaku anak beriman dan berakhlak mulia.

B. KOMPETENSI DASAR DAN INDIKATOR PENCAPAIAN KOMPETENSI

IPA

Kompetensi Dasar	Indikator Pencapaian Kompetensi
3.3 Memahami hubungan gaya, gerak, dan energi melalui pengamatan, serta mendeskripsikan penerapannya dalam kehidupan sehari-hari	Menjelaskan tentang hubungan antara gaya dan gerak setelah melakukan percobaan

MATEMATIKA

Kompetensi Dasar	Indikator Pencapaian Kompetensi
3.5 Mengemukakan kembali dengan kalimat tersendiri, menyatakan kalimat	Menjelaskan tentang hubungan antara gaya dan gerak setelah melakukan percobaan

BAHASA INDONESIA

Kompetensi Dasar	Indikator Pencapaian Kompetensi
3.1 Menggali informasi dari teks laporan hasil pengamatan tentang gaya, gerak, energi panas, bunyi, dan cahaya, dengan bantuan guru dan teman dalam bahasa Indonesia lisan dan tulisan dengan memilih dan memilah kosakata baku 4.1 Mengamati, mengolah, dan menyajikan teks laporan hasil pengamatan tentang gaya, gerak, energi panas, bunyi, dan cahaya dalam bahasa Indonesia lisan dan tulis dengan memilih dan memilah kosakata baku.	Menceritakan pengalaman mengenahi gaya dan gerak dengan menggunakan kosakata baku

C. TUJUAN PEMBELAJARAN

1. Dengan kegiatan eksplorasi menggerakkan benda-benda di sekitar sekolah, siswa mampu mengidentifikasi pengaruh gaya terhadap gerak dengan tepat
2. dengan kegiatan eksplorasi, siswa mampu menjelaskan konsep KPK dengan benar
3. dalam tulisan yang dibuatnya, siswa mampu menceritakan pengalamannya mengenai gaya dan gerak dengan menggunakan kosakata baku

D. MATERI PEMBELAJARAN

1. Gaya dan gerak benda
2. KPK dan FPB

E. METODE PEMBELAJARAN

PendekatanPembelajaran : Saintifik.
MetodePembelajaran :Simulasi, percobaan, diskusi, tanyajawab, penugasan, dan ceramah.

F. MEDIA/ALAT, BAHAN, DAN SUMBER BELAJAR

Media/Alat :

1. Teksbacaan.
2. Alattulis

Bahan : -

SumberBelajar :

Buku Guru dan BukuSiswa Kelas V, BukuTematikTerpaduKurikulum 2013 (Revisi 2017). Jakarta: Kementerian Pendidikan dan Kebudayaan.

G. LANGKAH-LANGKAH KEGIATAN PEMBELAJARAN

Kegiatan	Deskripsi	Alokasi Waktu
Pendahuluan	1. Kelas dibuka dengan salam, menanyakan kabar, dan mengecek kehadiran siswa. 2. Kelas dilanjutkan dengan doa dipimpin oleh salah seorang siswa. 3. Siswa difasilitasi untuk bertanya jawab pentingnya mengawali setiap kegiatan dengan doa. Selain berdoa, guru dapat memberikan penguatan tentang sikap syukur. 4. Siswa diajak menyanyikan Lagu Indonesia Raya. Guru memberikan penguatan tentang pentingnya menanamkan semangat kebangsaan. 5. Siswa diminta memeriksa kerapian diri dan kebersihan kelas. 6. Siswa memperhatikan penjelasan guru tentang tujuan, manfaat, dan aktivitas pembelajaran yang akan dilakukan. 7. Siswa menyimak penjelasan guru tentang pentingnya sikap ***disiplin*** yang akan dikembangkan dalam pembelajaran. 8. Pembiasaan membaca. Siswa dan guru mendiskusikan perkembangan kegiatan literasi yang telah dilakukan. 9. Siswa diajak menyanyikan lagu daerah setempat untuk menyegarkan suasana kembali.	menit
Kegiatan inti	Ayo Mengamati ☞ Guru mengajak siswa untuk membuka dan menutup pintu, mendorong, dan menarik meja, serta meremas selembar kertas, seperti yang diilustrasikan dalam buku. ☞ Guru mengusahakan agar seluruh siswa mendapat kesempatan melakukan kegiatan. Ayo Menulis ☞ Siswa menjawab pertanyaan di buku dan mereka diminta untuk mendiskusikan jawabannya dengan teman sebelahnya. ☞ Siswa membentuk kelompok terdiri dari tiga	0 menit

	orang ☞ Pengalaman siswa tentang gaya dan gerak ditambah dengan meminta mereka menindahkan benda-benda di sekitar mereka. Siswa bisa menjatuhkan, menggelindingkan, atau mendorong benda. ☞ Guru memberi kesempatan kepada siswa untuk bereksplorasi dan menuliskan hasilnya pada buku ☞ Masing-masing kelompok mempresentasikan hasil diskusinya di depan kelas ☞ Dengan bimbingan guru,kemudian siswa membuat kesimpulan tentang gubungan gaya dan gerak ☞ Siswa melakukan permainan lompat kelinci. Permainan ini bertujuan untuk meningkatkan pemahaman siswa tentang konsep Kelipatan Persekutuan Terkecil (KPK) ☞ Siswa mengerjakan soal yang ada pada buku dan saling bertukar jawaban dengan teman kelompoknya	
Penutup	1. Siswa bersama guru melakukan refleksi atas pembelajaran yang telah berlangsung: • Apa saja yang telah dipelajari dari kegiatan hari ini? • Apa yang akan dilakukan untuk menghargai perbedaan di sekitar? 2. Siswa bersama guru menyimpulkan hasil pembelajaran pada hari ini. 3. Siswa menyimak penjelasan guru tentang aktivitas pembelajaran pada pertemuan selanjutnya. Termasuk menyampaikan kegiatan bersama orangtua yaitu: *meminta orang tua untuk menceritakan pengalamannya menghargai perbedaan di lingkungan sekitar rumah lalu menceritakan hasilnya kepada guru.* 4. Siswa menyimak cerita motivasi tentang pentingnya sikap ***disiplin***. 5. Siswa melakukan operasi semut untuk menjaga kebersihankelas. 6. Kelas ditutup dengan doa bersama dipimpin salah seorang siswa.	menit

H. PENILAIAN

1. Lembar kerja matematika dinilai dengan angka
2. Daftar periksa IPA

Kriteria	Ya	Tidak
Siswa dapat menyebutkan jenis gaya yang terjadi saat kursi ditarik dan didorong		
Siswa dapat menyebutkan jenis gaya yang terjadi saat kertas diremas		

3. Daftar periksa Bahasa Indonesia

Kriteria	Ya	Tidak
Dalam cerita yang dibuat sudah memuat jenis benda-benda yang aku pilih		
Dalam cerita yang dibuat sudah memuat cara bagaimana aku menggerakkan benda-benda yang aku pilih		

4. BentukInstrumenPenilaian
   a. JurnalPenilaianSikap

No.	Tanggal	Nama Siswa	Catatan Perilaku	Butir Sikap	Tindak Lanjut

Refleksi Guru:

Malang, 15 Oktober 2017
Guru Kelas V

Mengetahui
Kepala SD Islam Mohammad HattaMalang

H.Suyanto, S.Pd, M.KPd
NIY. 992069022

Eko Cahyono,Spd.
-

APPENDIX V

OBSERVATION SHEET

LEARNING PROCESS IN FIFTH GRADE

1. Teacher Name Classroom :
2. School : SD Islam Moh. Hatta Malang
3. Class / Semester : V/I
4. Day / Date / Time : Friday, October 20, 2017
5. Subjects : Science Learning

No	Aspects observed	Description of Findings
1	Prepare students to learn	Teacher preparation to planning containing learning objectives in operational material, the form of teaching and learning activities, the methods used, timing, lessons,and evaluation.
2	Conducting apperception	There are apperception conducted teacher; checking knowledge, introducingthe idea, and analogy thinking
3	Master the learning material	Teachers can master the subject matter, as evidenced by a good explanation and coherently to the students
4	Associating content with other relevant knowledge	To associate the material with other knowledge, teachers do methods of questioning to students. It's also useful to know the level of insight into students in learning that will be studied
5	Presenting the material accordance with the hierarchy of student	The teacher explains well the material about the force and motion, in accordance with a method that has been prepared before learning begins
6	Linking the material with the realities of life	The materialof force and motion gestures properly explained by the teacher, that is linked to the everyday life of students, like pushing a car, throwing a ball, and others
7	Conduct learning according to competence to be achieved and the characteristics of students	Teachers explain the material with reference to learning objectives and characteristics of students who are adapted to the methods of discussion, question, and answer

8	Usingthe media effectively and efficiently	The mediumusedbytheteacher in thelearningaboutforce and motionisteachingfromthestudentsthemselves, such as draw table
9	Focusing students	In focusattentiontostudents, teachers more rounds in theclassroom. The learningimplementationbythemethodofteacherdiscussion so thatallstudents more active in teaching and learningactivities
10	Engaging students in the use of media	Teachers involve students in practicing media specified by the teacher to hang the material force and motion to the students themselves
11	Fostering active participation of students in learning	The practice and discussion in the learning in the classroom, students can make all the partiality in learning
12	Show an open attitude towards the students' responses	Less teacher gives appreciation to students. Many students can participate by good teachers, but less rewarding for the learning process
13	Cultivate cheerfulness and enthusiasm of the students in learning	Students are very enthusiastic in following the learning in the classroom because teachers using method discussions that don't make students bored
14	Monitor theprogressoflearningduringtheprocess	Teachers monitor studentlearningforlearningtotake place. Endswith a question and answermethod, teachers in knowingwhetherlearningobjectives can be achievedornot
15	Topical use spokethelanguage and clear, good and true	In explainingthe material force and motion, teachersalso use methodslectures. TheteacherwrotedownthesummaryontheBoardwithclear, good, and true. Teachersalso use languagethatiseasilyunderstoodbystudents
16	Delivering the message with the appropriate force	Teachers convey the message that appeals to students, so students are very enthusiasm in learning. So students easily understand the material being taught by the teacher related material force and motion with everyday life
17	Convey a moral message	Teachers give moral to students, such as adviceafter learning completely
18	Reflection or a summary by involving students	Teachers give learning evaluation to students and using the question-answer or post-test
Note:		

APPENDIX VI

INTERVIEW GUIDELINES

A. Interview for Chief of School

Focus	Question
The process of establishment of the school	How does history about SDI Mohammad Hatta Malang?
School management	How admissions in SDIMohammad Hatta Malang?
Students learning in the classroom	How is the learning process of students in the classroom?
Make Learning Implementation Plan (Lesson Plan)	What teacher guide in making a lesson plan (RPP)?

B. Interview For Teachers in Fifth Grade

Focus	Question
Implementation of science teaching in fifth grade	How Student Learning in fifth grade?
	How to compile steps of lesson plan?
	Any reference you in preparing the lesson plan?
	How do you prepare students to learn?
	How do you motivate students?
	How to Evaluate Learning in the classroom?
Teachers strategy to improve science teaching misconceptions	How is your strategy to improve science teaching misconception?
Constraints in reducing science teaching misconception	Any obstacle that you in reducing science teaching misconception?

C. Interview For Students

School name : SDI Mohammad Hatta Malang Date :
Nam Students: Time :
No. Absent : Class : V

No.	Question	Answer
1.	What do you think about the material force and motion?	
2.	Do you like the matter of force and motion?	
3.	Do you understand the material force and motion? Why?	
4.	What difficulties do you face in the material force and motion?	
5.	What is the definition/meaning of force? What is the definition of motion?	
6.	What is a definite relationship between force and motion?	
7.	Is the influence of the force of the motion of a body? Among the two objects are dropped simultaneously, which one is first to ground level?	
8.	Where did you learn the material of force and motion?	
9.	Car speed is not fixed, sometimes faster and sometimes more slowly. According to you, what causes it?	
10.	Why will marbles move more slowly on the ground than on the tiled floor?	
11.	If there are large stones and a small stone dropped from a height equal simultaneously, what happened? Where the stone hit the ground first? Why?	
12.	Andi interesting one table and pull the table contained Budi objects on it. What happened?	

APPENDIX VII

ANSWERS

1. The force is a push or a pull that can affect the state of an object. Example: For example, when pushing the car broke down, pushing the table, pulling carts of sand, kicking the ball, tug of war, etc.
2. Motion is the movement of the position of objects from their place of origin because of their style. Example: when riding a bike, when sport, while playing tug of war, or encourage cabinets using the power of two hands etc.
3. Forces can change the velocity of the object. Car motion sometimes fast and sometimes slow. When the deserted road, the driver stepped on the gas. As a result, the car will go faster. However, when there is another car in front, the driver hit the brakes. As a result, the pace car will slow down. Gas pedal and brake pedal including style form. Therefore, the style may affect the velocity of the object. The force which causes the speed of the car is changing.
4. Downward or toward the earth. That's because there is the pull of the earth (force of gravity) on it.
5. Irregular, resembling a round. Styles can change the shape of the object. When someone puts pressure on clay, they exert a force on clay. Thus, the force can alter the original irregular plasticize into other forms. As a result, the force can influence the shape of the object.
6. That situation may occur because of the influence of the force restrain movement of marbles. Fast or slow rotating or rolling marbles depends on the

strength of the force exerted on the marbles. The force can withstand the motion of objects so that it does notmove if it is pulled or pushed is the frictional force. Frictional force occurs when two objects come into contact surfaces so that the marbles can be stopped gradually.

7. Stone will be thrown farther. When withdrawn, the rubber catapult is released, the stone will be dashed. This indicates that the spring force can result in moving objects. The amount of tensile force on the rubberaffect the velocity of the object. The stronger the pull, the greater the pull, the faster the moving stone. Thus, the distance will be farther away so that a stone was thrown away anyway.
8. Rougher soil surface while the surface more slippery tile floors. It shows the delicate surface of the force and conversely the rough surface, the greater the force. Thus, the friction force is influence by smoothness and roughness surfaces.
9. Both are up at the same time. According to the principles of physics, the mass of the object does not affect the motion of falling objects. So that the object would reach the ground at the same time if the object with air friction ignored because the difference is too small. This is because the object has the same gravitational acceleration.
10. Budi will feel heavier than Andi, so it takes longer to pull it. Mass effect on the styles that will be given to an object. To lift a larger mass will require a larger force anyway, so Budi require a larger force compared with Andi.

APPENDIX VIII

INTERVIEW TRANSCRIPT

Focus	**Implementation of science teaching in the 5th grade**
Informant	Suyanto, S.Pd, M.KPd
Status Informants	Chief ofSDI Mohammad Hatta Malang
Locations	Teacher office
Date	Friday November 17, 2017
Interviewer (P) and the Informant (I)	**Questions and answers**
P	How does history stand SDI Mohammad Hatta Malang?
I	Beginning this school was established in 2003 under the auspices of the Yayasan Bina Insan Kamil or so-called Yanaika in Malang. At the time of this school is pioneering the initiative and intellectual-Muslim scholars who are competent, professional, and concerned about the development of the child as well as the Islamic struggle. One of which isProf. H. MasruchinRuba'i, SH., MS. The lengthof the year, thank God this school is growing rapidly with the number of students who enroll. Because yes is evident incase management and learning in the school, has been very good and got a good appreciation of the surrounding community.
P	How is the learning process of students in the classroom?
I	Learning according to the characteristics and needs, so it is not from the government were dropped directly to children. So we must corrections all. When there is a basic competency that children do not need ya why we give them? Do not make it, so roughly where children need it, they can afford, they can understand, so already we love, and it is translated into practice on a daily basis. So we focus on the process, not on its value. What is certain classroom learning should be fun for kids and not boring?So starting from the assessment, proving to be Learning Implementation the Lesson Plan, how to prepare report cards.
P	What teacher guide in making a lesson plan (RPP)?
I	"KI and KD do exist, but I usually look to more material. So I read the material first, if there is a similar indicator then the KD I streak. Sometimes fitting in class the material too hard for the children, yes I do: take the material much easier if to

	hang students. If RPP was right we make then we collect to the Coordinator, if approved later sowed to the head of school, because there should be a companion and Teacher signature principal.
Informant	Eko Cahyono, S.Pd
Status Informants	A masterclass of Fifth Grade
Locations	Class of fifth grade
Date	Friday October 20, 2017
P	How Student Learning in fifth grade?
I	For fifth-grade learning activities done by Master Classes and Teacher Assistants. Teaching and learning are done in the classroom last sometimes also in the class, so in accordance with the required material. If you need a lab yes in the media room.
P	How to compile steps of a lesson plan?
I	We use indicators that have been adapted to the children. Yeah KD analysis first, or mapping it. The material that I take in accordance with the existing KD mapping it. Indicators derived from government syllabus.
P	Any reference you in preparing the lesson plan?
I	Thematic books themselves, usually I bring problems of books students of DIKNAS, but only take KI and KD course, the difference later in the lesson. KI and KD are there, but I am usually more look into the material. So I first read the material, what children cannot, if not, it goes KD matter where the KD was my streak, because of the material in accordance with the capabilities of children. We use KD indicators that wereanalyzed. The material in accordance with my kids take, but it turns out that the material which I took not finished, so my evaluation.
P	How do you prepare students to learn?
I	To prepare for tomorrow so we remind learning to learn the night, not only the students who are reminded to study at night, parents should also be reminded to accompany their children every night studying. Usually in a group of parents told their children in order to learn this material. Upon entering the classroom of children do post-test, the point to see how much the children learn last night. After completion of the post-test, I give the children the question of how much understanding they learned last night.
P	How do you motivate students?

I	Usually, I give a gift. But even when report cards early. So I collect points every child. Some children asked him strangely.
P	How to Evaluate Learning in the classroom?
I	In accordance with K13, covers three aspects of it. Attitudes, knowledge, and skills. For attitude, Yes, for example fitting the teacher has explained there are still children who noisy, now it makes so assessment materials. Already three times a command, he did not execute, sign too. Ooh means less discipline. If for knowledge or cognitive, make my own question in accordance with the Lesson Plan. If the psychomotor, Yes sometimes there is the task of creating skills fitting so, I usually had the children create a mind map. So as charts so. Certainly not just in school attitude assessment, I and other teachers also work closely with the parents to educate their children. At school, the responsibility of the teachers, in the house is the responsibility of the parents.
Focus	**Teachers strategy to improve science teaching misconceptions**
P	How is your strategy to improve science teaching misconception?
I	Usually, we collaboration to be learning to grade 5, what teaching? how the strategy? etc., in particular, to improve misconceptions experienced by students. So I collaborate with other teachers and parents with a system of collaboration so for example, children are no obstacles in the class then we share with the class teacher then discussed the problem of what, then we'll find a solution as to what to be aware of its development how to continue its resistance what we were looking for a solution together after that can search for results that match the needs. Every week there is also a coordination between the class teacher, then when that day when it would no trial of weight and mass and then we communicate to teachers and parents, his method is like what? What ingredients? and so, after that, we coordinate more with students.
Focus	**Constraints in reducing science teaching misconception**
P	Any obstacle that you in reducing science teaching misconception?
I	If the constraints, in addition to the lack of laboratories, the absence of media/tools that students use practices. So the kids could only see from a video image only. sometimes also limited space for practical use, perhaps we usually do it in the classroom practicum. It difficult to develop clear learning if there is no media and an adequate place.

P	Ather obstacle sir?
I	Yes there is, in addition many children who have different preconceptions. Sometimes to unify perception of students was difficult, because of their different opinions they already know before getting a lesson in the classroom

APPENDIX IX.1

INTERVIEW TRANSCRIPT FOR STUDENTS

School name : SD Islam Moh. Hatta Malang
Date : October 20, 2017
Student's name :Arisma Hafiz Maheswara
Time : 12:30 to 14:00 pm

No.	Question	Answer
1.	What do you think about the material force and motion?	Material force and motion is not too difficult
2.	Do you like the matter of force and motion?	Like, because I love science lessons
3.	Do you understand the material force and motion? Why?	There are some who do not understand, because it is not explained by the teacher
4.	What difficulties you face in the material force and motion?	When teachers do not give an example, so I'm confused because is not given example
5.	What is the definition / meaning of force? What is the definition of motion?	The force was a push or pull
6.	What is a definite relationship between force and motion?	The force can affect the movement
7.	Is the influence of the force of the motion of a body? Among the two objects are dropped simultaneously, which one is first to ground level?	Moving objects as there are forces. For example, a book with a pen, a book used to be till the soil
8.	Where did you learn the material force and motion?	Of teacher (Mr. Eko)
9.	Car speed is not fixed, sometimes faster and sometimes more slowly. According to you, what causes it?	Because of the frictional forces, for example if the sloping path the car will be faster and if the car diremmobil will move slowly because there auger force
10.	Why marbles will move more slowly on the ground than on the tiled floor?	Because of the frictional force
11.	If there are large stones and small stone dropped from a height equal Yag simultaneously, what	Big Stone

	happened? Where the stone hit the ground first? Why?	
12.	Andi interesting one table and pull the table contained Budi objects on it. What happened?	Andi table that pulled faster and tables are drawn Budi slower

APPENDIX IX.2

INTERVIEW RESULTS FOR STUDENTS

School name : SD Islam Moh. Hatta Malang
Date : October 20, 2017
Student's name :Habibi Raihan Nugraha
Time : 12:30 to 14:00 pm

No.	Question	Answer
1.	What do you think about the material force and motion?	Not bad, not too difficult
2.	Do you like the matter of force and motion?	like a little
3.	Do you understand the material force and motion? Why?	Less understood, the teacher explained to read a book
4.	What difficulties you face in the material force and motion?	Examples kinds, tough force
5.	What is the definition / meaning of force? What is the definition of motion?	Push or a pull
6.	What is a definite relationship between force and motion?	Objects can be moved
7.	Is the influence of the force of the motion of a body? Among the two objects are dropped simultaneously, which one is first to ground level?	Heavier object would fall first
8.	Where did you learn the material force and motion?	Of teacher (Mr. Eko)
9.	Car speed is not fixed, sometimes faster and sometimes more slowly. According to you, what causes it?	Because there is resilience in the car
10.	Why marbles will move more slowly on the ground than on the tiled floor?	Because there pulling force
11.	Why would marbles move slower in soil than in ceramics?	Because of the marbles on the ground not moving and moving marble floor
12.	Andi interesting one table and pull the table contained Budi objects on it. What happened?	Budi table that pulled more slowly because of the burden on it

APPENDIX IX.3

INTERVIEW RESULTS FOR STUDENTS

School name : SD Islam Moh. Hatta Malang
Date : October 20, 2017
Student's name :Keisha FirstaniaAriawati
Time : 12:30 to 14:00 pm

No.	Question	Answer
1.	What do you think about the material force and motion?	Quite difficult
2.	Do you like the matter of force and motion?	Love for science pengeahuan
3.	Do you understand the material force and motion? Why?	Understand, because in the book already exists and has been described by teachers
4.	What difficulties you face in the material force and motion?	There is no
5.	What is the definition / meaning of force? What is the definition of motion?	The force is a push or a pull No motion due to the gravitational force of the earth
6.	What is a definite relationship between force and motion?	Because the force affects the motion of objects
7.	Is the influence of the force of the motion of a body? Among the two objects are dropped simultaneously, which one is first to ground level?	Heavy bodies
8.	Where did you learn the material force and motion?	Of teacher (Mr. Eko)
9.	Car speed is not fixed, sometimes faster and sometimes more slowly. According to you, what causes it?	Because no spring force
10.	What's resiliency?	The force is in a catapult
11.	Is the same car and catapults?	No
12.	Then why do you answer that?	Because I do not know

APPENDIX IX.4

INTERVIEW RESULTS FOR STUDENTS

School name : SD Islam Moh. Hatta Malang
Date : October 20, 2017
Student's name :Naj'laCallysta P.A
Time : 12:30 to 14:00 pm

No.	Question	Answer
1.	What do you think about the material force and motion?	There is nothing difficult there is no
2.	Do you like the matter of force and motion?	Goodly
3.	Do you understand the material force and motion? Why?	little understanding
4.	What difficulties you face in the material force and motion?	The difficulty does not exist
5.	What is the definition / meaning of force? What is the definition of motion?	Tug and encouragement
6.	What is a definite relationship between force and motion?	The force can cause objects to move
7.	Is the influence of the force of the motion of a body? Among the two objects are dropped simultaneously, which one is first to ground level?	For example, marbles and crumpled paper, marbles fall first because of heavy lebh
8.	Where did you learn the material force and motion?	of sister
9.	Are there forces and motion which causes the clay changes shape?	There is
10.	What is the force?	Yes squeeze it
11.	If the motion?	There too, right hand moves squeeze
12.	Is that not the force?	Yes it's force, but because there is motion also
13.	So why plasticine can change the shape?	Because by force and motion

APPENDIX IX.5

INTERVIEW RESULTS FOR STUDENTS

School name : SD Islam Moh. Hatta Malang
Date : October 20, 2017
Student's name :Randy IlahiRamadhani
Time : 12:30 to 14:00 pm

No.	Question	Answer
1.	What do you think about the material force and motion?	Obviously, it is not difficult
2.	Do you like the matter of force and motion?	Like, for everyday do
3.	Do you understand the material force and motion? Why?	There are two that do not understand
4.	What difficulties you face in the material force and motion?	Not hard
5.	What is the definition / meaning of force? What is the definition of motion?	Dna pull encouragement
6.	What is a definite relationship between force and motion?	Displacement, thrust
7.	Is the influence of the force of the motion of a body? Among the two objects are dropped simultaneously, which one is first to ground level?	For example, marbles and a pen cap, which falls once the marbles
8.	Where did you learn the material force and motion?	Mr. Eko
9.	Car speed is not fixed, sometimes faster and sometimes more slowly. According to you, what causes it?	I do not know why the car can be fast and slow
10.	When compared to riding a bicycle, why can more quickly?	Yes because pedaled faster
11.	If the bike running slow?	Not pedaling fast, slowly
12.	So if a car how?	Kan car is not pedaled, the gas may be discharged
13.	Andi interesting one table and pull the table contained Budi objects on it. What happened?	

APPENDIX X

DOCUMENTATION INSTRUMENTS

To complete the data relating to the research, it is also necessary documentation must contain the following:

1. The history of SD Islam Moh. Hatta Malang.
2. The organizational structure of Islam Moh. Hatta Malang.
3. Data Elementary School teachers and tasks of SDIslam Moh. Hatta Malang.
4. Data Elementary School students of SD Islam Moh. Hatta Malang.
5. Data infrastructure of SDIslam Moh. Hatta Malang.

APPENDIX XI

STUDENT NAME LIST

SD ISLAM MOHAMMAD HATTA

ACADEMIC YEAR 2017-2018

NO	STUDENT'S NAME	NO.INDUK	NO.NISN
1	AdhityaAthallah Maulana	234	
2	Ahmad Fayyadh	255	
3	AlthaafEllardianSyahputra	570	
4	Princess KhairanAqsyalAchmad	576	
5	Hafiz ArismaMaheswara	258	
6	AzkannisaFebrianti	281	
7	Latitude DaniswaraAyudya	261	
8	Habibi Raihan Nugraha	287	
9	Hilma AzareinNahla	238	
10	JuhaidNailir King	240	
11	Keisha FirstaniaAriawati	264	
12	Mohammad DaffaArfiansyah	245	
13	Muhammad Akmal Nararya S	477	
14	Muhammad AlfiFatih	244	
15	Muhammad Rafi Firdaus	665	
16	Keisha Nabila Ap	246	
17	Naj'laCallysta Pa	247	
18	Nur Azizah	290	
19	Son Raihan Handaru	476	
20	Randy Divine Ramadhani	270	
21	Rania Karaminafathin	271	
22	Safira Latifa		

STUDENT NAME LIST

SD ISLAM MOHAMMAD HATTA

ACADEMIC YEAR 2017-2018

FIFTH GRADE

STUDENT'S NAME	HOME ADDRESS	HP NO PARENTS
AdhityaAthallah	JlnBalean Barat 77 Malang	081294364829 (Father) 081233883382 (Mother)
Ahmad Fayyadh	JlAlpaka 26	081233930505 (Father) 081330515590 (Mother)
AlthaafEllardian		
AqsyalKhairan Princess	PerumpandanwangiUtamaKav 19 Malang	085236982204 (Father) 082132626291 (Mother)
Arisma Hafiz	JlWijayaKusuma no 30	085649721712 (Father) 081336643815 (Mother)
AzkannisaFebrianti	JlLetjenSutoyo III/66L	081905501850 (Father) 081945914000 (Mother)
DaniswaraLintang	MutiaraJingga Residence A48 JlnLoncat Indah	08123321021 (Father) 087859337354 (Mother)
Habibi Raihan Nugraha	Jl Pisangkipasperum DE Cluster no 01 Rt 05 Rw 04	08563609335 (Father) 085646494807 (Mother)
Hilma AzareinNahla	JlVinoliaGg 2 No 33 RT 2 Rw 5	085234005266 (Father) 085730576393 (Mother)
JuhaidNailir King	JlMuharto 667 no 48	085749575789 (Father) 087759990005 (Mother)
Keisha Firstania	JlnKedawung No 51 Malang	085100155261 (Father) 081232578433 (Mother)
Mohammad Daffa	Grand Masyur Residence Blok A12 jlnIkanKakap Malang	081318486689 (Father) 081330545503 (Mother)
Muhammad Akmal	Perum IKIP TegalGondoAsri 2F No 11	081555636863 (Father) 081555669000 (Mother)
Muhammad AlfiFatih	Jl KembangTuri 6 RT 04 Malang	085100727742 (Father) 0817934609 (Mother)
Muhammad Rafi	JlnKendalsari IV No 42	081286025234 (Father) 081226606331 (Mother)
Keisha Nabila Ap	SimpangLA.SuciptoPerumPandanwangi Park Kav 43-44	081233938778 (Father) 081235712886 (Mother)
Naj'laCallysta Pa	JlnSimpangSufelirDalam No 16	08125267485 (Father) 081233885005 (Mother)
Nur Azizah	JlnTutut NO 1 Arjowinangun	081335848547 (Father) 085785169519 (Mother)
Son Raihan Handaru	Jl BantaranGg V No 44A	087733833869 (Father)

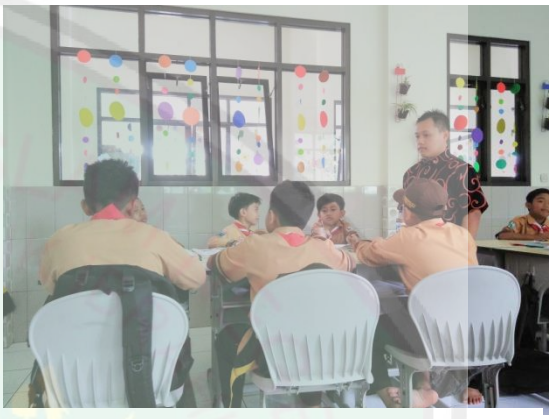
	Malang	08155505300 (Mother)
Randy Divine	PerumahanGriyasantaEksekutif/ P.358	082232983454 (Father) 089663881654 (Mother)
Rania Karaminafathin	Jln Ikanlumba-lumba no 23 Malang	085100553630 (Father) 085234220660 (Mother)
Latifa Shafira K	PerumPermataPulosari Kav7 Kec.Blimbing	08122198048 (Father) 081321600558 (Mother)

APPENDIX XII

DOKUMENTATION OF RESEARCH

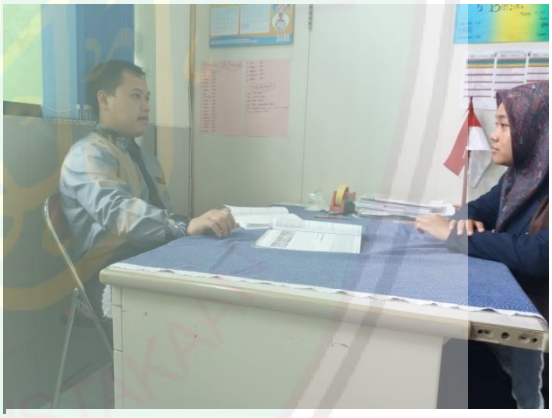
AT SD ISLAM MOH. HATTA MALANG

The researcher introduces her self to the students



The teacher supervices the students in teaching and learning

The researcher interviewes the students



The researcher interviewes the teacher

One of group discussion about the material of forse and motion

The researcher do evaluate learning after improved the misconception

The researcher and the students take a photo in front of the class

Mr. Tomi, Mr. Eko, and the researcher

The researcher take a photo in front of the new collage of SD Islam Moh. Hatta Malang

APPENDIX XIII

BIODATA

Name	: Fajriya Rizqi Rahmawati
NIM	: 14140094
Date and Place of birth	: Lamongan, June 2, 1996
Fac./Study Program	: Science Tarbiyah and Teaching/ Elementary School Teacher Education / Elementary School Teacher Education
Entrance Year	: 2014
Address	: RT. 02 RW. 04 Dsn. Pule Ds. Bakalanpule Kec. Tikung Kab. Lamongan
Contact	: 085791000308
Email/fb	: fajriya.rizqi@gmail.com /Fajriya Rizqi

Malang, May 4, 2018
Writer,

(Fajriya Rizqi Rahmawati)