

**DEVELOPING LEARNING SCIENCES VIDEO TO IMPROVE  
EFFECTIVENESS OF LEARNING TOWARD 5<sup>TH</sup> GRADE STUDENTS  
IN MIN REJOSO JOMBANG**

**THESIS**

**By:**

**Miftakhul Rizal Mubaidilla**

**NIM 09140042**



**INTERNATIONAL CLASS PROGRAM (ICP)  
ISLAMIC ELEMNTARY SCHOOL TEACHER PROGRAM  
ISLAMIC ELEMENTARY SCHOOL TEACHER EDUCATION DEPARTMENT  
TARBIYAH AND TEACHING SCIENCES FACULTY  
STATE ISLAMIC UNIVERSITY MAULANA MALIK IBRAHIM MALANG**

**July, 2013**

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IN MIN REJOSO JOMBANG**

**THESIS**

Submitted to Tarbiyah and Teaching Sciences Faculty the State Islamic University  
(UIN) Maulana Malik Ibrahim Malang in partial Fulfillment of the Requirement to  
Obtain a Bachelor  
Degree of Islamic Elementary School Teacher Education (S.Pd.I)

By:

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APPROVAL SHEET

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THESIS

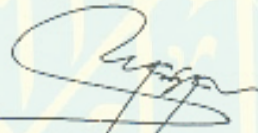
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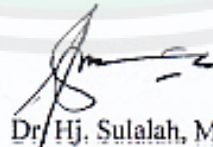
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LEGITIMATION SHEET

DEVELOPING LEARNING SCIENCES VIDEO TO IMPROVE  
EFFECTIVENESS OF LEARNING TOWARD 5<sup>TH</sup> GRADE STUDENTS  
IN MIN REJOSO JOMBANG

THESIS

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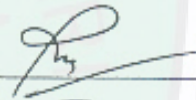
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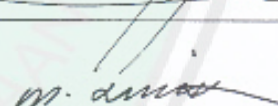
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Matter : Thesis of Miftakhul Rizal Mubaidilla

Malang, May 29, 2013

Appendixes : 4 Exemplars

The Excellency,  
Dean of Tarbiyah Faculty  
State Islamic University Maulana Malik Ibrahim Malang  
at  
Malang

Assalamu'alaikum Wr. Wb.

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

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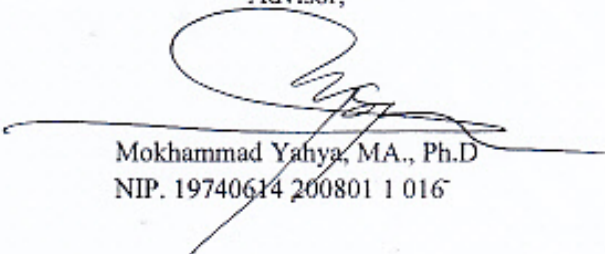
Department : PGMI

Title of Thesis : Developing learning sciences video to improve effectiveness of learning toward 5<sup>th</sup> grade students in MIN Peterongan Rejoso Jombang

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

Wa'alaikum salam Wr. Wb.

Advisor,



Mokhammad Yahya, MA., Ph.D  
NIP. 19740614 200801 1 016

## STATEMENT LETTER

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

Malang, May 29<sup>th</sup> 2013



Miftakhul Rizal Mubaidilla

## DEDICATION SHEET

*Praise be to Allah almighty, my simple imagines of kinds of the words  
in my brains has visualized to appear his voices.*

*All of them have been carved beautifully in this simple white paper.*

*This simple white paper is dedicated to  
my beloved parents Mr. Muhaimin and Mrs. Umi Baidah  
always give me all praying, give beautiful advices to me and give support to me.*

*The greatest thanks to them ☺*

*My beloved brothers I rfa'i Afian Mubaidilla and Trias Fatih Mubaidilla  
always to be my inspirations' sources to finish this simple white paper.*

*I hope can be good figure to all of my sisters and my brothers.*

*Thanks to all of you ☺*

*The beautiful words to someone who beside me  
always gives me supports and advices that make me to be calm in my soul.*

*Thanks to your beautiful soul ☺*

*May all of you always be given the mercy by God.*

*My God almighty, my God merciful, my God most merciful,  
love them, in the same as manner as they love me  
and become all of mine as my act of devotion*

*A men .....*

**MOTTO**

---

﴿ اقرأ باسم ربك الذي خلق ﴾

---

﴿ Belajarlah maka kamu akan bisa, membacalah maka kamu akan tahu  
dan praktekanlah maka kamu akan mahir di dalamnya ﴾

---

﴿ Imagination is more important than knowledge ﴾

---

## PREFACE

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Praise be to Allah SWT The All Merciful and The All Compassionate. Thanks to Allah because of all blessing and guidance, so the writer able to finish the arrangement of Research and Development “*Developing Learning Sciences Video to Improve Effectiveness of Learning Toward 5<sup>th</sup> Grade Students in MIN Rejoso Jombang*” as the final instruction activities on State Islamic University Maulana Malik Ibrahim Malang. Shalawat and salam uninterruptedly extended to Prophet of Muhammad SAW, and all the families, friends, and all Muslim.

There is no pronounceable word that can be extended except the great gratitude to the Excellency:

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17. All the students 5<sup>th</sup> Grade of MIN Rejoso Jombang who actively participate on the process of observation.
18. My close friends Choirul Anwar Badrut Tamam, Afif Syarifudin, Akhmad Syarifuddin and Yusuf Arifuddin.
19. All of my close people who help and support me to finish this thesis cannot be mentioned all.

The writer realize about the defectiveness of this Research and Development report. Therefore, the writer needs constructed critical and suggestion from all parties and reader to the next perfect report arrangement.

Malang, June 7<sup>th</sup>, 2013

Writer

## TRANSLATION GUIDELINES OF ARAB LATIN

Translation of Arab Latin in this thesis utilize the translation guidelines based on the agreement between Religion Minister and Educational and Culture Minister of Indonesia number 158, 1987 and no. 0543 b/U/1987.

### A. Hijaiyah Letters

ا = a	ز = z	ق = q
ب = b	س = s	ك = k
ت = t	ش = sy	ل = l
ث = ts	ص = sh	م = m
ج = j	ض = dl	ن = n
ح = h	ط = th	و = w
خ = kh	ظ = zh	ه = h
د = d	ع = ‘	ء = ,
ذ = dz	غ = gh	ي = y
ر = r	ف = f	

### B. Long Vocal

Vocal (a) long = â

Vocal (i) long = î

Vocal (u) long = û

### C. Diphthong Vocal

أَوْ = aw

أَيَّ = ay

أُؤ = û

**TABLE OF CONTENTS**

<b>PAGE OF TITLE .....</b>	<b>i</b>
<b>APPROVAL SHEET .....</b>	<b>ii</b>
<b>LEGITIMATION SHEET.....</b>	<b>iii</b>
<b>ADVISOR OFFICIAL NOTE .....</b>	<b>iv</b>
<b>STATEMENT LETTER .....</b>	<b>v</b>
<b>DEDICATION SHEET .....</b>	<b>vi</b>
<b>MOTTO .....</b>	<b>vii</b>
<b>PREFACE .....</b>	<b>viii</b>
<b>TRANSLATION GUIDELINES OF ARAB LATIN .....</b>	<b>xi</b>
<b>TABLE OF CONTENTS .....</b>	<b>xii</b>
<b>LISTS OF TABLES .....</b>	<b>xv</b>
<b>LISTS OF PICTURES.....</b>	<b>xvii</b>
<b>LISTS OF APENDIXES .....</b>	<b>xviii</b>
<b>ABSTRACT .....</b>	<b>xix</b>
<b>CHAPHTER I INTRODUCTION .....</b>	<b>1</b>
A. Background of the Study .....	1
B. Statement of the problems .....	5
C. Objectives of the Study .....	5
D. Significances of the Study .....	5
E. Product Specification .....	6

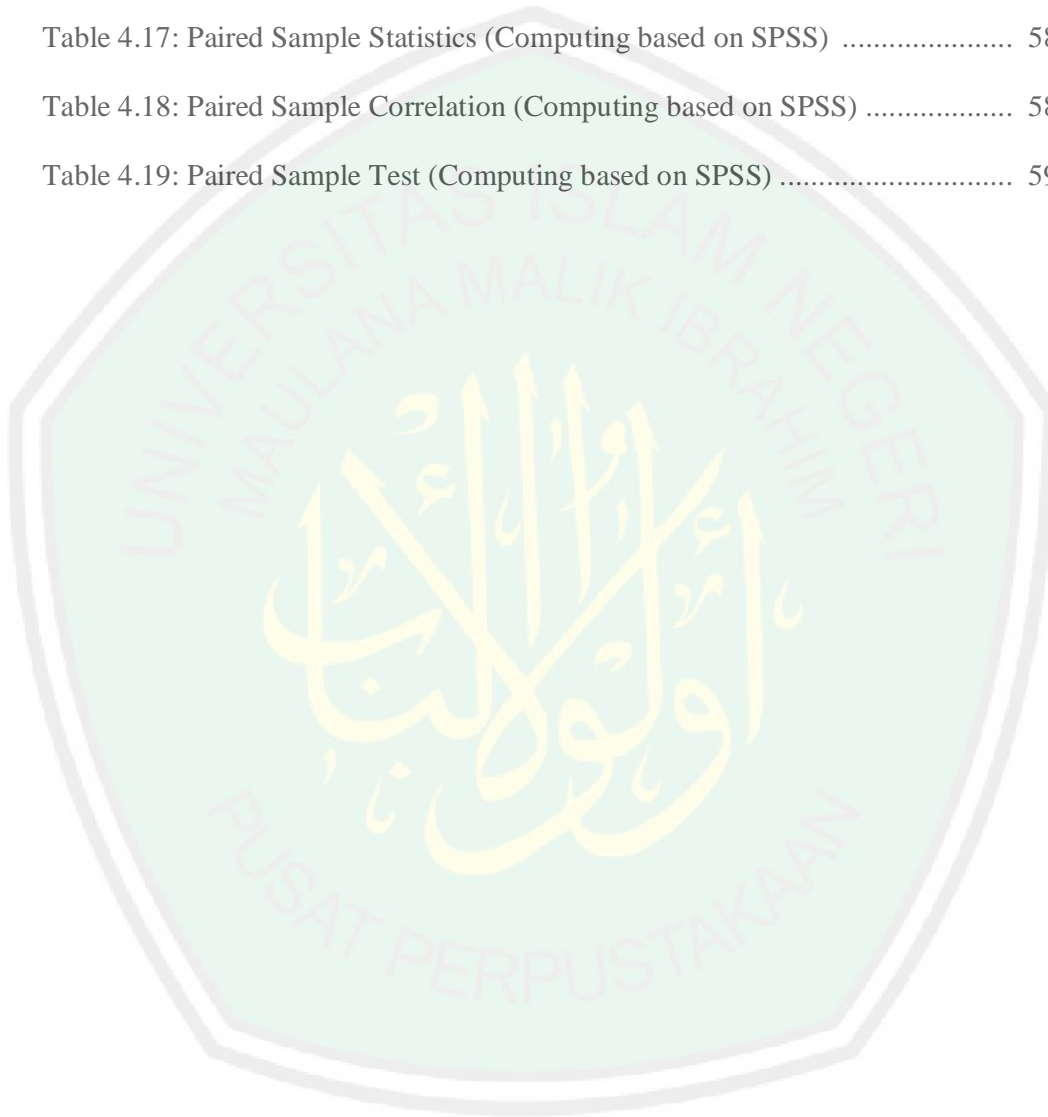
F. Assuming and Constraint of the Study .....	6
G. Key Terms .....	7
H. Systematic of the Writing .....	7
<b>CHAPTER II LITERATURES OF THE STUDY .....</b>	<b>9</b>
A. Literatures of Theorems .....	9
1. Force .....	9
2. Kinds of Force .....	9
3. Definition of Media .....	10
4. Definition of Learning Video .....	10
5. Utilization of Video Media in the Learning .....	11
6. Advantages of Learning Video .....	11
7. Characteristics of Learning Video Media .....	12
8. Criteria for Interactive Multimedia .....	14
9. Procedure of Development of Learning Video .....	16
10. Development of Manuscript of Learning Video .....	17
B. Previous of the Study .....	20
<b>CHAPTER III METHOD OF THE RESEARCH .....</b>	<b>22</b>
A. Location of the Study .....	22
B. Type of the Research .....	22
C. Model of the Development .....	22
D. Procedures of the Development .....	24
E. Product Validation .....	29

<b>CHAPTER IV RESULT OF THE STUDY .....</b>	<b>36</b>
A. Result of the Research .....	36
1. Developing Learning Sciences' Video .....	36
2. Result of the First Revising of Learning Sciences' Video .....	40
3. Result of the Second Revising of Learning Sciences' Video ....	49
4. Result of the Reasonability of Learning Sciences' Video .....	54
B. The Discussion .....	60
1. Developing Learning Sciences' Video .....	60
2. Revising Learning Sciences' Video .....	62
3. Reasonable of Learning Science' Video .....	65
<b>CHAPTER V CONCLUSION AND SUGGESTION .....</b>	<b>68</b>
A. Conclusion .....	68
B. Suggestions .....	70
1. Suggestion to Product's Utilization .....	70
2. Suggestion to Product's Dissemination .....	71
3. Suggestion to Product's Further Developing .....	71
<b>BIBLIOGRAPHY</b>	
<b>APPENDIXES</b>	

## LISTS OF TABLES

Table 2.1: Previous of the research that developed video as learning video .....	20
Table 3.1: Competences that must be mastered by students .....	25
Table 3.2: Specifics goals in learning by students .....	27
Table 3.3: Aspects of questionnaire about reasonability of learning video .....	31
Table 3.4: Aspects of questionnaire about suitable of learning video according to Syllabus of Sciences 5th grade semester 2 .....	32
Table 3.5: Scale of Likert .....	33
Table 3.6: Sample of subject will be implemented video media .....	34
Table 4.1: Competences must be received by student .....	37
Table 4.2: Validated by the expert of materials scientific .....	40
Table 4.3: Scale of Likert .....	41
Table 4.4: Suggestion from the expert of materials (scientific contents) .....	42
Table 4.5: Result of Validated of expert of learning video .....	45
Table 4.6: Scale of Likert .....	47
Table 4.7: Suggestion from the expert of learning video .....	48
Table 4.8: Validated by the expert of materials scientific .....	49
Table 4.9: Scale of Likert .....	50
Table 4.10: Suggestion from the expert of materials (scientific contents) .....	51
Table 4.11: Result of Validated of expert of learning video .....	51
Table 4.12: Scale of Likert .....	53
Table 4.13: Suggestion from the expert of learning video .....	53

Table 4.14: Lists of score 5A .....	55
Table 4.15: Lists of score 5B .....	56
Table 4.16: Lists of score 5C .....	57
Table 4.17: Paired Sample Statistics (Computing based on SPSS) .....	58
Table 4.18: Paired Sample Correlation (Computing based on SPSS) .....	58
Table 4.19: Paired Sample Test (Computing based on SPSS) .....	59



**LISTS OF PICTURES**

Picture 4.1: Chart about percentages of the student’s score average  
before and after using learning sciences video  
class 5A, 5B, and 5C ..... 54

Picture 4.2: Chart about percentages of the reasonable of learning video  
that given by expert in sciences ..... 62

Picture 4.3: Chart about percentages of the reasonable of learning video  
that given by expert of learning media ..... 64

Picture 4.4: Chart about percentages of the student’s score average  
before and after using learning sciences video class 5A ..... 65

Picture 4.5: Chart about percentages of the student’s score average  
before and after using learning sciences video class 5B ..... 66

Picture 4.6: Chart about percentages of the student’s score average  
before and after using learning sciences video class 5C ..... 66

## LISTS OF APPENDIXES

- Appendix I : Letter of the Research from Faculty
- Appendix II : Letter of the Research from School
- Appendix III : Letter of Consultation Proof
- Appendix IV : Identity of the School that have done of the Researched
- Appendix V : Result of the Validation of the Experts of Learning Media
- Appendix VI : Activities of Learning Process in the Class
- Appendix VII : Student Worksheet
- Appendix VIII : Video Storyboard
- Appendix IX : Product of Learning Sciences Video
- Appendix X : Student Profile

## ABSTRACT

Mubaidilla, Miftakhul Rizal. 2013. *Developing Learning Sciences Video to Improve Effectiveness of Learning toward 5<sup>th</sup> Grade Students in MIN Rejoso Jombang*. Thesis, Islamic Elementary School Teacher Education Department, Islamic Elementary School Teacher Education Program, Tarbiyah and Teaching Sciences Faculty, State Islamic University Maulana Malik Ibrahim Malang. Advisor: Mokhammad Yahya, MA., Ph.D.

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In the development of education in Indonesia, the learning process must be improved to get the better quality of education. Based on observation of the researcher, in the learning process there were problems, such as the teacher still used the classical learning method, the students just listened, read and wrote in their books. Those are caused by several factors, such as the learning method that is used and media to motivate student in the learning process. In natural science, the students must be active in the learning process and must be supported by learning media. Then, based on those problems, researcher has developed learning media that be used by students to more understand about material that will be learned. Implementation of learning sciences video is assumed can improve effectiveness of learning process. Therefore, the objective of this research is developing learning sciences video that can improve effectiveness of learning for 5<sup>th</sup> grade students in MIN Rejoso Jombang.

This research is using development model of Research and Development (*R&D*) by Walter Dick and Lou Carey. Then, this research has been done for 5<sup>th</sup> grade students in MIN Rejoso Jombang which using experiment design (*before-after*). Based on this research, there is product which has been developed, namely Learning Sciences Video. Learning Sciences Video which has been developed included 25 learning videos, 1 package of quiz interactive and 1 book of manual book. All of them have covered by interesting learning multimedia.

Learning Sciences Video media has effective can improve effectiveness of learning. This is can be evidenced with analysis of Paired T-Test. Based on analysis this T-Test can be resulted that  $T_{\text{test}} < T_{\text{table}} = -4,619 < -2,045$ . Therefore,  $H_0$  is rejected and  $H_a$  is accepted. Then, based on this data can be concluded that there is differential of student achievement before and after using the Learning Sciences Video media. In other hands, the Learning Sciences Video media has been suitable as a learning media. This was related with the result of validation by some experts. Based on the validation's result by the expert of scientific contents is 94%. Then, based on the validation's result by the expert of learning media is 93%. Based on scale of Likert, the results of validation of Learning Sciences Video has criterion excellent. Therefore, can be concluded that Learning Sciences Video as learning media can improve effectiveness of learning and this learning media is suitable for 5<sup>th</sup> grade students in MIN Rejoso Jombang.

**Key Word:** *Developing Media, Learning Sciences Video*

## ABSTRAK

Mubaidilla, Miftakhul Rizal. 2013. *Pengembangan Video Pembelajaran Sains untuk Meningkatkan Efektifitas Pembelajaran bagi Siswa Kelas 5 di MIN Rejoso Jombang*. Skripsi, Jurusan Pendidikan Guru Madrasah Ibtidaiyah, Program Studi Pendidikan Guru Madrasah Ibtidaiyah, Fakultas Ilmu Tarbiyah dan Keguruan, Universitas Islam Negeri Maulana Malik Ibrahim Malang. Pembimbing: Mokhammad Yahya, MA., Ph.D.

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Dalam perkembangan pendidikan di Indonesia, proses pembelajaran harus ditingkatkan untuk mendapatkan kualitas pendidikan yang lebih baik. Berdasarkan hasil pengamatan yang telah dilakukan oleh peneliti, dalam proses pembelajaran masih terdapat beberapa permasalahan, diantaranya guru masih menggunakan metode pembelajaran yang klasikal, siswa hanya mendengarkan, membaca dan menulis dalam buku tugas mereka. Hal ini disebabkan oleh beberapa faktor, seperti metode pembelajaran yang digunakan dan media pembelajaran yang digunakan untuk memotivasi siswa dalam proses pembelajaran. Pada mata pelajaran Sains, siswa dituntut untuk lebih aktif dalam proses belajar dan harus didukung oleh media pembelajaran. Kemudian, berdasarkan permasalahan yang telah dikemukakan tersebut, peneliti telah mengembangkan media pembelajaran yang dapat digunakan oleh siswa untuk lebih memahami materi yang akan dipelajari dalam proses pembelajaran. Dalam penerapan atau penggunaan Video Pembelajaran Sains diasumsikan dapat meningkatkan efektifitas dari proses pembelajaran. Oleh karena itu, tujuan dari penelitian ini adalah mengembangkan Video Pembelajaran Sains yang layak digunakan sebagai media pembelajaran dan meningkatkan efektifitas pembelajaran bagi siswa kelas 5 di MIN Rejoso Jombang.

Penelitian ini menggunakan model pengembangan *Penelitian dan Pengembangan (R&D)* oleh Walter Dick dan Lou Carey. Selanjutnya, penelitian ini telah dilakukan pada siswa kelas 5 di MIN Rejoso Jombang dengan menggunakan *desain eksperimen (before-after)*. Berdasarkan hasil penelitian ini, terdapat produk media pembelajaran yang telah dikembangkan, yaitu media pembelajaran Video Pembelajaran Sains. Video Pembelajaran Sains yang telah dikembangkan terdiri dari 25 video pembelajaran, 1 paket kuis interaktif dan 1 buku petunjuk penggunaan media. Beberapa media tersebut disajikan dalam sebuah multimedia yang menarik.

Video Pembelajaran Sains yang telah dikembangkan dapat meningkatkan efektifitas pembelajaran siswa di kelas. Hal ini dapat diketahui dengan analisis *Paired T-Test*. Berdasarkan analisis *T-Test* dapat diketahui bahwa  $t_{hitung} < t_{tabel} = -4.619 < -2.045$ . Oleh karena itu,  $H_0$  ditolak dan  $H_a$  diterima. Berdasarkan data tersebut, dapat disimpulkan bahwa terdapat perbedaan hasil belajar siswa sebelum dan sesudah menggunakan Video Pembelajaran Sains. Berdasarkan validasi dari beberapa ahli media, Video Pembelajaran Sains sudah layak sebagai media pembelajaran. Hal ini dapat diketahui dari hasil validasi dari beberapa ahli media. Berdasarkan hasil validasi oleh ahli isi mendapatkan prosentase 94%. Sementara

itu, berdasarkan hasil validasi oleh ahli media pembelajaran mendapatkan prosentase 93%. Berdasarkan skala Likert, prosentase 94% dan 93% dari hasil validasi Video Pembelajaran Sains oleh beberapa ahli media mendapat kriteria sangat baik. Oleh karena itu, dapat disimpulkan bahwa Video Pembelajaran Sains sebagai media pembelajaran sudah layak dan cocok digunakan sebagai media pembelajaran Sains serta dapat meningkatkan efektifitas pembelajaran dan media pembelajaran bagi siswa kelas 5 di MIN Rejoso Jombang.

Kata Kunci: *Pengembangan Media, Video Pembelajaran Sains*



## Chapter I

### Introduction

#### A. Background of the Study

In the development of education in Indonesia, the learning process must be improved to get the better quality of education. This can be done by the teacher by improving the quality of education. An effort that can be done by the teacher is developing the learning media, because media is a tool that can help student in the learning process. Media, according to Gagne is kind of component in the student's environment that can stimulate them to learn.<sup>1</sup> As a matter of fact, the process of teaching and learning particularly in the subject Natural Science in the elementary school seems to be passive and less attitude for the students. This is caused by several factors, such as the learning method that is used and media to motivate student in the learning process. Thus, to solve those problems, teacher must conduct a research to improve the quality of learning process in the class according to the capability of the students.

Natural Science according to Wasih Djodiro is a systematic and formulated knowledge dealing with real phenomena and the material is based mainly on observation and induction.<sup>2</sup> Natural Science is also defined as a piece of theoretical knowledge.<sup>3</sup> Natural Science is a minor-knowledge which

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<sup>1</sup> Seels, et al. *Instructional Technology: The definition of domains of the field* (Washington D.C: AECT, 1994)

<sup>2</sup> Wasih Djodiro, *Pengembangan dan Pembelajaran IPA SD*, 1994, p.3

<sup>3</sup> *Ibid.*

is built be based on observation and data classification, involving mathematic logic and data analysis to the natural phenomena.

From the definitions above, we can conclude that Natural Science is a science about natural phenomena, concept, principle and law which are valid and arranged in scientific method. Therefore, the creativity of the teacher is very important especially in developing the learning media for the Natural Science learning process in order the students can learn easily and actually can get the good result in their studies.

Teacher can develop the learning media especially for Natural Science which can help the students to see, observe and analyze the factual phenomena. The learning media is hoped to improve the effectiveness of student learning and the student's result. Media may help the student to learn effectively, encourage the students to learn more, improve their understanding, and finally improve their study result. Therefore, in teaching and learning process, teacher's role is as a facilitator and the students are as the learning subject.

Syaful Bahri Djamarah and Aswan Zain suggest that difficult material can be easily explained to student by utilizing media.<sup>4</sup> According to Syapul Bahri Djamarah and Nana Syaodih, media as a tool to help the learning process has functioned to easy the teacher and the students to get the learning aims.<sup>5</sup> The effective learning is always related with a good understanding on the materials and its concepts also it can be supported by video as a learning

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<sup>4</sup> *Ibid.*

<sup>5</sup> *Ibid.*

media. The implementation of IT in the learning process is started in Permendiknas no. 78 in 2009 on International Based School Implementation in Elementary School, Junior High School, and Senior High School which stated that:

“Learning process as understood in the first sentences means implementation of communication and information technology based learning which is active, creative, effective, joyful and contextual”.<sup>6</sup>

Science and technology have developed rapidly that caused learning process became unlimited. Wherever and whenever, student can learn according to their talents and style of study.<sup>7</sup> Thus, teacher is demanded to have the competency in communication and technology based approach. Teacher must competence in communication and information technology implementation in their subject that is taught.<sup>8</sup> The standard of learning process in primary and secondary school is that the teacher should include his activities in implementation IT in the lesson plan.<sup>9</sup>

Learning video is important to stimulate the students in learning process. Teacher functions as a guide in learning process while text book several as the source of information and learning video provide a tool that become a stimulator for the students in learning activities. Interaction between students and media, according to I Nyoman Sudana is a real symbol of learning activities. Learning activities will happen in student's their selves when they interact with media, and consequently without media, learning does

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<sup>6</sup> Permendiknas no.78, 2009

<sup>7</sup> Wina Sanjaya, *Perencanaan dan Desain Pembelajaran* (Jakarta: Kencana, 2008),p.198

<sup>8</sup> Permendiknas no.16, 2007

<sup>9</sup> Permendiknas no.41, 2007

not exist.<sup>10</sup> In my observation, learning video can improve the student understanding about real phenomena especially in Natural Science. This happen because learning video is an important element in student's environment that can stimulate the students to study. In field of education, learning video is part of the learning media. In the learning process, learning video can positive help the communication process and stimulate the student to respond quickly about information that is explained.

Learning process is communication process between learner, teacher and information itself. Teacher must create a good condition in order to the information can be absorbed properly by the learners. One of the effective ways is trough video as a leaning media.

In the school, the teacher still uses the classical learning method. There is no variation in their methods. The students just listen, read and write the explanation in their books. The natural science, the student must be active in the learning process and must be supported by real media. The students need a media that can visualize the real object, so they can understand more about that, not just listening to the teacher. Therefore, learning video may be able to solve the problem. Because, that media can explain something that the teacher can't brings it to the class.

Based on the instructions above, the researcher proposes a thesis entitled "Developing learning science video to improve effectiveness of learning toward 5<sup>th</sup> grade students in MIN Rejoso Jombang".

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<sup>10</sup> Azhar Arsyad, *Media Pengajaran* (Jakarta: PT. Raja Grafindo Persada, 1997), p.3

## **B. Statement of the Problems**

Based on the background of the study above, statement of the problems of this research and development that is related with development of sciences learning video for 5<sup>th</sup> grade about force with learning sciences video are:

1. How can the product of developing learning sciences video improve effectiveness of learning about force for 5<sup>th</sup> grade students in MIN Rejoso Jombang?
2. How is the product of developing learning sciences video about force as a learning media suitable for 5<sup>th</sup> grade students in MIN Rejoso Jombang?

## **C. Objectives of the Study**

Based on statement of the problems, the objectives of this research and development are:

1. Describe the product of developing learning sciences video can improve effectiveness of learning about force for 5<sup>th</sup> grade students in MIN Rejoso Jombang.
2. Describe the product of developing learning sciences video about force as a learning media suitable for 5<sup>th</sup> grade students in MIN Rejoso Jombang.

## **D. Significances of the study**

Significances of this research and development of this learning science video about force are:

1. Improve knowledge about research and development for the researcher.
2. Give information that learning media is important in the learning process.

3. Motivate to the teacher in order to be creative in developing learning video media as a tool that can help students in the learning process.
4. Easy to more understand in receiving materials for student and effectiveness in learning process, therefore can encourage result of student's study.

#### **E. Product Specification**

In this research, a media that has developed is learning sciences video about force for 5<sup>th</sup> grade semester 2. This video is combining between learning science video and interactive quiz in topic of "Force". Learning sciences video which has produced there are three videos have composed of learning science video in topic of gravity force, scraping force and magnet force also an interactive quiz. All of videos contains mind mapping of material, simulation or fact phenomena also the conclusion about material in the closing of the video. Then about interactive quiz is multiple-choice as a media that will be used to know the capability of students after studying with the media.

#### **F. Assuming and Constraint of the Study**

In this research, the researcher has been assuming that learning video can improve student's effective learning. Therefore, it can improve students' motivation and their study result. This research also has some limitations. Those limitations are developing learning sciences video in topic of "force" as a science learning media and this research will be done for 5<sup>th</sup> grade students in MIN Rejoso Jombang.

## G. Key Terms

There are keys terms to avoid missing understanding of perceptions in developing research, they are:

### 1. Development of video

This is research more focused toward learning media in learning sciences video for 5<sup>th</sup> grade in topic of force semester 2. This learning media is used as a tool to help learning process for 5<sup>th</sup> grade SD/MI.

### 2. Development of Learning Materials

Development of learning materials is developing of a set of material that be arranged systematically, written or unwritten in order to make a situation that student can study on there.<sup>11</sup> Development of learning media is a process systematically that practice, valid and effective to learn in subject of Sciences for 5<sup>th</sup> SD/MI topics of force.

### 3. Learning Sciences

Learning sciences is a process to learn to student about phenomena of nature in line a set of process and scientific to get aims that has been determined.

## H. Systematic of the Writing

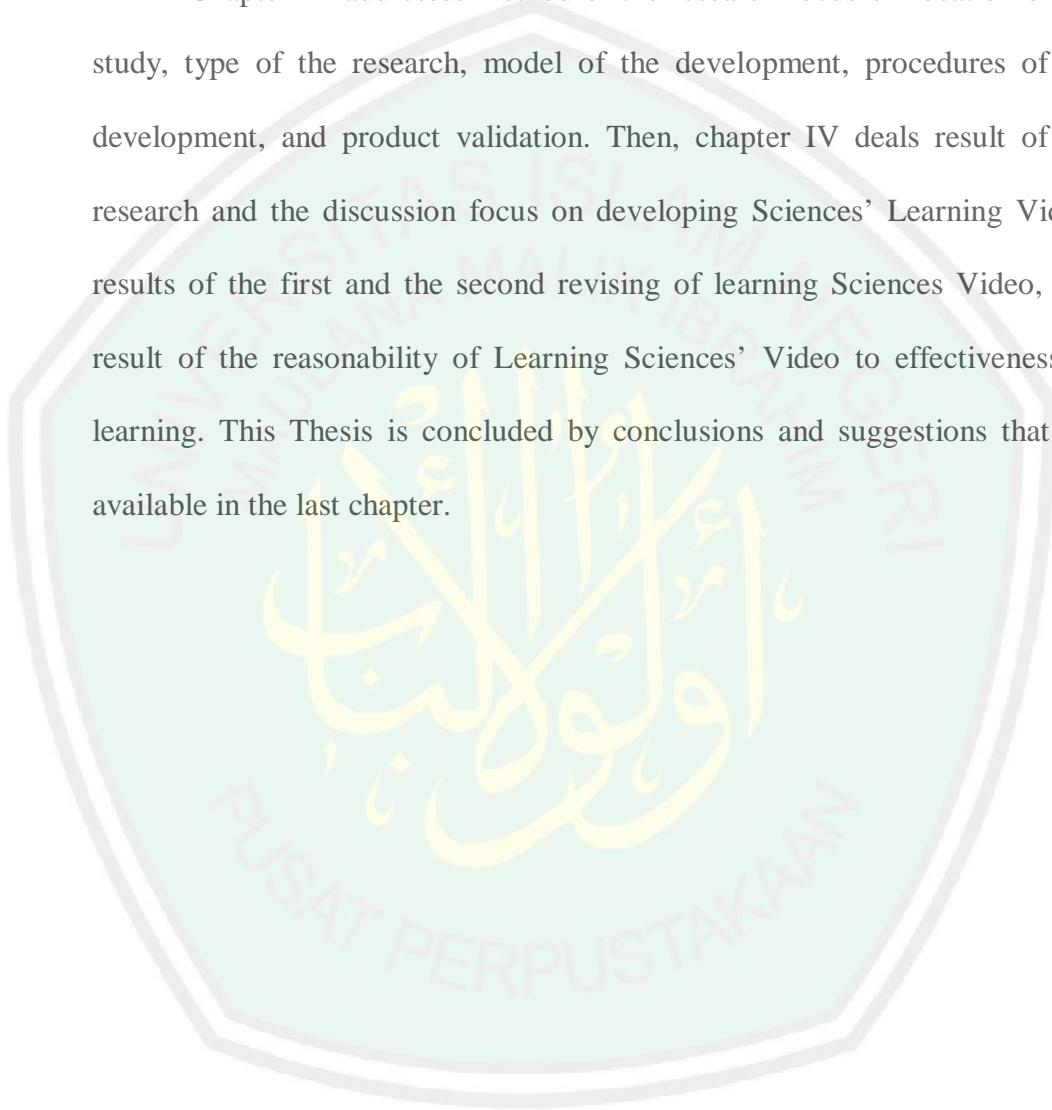
Systematics of the writting in this thesis will be planning into chapter I until chapter V. Chapter I addesses introduction focus on background of the study, statement of the problems, objectives of the study, significances of the study, product specification, assuming and constraint of the study, key terms,

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<sup>11</sup> Diknas, "Sosialisasi KTSP", 2008

and systematic of the writing, while chapter II deals literature of the study focus on literature of the theorem and previous of the study.

Chapter III addresses method of the research focus on location of the study, type of the research, model of the development, procedures of the development, and product validation. Then, chapter IV deals result of the research and the discussion focus on developing Sciences' Learning Video, results of the first and the second revising of learning Sciences Video, and result of the reasonability of Learning Sciences' Video to effectiveness of learning. This Thesis is concluded by conclusions and suggestions that are available in the last chapter.



## Chapter II

### Literature of the Study

#### A. Literatures of the Theorems

##### 1. Force

Motion makes the world go around. Motion makes the moon go around too. In fact, motion makes lots of things go. Motion is important to human lives and impacts so many things that human do. Motion is the changing of position or location. But motion requires a force to cause that change. Force is word for pushing or pulling. Force makes things move or, more accurately, makes things change their motion.

##### 2. Kinds of Force

Based on sources of force, there are three forces. They are gravity force, frictional force of scrapping, and magnetic forces. Gravity produces a force that pulls objects towards each other, like a person towards the ground. It is the force that keeps the Earth revolving around the sun and it's what pulls human toward the ground when human trip. While, magnetism produces a force that can either pull opposite ends of two magnets together or push the matching ends apart. A magnet also attracts objects made of metal.<sup>12</sup> Then, frictional force is the force caused by two surfaces that come into contact with each other. Friction can be helpful as in the friction that allows a person to walk across the ground without

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<sup>12</sup> Anggota IKAPI, *RPAL (Rangkuman Ilmu Pengetahuan Alam Lengkap) Untuk Kelas 4,5 dan 6 SD* (Semarang: CV. Aneka Ilmu, 1993), p.92

sliding or it can be destructive such as the friction of moving parts in a motor that rub together over long periods of time. Applied force refers to a force that is applied to an object such as when a person moves a piece of furniture across the room or pushes a button on the remote control. Although there are some force, the basically force is activities that pulling and pushing on object.<sup>13</sup>

### 3. Definition of Media

According to Seels, media is all forms and channels that people use to distribute the message or information.<sup>14</sup> According to Gagne, media is kind of component in the student's environment that can stimulate them to learn. Then, according to Locatis and Atkinson, media is a tool to transmit the messages.

Therefore, learning media is a tool of communication that used as intermediates in delivering the messages to enhance the effectiveness and the efficient of learning.<sup>15</sup>

### 4. Definition of Learning Video

According to Cheppy Riyana, learning video is a medium that presents audio and visual that contains messages of learning. Both of them contain with concepts, principles, procedures, theory application knowledge to help understanding of the learning material. Video is learning audio-visual media that can be used to convey messages or

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<sup>13</sup> *Ibid.*, p.95

<sup>14</sup> Seels, *loc.cit.*

<sup>15</sup>Christina Ismiati (dosen jurusan Kurikulum dan Teknologi Pendidikan FIP UNY), "Majalah Ilmiah Pembelajaran Edisi Khusus 2012", 2012, p.113

lesson's materials. Video is called learning audio-visual media because it includes elements of heard or audio and elements of visual can be served simultaneously.<sup>16</sup> Learning video can be called audio-visual aids (AVA) or media which can be seen and be heard.<sup>17</sup>

#### 5. Utilization of Video Media in the Learning

Research on learning through visual stimulus, video can give good effects in learning's results such as remember, recognize, recall and connect facts and concepts. According to Baug, 90% of learning is obtained by the senses of visual, and about 5% is obtained by the senses of hearing and about 5% is obtained by the others. Meanwhile, according to Dale estimated that acquisition of the learning by the sense of visual about 75%, while the sense of hearing about 13% and 12% by other senses.<sup>18</sup>

#### 6. Advantages of Learning Video

Advantages of using video media are very flexible in size of video's display and can be adjusted as needed. The video is a learning media that non-print material and rich in information.<sup>19</sup> According to Cheppy Riyana, advantages of learning video, video media can be:<sup>20</sup>

- a. Zooming small things like bacteria, electron and microbe
- b. Minimizing the big things that are impossible if will be brought in the school like house, mountain and big animal.

<sup>16</sup> Cheppy Riyana, *Pedoman Pengembangan Media Video* (Jakarta:P3AI UPI, 2007), p.6

<sup>17</sup> Azhar Arsyad, *op.cit.*, p.36

<sup>18</sup> Christina Ismiati, *op.cit.*, p.115-116

<sup>19</sup> Daryanto. *Media Pembelajaran* (Yogyakarta: Gava Media, 2010), p.90

<sup>20</sup> Cheppy Riyana, *loc.cit.*

- c. Serving things or phenomena that are complex, detailed or fast and slow like the human body system, solar system or growing of plants.
  - d. Serving things or phenomena that are long distance like the moon, star or snow.
  - e. Serving the things or phenomena that are dangerous like a wild animal or volcano of mountain.
  - f. Improving interesting things for the student.
  - g. Video with better than listening are only able to survive in a time of 25-30 minutes.
  - h. Video capable displays image objects and information that most new, warm and actual (immediacy) or contemporary.
7. Characteristics of Learning Video Media

According to Cheppy Riyana to produce learning videos that can improve effectiveness of the student's motivation and development of the learning video should pay attention to characteristics and criteria. Characteristics of video learning, namely:<sup>21</sup>

- a. Clarity of Message

With video media students can understand the message of learning in a more meaningful and information can be received in full by their selves, the information will be stored in the long term memory and retention.

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<sup>21</sup> *Ibid.*, p.8-11

b. Stand Alone

Videos that are developed do not depend on others media or should not be used in conjunction with other media.

c. User Friendly

Video media is using simple language, easy in use and understandable.

d. Representation Contents

The material must be a truly representative, for example the material of simulation or demonstration. Basically, materials of social and science can be made into a video media.

e. Visual's Quality of Video Media

Video as multimedia has high accuracy in its displaying, such as the materials that have been contained with text, animation, and sound.

f. Use the High Quality of Resolution

Graphic of video media is created in high digital technology with high resolution and support for several computers' systems.

g. Can be used on Group or Individual

Learning video can be used by the students in individual, can be used in school or their home. Video can be used in group. Then, can be used in more 50 users but must be guided by the teacher or enough to listen of narrator's voice that has been available in the program.

Whereas, characteristics of learning video media according to Azhar Arsyad are as follows:<sup>22</sup>

- 1) Can be stored and be used repeatedly times.
  - 2) Must have a special technique to operate in order to get the best of presentation with video.
  - 3) Operation is relatively easy
  - 4) Can present the past events.
8. Criteria for Interactive Multimedia

According to Cheppy Riyana, development and manufacture of video as learning media should be considering the criteria as follows:<sup>23</sup>

a. Type of Material

Video media suitable for the subject matter that is describing a specific process, a flow demonstration, a concept or describe something. Example: how to make a magnet or metabolic processes.

b. Duration of Time

Video media has a shorter duration about 20-40 minutes. While, film media is generally about 2 until 3.5 hours. In the ability of human can memorize and concentration about 15-20 minutes.

c. Format of Video's Serving

Learning video as multimedia, there are types of video, such as narrative video, interviews video, presents video or combined of them.

<sup>22</sup> Azhar Arsyad, *op.cit.*, p.37-52

<sup>23</sup> Cheppy Riyana, *op.cit.*, p.11-14

#### d. Provisions of the Technical in Learning Video

According Cheppy Riyana, video media can't be separated from the technical aspects such as camera, shooting techniques, lighting techniques, editing and sound. In order to get high quality of learning video, should be implementing technique of developing video<sup>24</sup>

For example:

- 1) Use *zooming* and *extreme close-ups* technique to show the object in more detail.
- 2) Use *out of focus* or *in focus* technique to make equal or blur the object which other.
- 3) If too much object that disrupt other objects, all of them can be selected picture and blurred the object.
- 4) Use of text in proportional size. If text is made in animation, must arrange it into animation text with normal speed.
- 5) Use music and sound effects

There are provisions in using music and sound effects, such as:

- a) Music for accompaniments' sounds to be better uses intensity slow volume.
- b) Music that be used as background, to be better use musical instruments.

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<sup>24</sup> *Ibid.*, p.13-14

- c) Avoid popular music or already familiar with students. This can disturb concentration of the student.
- d) Use the sound effects in the visual presentation. It will be able to attract the attention of the students to focus in learning that have and will be given.

#### 9. Procedure of Development of Learning Video

- a. Outline of Learning Video Contains Preface, Opening, Introduction, Video Content and Closing.

In the preface of learning video is presented the introduction about material that will be learned. Then, in video's contents is explaining and describing complete materials, for examples about simulations or demonstrations. While, in the video's closing is displaying about conclusion or summary of materials that have been learned.

- b. Involvement Team

Development of learning videos is an activity that involves some experts (Course Team Approach) that synergy to produce video media. In general, in developing learning video requires the ability or skills in the fields as follows:<sup>25</sup>

- 1) Expert of contents is person who can identify the contents based on competence about what subject that will be implemented.

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<sup>25</sup> *Ibid.*, p.17-20

- 2) Expert of learning media (Media Specialist) is people who know about media that has reasonability as learning media.
- 3) Expert of instructional method is people who have ability to design and establish the appropriate of method based on learning materials will be developed.
- 4) Director is person whose has responsible to concept and technical on the course of production activities.
- 5) Computer Graphics Specialist is people whose has ability to edit video and compile it into a dish that intact for learning materials that have developed.
- 6) Sound Director is person whose has responsible to produce good quality of the sound of music. In learning video, sound can be fulfilling quality of the learning video.

#### 10. Development of Manuscript Learning Video

According to Daryanto, there are general steps to produce scripts of learning videos, they are:<sup>26</sup>

##### a. Defining the Idea

In the defining a good idea to develop learning video, developer can compare the media that have produce to appear new idea from them. After comparing them, developer can determine scene of learning media that will be developed. Idea in developing learning media is important to do the further developing.

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<sup>26</sup> Daryanto, *op.cit.*, p.104-106

b. Determine the Purpose

Determining the purposes in developing media is determining the function of media itself. Media that will be developed has to have the high reasonability as learning media, because, media will be used in the learning process to help student to learn. To determine the purpose of the media that will be developed, developer must know about the competences of the subject. Therefore, in the developing learning media, developer can design the media with line on competences that have been determined.

c. Conducting Survey

Survey is conducted in order to get information and materials that can support in developing learning media.

d. Create an Outline of the Content

Data that have been collected through the survey should be made the outline of the data in order to get the goals of developing media. Outline of the contents can help the developer to design and determine about scene of learning media that will be produced and arranged in program of multimedia.

e. Create a synopsis. Synopsis is an overview of the story that describes the contents of the program briefly and it is still in general.

f. Create a treatment. Treatment is developing story more than synopsis. Treatment is arranged to determine a scene of movie. The scenes will be describing about chronological of the event. Scene can help people

who read treatment, they can imagine the global visualization of learning media that will be produced.

g. Create a storyboard

Storyboard is a set of scenes of movie that has been written by developer of learning video. Every sheet of storyboard contain with scene and setting. Storyboard can help the developer to develop easily. Because all of components have been arranged and designed in the storyboard that have been made by developer before developing the learning media.

h. Write a script

Manuscript basically is same as with storyboard. Script is sequence that has been made more detail. In writing a script, there are steps that developers of learning media must knows, they are:

- 1) Use style of conversational language
- 2) Sentences should be clear, concise and informative
- 3) Use vocabulary appropriate to the audience's characteristics

While, according to Warsihna, in writing a script, there are steps that developers of learning media must knows, they are

- 1) See indicator or material will be presented then, formatting a dish that accordance with characteristics of the material such as game, quizzes, or the others.
- 2) Learning video to be better describing about human environment that can entertain the audiences.

- 3) Learning video to better use motion and if as possible as in three dimension.
- 4) Writing a caption should be based on rules of the language and brief, no more than five lines. Then, serving the material in attractive, clearly, and easy to remember by spectators
- 5) Repetition is not as same as a dish the material and using music's effect to visualize the moment in the movie.

## B. Previous of the Study

Previous of the study is used to compare between the learning media that has researcher developed with the learning media that has developed before researcher. Related with previous of the researches, researcher has identified thesis about developing learning video. Researcher has found the previous research which related with learning video, they are:

Table 2.1: *Previous of the research that developed video as learning video*

Researcher	Title of the Research	Similarity	Differentiation
Kadek Theza Yustisia <sup>27</sup>	Pengembangan Media Video Pembelajaran IPA Terpadu Pada Siswa Kelas 4 SD NO 3 Klungkung	Developing Learning Video	This research has produced Reviews the Integrated-Natural Sciences learning media
Windi Tri Sasmia, Widodo Hs. and Dwi Sulistyorini <sup>28</sup>	Pengembangan Media Video Pembelajaran Berbicara Bahasa Jawa Kelas 2 di	Developing learning video	This research has produced models of video learning media the Java language for 2 <sup>nd</sup> grade students in elementary school and

<sup>27</sup> Kadek Theza Yustisia, "Pengembangan Media Video Pembelajaran IPA Terpadu Pada Siswa Kelas 4 SD NO 3 Klungkung", *Skripsi*, Jurusan Tehnologi Pendidikan, 2007

<sup>28</sup> Windi Tri Sasmia, dkk, "Pengembangan Media Video Pembelajaran Berbicara Bahasa Jawa Kelas 2 di SDN Kesatrian 1 Malang", *Skripsi*, Universitas Negeri Malang, 2007

	SDN Kesatrian 1 Malang		models of video media for the Java language speaking skills for second grade students of elementary school in accordance with the terms of the look, content and language
Fiskha Ayuningrum <sup>29</sup>	Pengembangan Media Video Pembelajaran Untuk Siswa Kelas X Pada Kompetensi Mengolah Soup Kontinental di SMKN 2 Godean	Developing learning video	Developing media learning video in competence managing of continental soup with learning video media that reasonable to be implemented as learning media for X grade students in SMKN 2 Godean
Novian Tri Asmoro <sup>30</sup>	Pengembangan Media Video Interaktif Tari Bedana Untuk Pembelajaran Tari Nusantara di SMP	Developing learning video	Developing product of interactive video media Bedana Dance as learning video Nusantara Dance tari Bedana for VIII grade students in SMPN 2 Pengasih Kulon Progo to solve the problem about Nusantara Dance learning

Based on previous of the research, all of them developed learning video that can be a learning media. Therefore, differentiation between in this research and previous of the research is researcher developing learning sciences video that combined with interactive quiz to improve effectiveness of learning in topic “force” toward 5<sup>th</sup> in MIN Rejoso Jombang.

<sup>29</sup>Fiskha Ayuningrum, “Pengembangan Media Video Pembelajaran Untuk Siswa Kelas X Pada Kompetensi Mengolah Soup Kontinental di SMKN 2 Godean”, *Skripsi*, Jurusan Pendidikan Teknik Boga Program Studi Pendidikan Teknik Boga Busana Fakultas Teknik Universitas Negeri Yogyakarta, 2012

<sup>30</sup>Novian Tri Asmoro, “Pengembangan Media Video Interaktif Tari Bedana Untuk Pembelajaran Tari Nusantara di SMP”, *Skripsi*, Jurusan Pendidikan Seni Tari Fakultas Bahasa dan Seni Universitas Negeri Yogyakarta, 2012

## Chapter III

### Method of the Research

#### A. Location of the Study

Location of the study is a place where this research has conducted. This research has been done in MIN Rejoso Jombang St. Rejoso Peterongan Jombang of Ponpes. Darul Ulum Peterongan Jombang on May-June 2013 and has been chosen for 5<sup>th</sup> grade of MIN Rejoso Jombang.

#### B. Type of the Research

The method that used is Research and Development Method. According to Borg and Gall, educational research and development is a process used to develop and validate educational product.<sup>31</sup> Then, according to Sugiyono, research and development method is a research method that is used to specific product and test in the effectiveness in its using”.<sup>32</sup> This research has been done to produce an education media program with learning sciences video about force for 5<sup>th</sup> grade as learning media that support in the learning process in order to improve effectiveness of learning and quality of education.

#### C. Model of the Development

This research has used the procedural model. Procedural Model is a descriptive model which allows the steps that will be done to produce the

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<sup>31</sup> Borg, et al. *Educational Research: An Introduction, Fifth Edition* (New York: Longman, 1989), p.624

<sup>32</sup> Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif dan R&D* (Bandung: Alfabeta, 2011), p.294

product. There are the steps of developing model. The procedures of development that will be done they are<sup>33</sup>:

1. Identifying the Instructional Goal

Assessment to determine aims of product or product that will be developed.

2. Conducting an Instructional Analysis

Instruct analysis that focus on skill, process, procedure, and learning tasks. That has been done to achieve the aim of learning.

3. Identifying Entry Behaviours and Characteristics

Analysis or identify the behavior of student and context that focus on capability, attitude, and the first characteristic of student in the learning background. The second and third steps can be done by consecutively or simultaneously.

4. Writing Performance Objective

Describe about the skill of the students after implementing a specific learning program.

5. Developing Criterion-Referenced Test

This instrument is in line with the goals of the lesson after arranging.

6. Developing Instructional Strategies

Choosing, controlling and developing the learning procedures general components that will be used by the student to learn the materials it will

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<sup>33</sup> Walter Dick and Lou Carey, *The Systematic Design of Instruction* (USA, 1978.), p.8-11

make students learn easily depend on their characteristics and the goals of learning that have been arranged.

#### 7. Developing and Selecting Instructional Media

Developing and choosing learning media that will be developed and implemented. In this research, the researcher will produce a video development for Natural Science.

#### 8. Designing and Conducting Formative Evaluation

After producing learning media, the researcher will conduct a formative evaluation to get the data to improve the quality of learning media that is developed and produced.

#### 9. Revising the Instruction

Data that are collected will be interpreted to solve the difficulties of learning to get the aims of learning and improve the effectiveness of learning.

### **D. Procedures of the Development**

These procedures will help the researcher to develop the learning media. In developing learning media, the researcher has used Walter Dick and Lou Carey's model. Based on model of the development of Walter Dick and Lou Carey as mentioned above, therefore procedures of the development in this research has allowed its:

#### 1. Identifying the Instructional Goal

In this step has been done to identify about the general goals of sciences that mean determined capabilities of students after studying. The

general goals have identified based on analyzed of curriculum and suggested from experts of learning media. Curriculum of sciences based on Permendiknas no. 22 on 2006 about standard of competence and basic competence. After analyzing curriculum has achieved competences that must be mastered by students, those competences are:

Table 3.1: *Competences that must be mastered by students*  
Standard of competence: Energy and its transforming  
(Energy dan perubahannya)

Basic competence	Indicators
Describing relation between force, motion and energy (force of gravity, scrape and magnet) ( <i>Menjelaskan hubungan antara gaya, gerak dan energy (gaya gravitasi, gaya gesek dan gaya magnet)</i> )	Classifying about magnetic and non-magnetic ( <i>Mengelompokkan benda-benda yang bersifat magnet dan benda tidak bersifat magnet</i> )
	Explaining about the power of magnetic force to move the thin objects ( <i>Menjelaskan kekuatan gaya magnet dalam menembus beberapa benda tipis</i> )
	Giving examples about benefit of magnet ( <i>Memberikan contoh kegunaan magnet dalam kehidupan sehari-hari</i> )
	How to make magnet (Scraping) ( <i>Menjelaskan cara pembuatan magnet dengan cara gosokan</i> )
	How to make magnet (Induction) ( <i>Menjelaskan cara pembuatan magnet dengan cara induksi</i> )
	How to make magnet (Electromagnet) ( <i>Menjelaskan cara pembuatan magnet dengan cara mengalirkan arus listrik (Elektromagnet)</i> )
	Concluding that gravity force causes object will be moved down ( <i>Menyimpulkan bahwa gaya gravitasi menyebabkan benda jatuh ke bawah</i> )
	Comparing moving of object in different area (hard and soft area) ( <i>Menjelaskan perbandingan pergerakan benda pada tempat yang halus dan kasar</i> )

	Explaining how strong and low the scraping force ( <i>Menjelaskan cara memperbesar dan memperkecil gaya gesekan</i> )
	Explaining the advantages of scraping force ( <i>Menjelaskan manfaat gaya gesek dalam kehidupan sehari-hari</i> )

Therefore, need a media that gives to student more motivate, interest to study also complete in materials about “force” toward 5<sup>th</sup> grade is developing science video.

## 2. Conducting an Instructional Analysis

This step we doing instruction analysis that focus on skill, process, procedure, and instruction tasks to achieve the aim of instruction.

## 3. Identifying Entry Behaviours and Characteristics

In identify about material that will be implemented in learning media need analyse skills and knowledge's that be owned by students before learning and using learning media. When analysing contents of learning, students must understand about concepts of sciences and applying them in their daily activities.

According to Piaget about child those 11-12 years old (class V) where child uses their concrete operational to form operational more complexly.<sup>34</sup> That means child still need step of concrete to step of abstract. Based on those characteristics, in elementary school must generate student that can solve and minimalism the problem on their

<sup>34</sup> Ratna Dahar, *Teori-Teori Belajar* (Bandung: Erlangga, 1998), p.155

selves by applying concept of sciences. Therefore, materials of force can be developed in concept understanding which has advantages in their activities.

#### 4. Writing Performance Objective

In this step describes about the skill of the students after implementing a specific learning program. Capability of students must describe specifically in order to can be valued. This step used to basic developing in strategy of learning and arranging about test of learning. Based on result of the learning identifying about goals of learning, characteristics and capability of 5<sup>th</sup> grade, specifics goals in learning are:

Table 3.2: *Specifics goals in learning by students*

No.	Specifics goals of learning
1.	Classifying magnetic and non-magnetic
2.	The power of magnet's force to move objects
3.	Giving examples about benefit of magnet
4.	How to make magnet (Scraping)
5.	How to make magnet (Induction)
6.	How to make magnet (Electromagnet)
7.	Concluding that gravity force causes everything will be moving down
8.	Comparing moving of the things on different area (hard and soft area)
9.	Explaining how strong and low the scraping force
10.	Explaining advantages of scraping force

#### 5. Developing Criterion-Referenced Test

Instrument of test can be arranged based on goals of learning. Before students learning about force, they have given test to know about capability of student before using learning media that has produced by

researcher. This test included 10 questions where 1 question= 10 points, thus, total score is 100.

#### 6. Developing Instructional Strategies

This step is choosing, arranging and developing general components and procedures that will be used to learn for students in order to study easily to get goals of study. Components of learning strategy are strategy that conduct and student preparation while they are allowing the learning process, strategy that be functioned to develop contents and media of learning must get the goals of science learning about force, student must involve in learning process, and give test to know about student's capabilities.

#### 7. Developing and Selecting Instructional Media

The prime of step is developing and selecting instructional media. Product of this developing are learning sciences video about force for 5<sup>th</sup> grades by applying inquiry and experimental methods.

#### 8. Designing and Conducting Formative Evaluation

After materials of learning have produced, next step is done formative evaluating. This evaluation is used to receive data to encourage the learning science video more effectively. Formative evaluating is done toward two groups they are evaluating from experts of learning media and evaluating of using learning media by students. Evaluating from experts of learning media are materials and suitable as learning media.

## 9. Revising the Instruction

Data which have received from formative evaluating are collected and interpreted to solve the problem in students to get goals of learning and to revise learning in order to more effectively. Designing and revising of developing will be explained in result of the development.

### E. Product Validation

#### 1. Design Validation

Design validation that has used in this research is validation from expert of the learning media and expert of the science's material and students as user this product. Design validation by expert of material of sciences that validate the materials in learning sciences video and expert of learning media who validate that learning sciences video is suitable as leaning media. This be used describe to process to data then be analysed and encourage quality of the product.

##### a. Subject validation

Subject validation or valutors of the Learning Sciences Video are expert of material of sciences and expert of learning media.

There are criteria of valutors of the learning media:

##### 1) Criteria of expert of learning media

- a) Expert has been an author of learning media and expert in field of education
- b) Expert has experienced in designing and arranging the learning media

## 2) Criteria of expert of material in learning media

- a) Expert is a person who has competence in natural sciences for Elementary School
- b) Expert has known about curriculum of sciences
- c) Expert has produced learning sciences media

### b. Types of data

In this research, data that be received are data of effectiveness and quality of media. The first data is quantitative from percent of suitable learning sciences video as learning media or validating of media, and the second data is qualitative of suggestion from experts of learning media.

### c. Instruments of Data Collection

In this research, data that be used are questioners and documents. Questionnaires are divided into 2 kinds; they are questionnaire scale Likert that has 5 categories: 1=bad, 2=enough, 3=good, 4=very good and 5=excellent and questionnaire suggestion from experts of learning media.

#### 1) Instrument about product quality as learning media

This instrument is about the expedience of learning video as learning media. This instrument is questionnaire that will be data from the expert of learning media

Table 3.3: *Aspects of questionnaire about reasonable of learning video*<sup>35</sup>

No.	Aspect	Indicator	Sub-Indicators		
1.	Principle	Aim	Media is easy and clear in explaining the materials		
		Characteristic	Media is clear in giving message		
			Media is easy to be used		
			Media is suitable for children's		
		Criteria	Media can be used in group or individual		
			Media is served in good duration		
			Media is served in good format		
		2.	Video Serving	Picture	Media is displaying high quality of picture
					Media is served in high quality of animation
Media is displaying good picture combination					
Sound	Media is served in clear sound				
	Media is served in good effect of sound				
	Media is served in good sound combining				
3.	Video Scenario	Font	Media displayed good font		
		Scenario	Media is arranged in good idea of scenario		
			Media is designed for interest the audience		

<sup>35</sup> Cheppy Riyana, *loc.cit.*

## 2) Instrument about product quality of materials

This instrument is about suitable of learning video according to syllabus of Sciences 5<sup>th</sup> grade semester 2. This instrument is questionnaire that will be data from the expert of sciences contents.

Table 3.4: *Aspects of questionnaire about suitable of learning video according to Syllabus of Sciences 5<sup>th</sup> grade semester 2*<sup>36</sup>

No.	Aspect	Indicator	Sub-Indicators
1.	Suitable Video According to Syllabus Learning Media	Describing relation between force, motion and energy (force of gravity, scrape and magnet)	Classifying about magnetic and non-magnetic
			The power of magnetic force to move the thin objects
			Giving examples about benefit of magnet
			How to make magnet (Scraping)
			How to make magnet (Induction)
			How to make magnet (Electromagnet)
			Concluding that gravity force causes object will be moved down
			Comparing moving of object in different area (hard and soft area)
			Explaining how strong and low the scraping force
			Explaining the advantages of scraping force

<sup>36</sup> Syllabus of Sciences learning about "Force" 5<sup>th</sup> grade of semester 2 in MIN Rejoso Jombang

2.	Video Serving	Scenario	Media is clear in arranging of materials
			Media is clear in completing of materials
			Media is clear in systematic of materials

### 3) Data Analysis Technique

To analyze the data, this research used *scale of Likert* from questioners processing.<sup>37</sup>

$$P = \frac{\sum x}{\sum x_i} \times 100$$

Notes:

P = Reasonability

$\sum x$  = Total score of response (answer)

$\sum x_i$  = Total of the highest response score

The quality of learning media according to *Scale of Likert*.<sup>38</sup>

Table 3.5: *Scale of Likert*

Criteria	Score (%)
Excellent (no revision)	90.00%-100%
Good (no need to be revised)	75.00%-89.00%
Enough (better to be revised)	65.00%-74.00%
Bad (need to be revised)	55.00%-64.00%
Very bad (revision total)	0.00%-54.00%

<sup>37</sup> Suharsimi Arikunto, *Dasar-Dasar Evaluasi Pendidikan (Edisi Revisi)* (Jakarta: Bumi Aksara, 1999), p.112

<sup>38</sup> Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif, dan R&D* (Bandung: CV. ALFABETA, 2008), p.135

## 2. Product Tryout

### a. Design of Product Tryout

In field of the education, design of learning media can try out directly after validating by expert of media. Tryout of product in the first step has been done with simulation of using the learning media. After simulating, then could be tried out to limited group. Trying out has been done to get information that the new learning media more effective than the others.<sup>39</sup> Tried out this learning media has been done by comparing between before and after using this media (*before-after*).<sup>40</sup>

There is a design experiment (*before-after*)  $O_1$  value before treating and  $O_2$  after treating:

$$\boxed{O_1} \quad X \quad \boxed{O_2}$$

Note:

X = Learning process using learning media

$O_1$  = First test/pretest

$O_2$  = Final test/post test

### b. Trial Object

In product trial, the subject is class VA of 5<sup>th</sup> grade of MIN Rejoso Jombang. This tried to compare result of the student's achievement before and after using Learning Sciences Video.

Table 3.6: *Sample of subject will be implemented video media (Sample of subject that painted black color)*

No.	Class	Population
1.	V A	30 Students
2.	V B	32 Students
3.	V C	31 Students
Total	VA, VB and VC	93 Students

<sup>39</sup> *Ibid.*, p.414

<sup>40</sup> *Ibid.*, p.303

c. Data Analyze Technique

This research has used experiment of one group pretest and posttest while giving action. Then, a criterion of test was T-Test correlated to know influence an action toward object of the research.

There is formula that has used with stages of inaccurate 5% is:<sup>41</sup>

$$\frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2} - 2.r \left( \frac{S_1}{\sqrt{n_1}} \right) \left( \frac{S_2}{\sqrt{n_2}} \right)}}$$

Note:

t = t-Test correlated

$\bar{X}_1$  = Averages of sample 1 (old work system)

$\bar{X}_2$  = Averages of sample 2 (new work system)

$S_1$  = Deviation sample 1 (old work system)

$S_2$  = Deviation sample 2 (new work system)

$S_1^2$  = Variants sample 1

$S_2^2$  = Variants sample 2

n = Total of samples

r = Correlation between data of two groups

Therefore, to determine about hypothesis, there are two categories:

- 1) Hypothesis has rejected (Ho) if effectively of new learning media that has developed is bad or same than old learning media
- 2) Hypothesis has accepted (Ha) if effectively of new learning media that has developed is good than old learning media

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<sup>41</sup> *Ibid.*, p.422

## Chapter IV

### Results of the Research and the Discussion

#### A. Results of the Research

##### 1. Developing Learning Sciences' Video

Before developing Learning Sciences' Video, observation has been done for the preliminary of study. Observation has been done to identify the competences of materials that is good be learned by student. This was done in the half of week on May before the real research takes place. In the process of observation the class was chosen. That it will be used in the research process. This was opted according to the list of scores of student's score the class who has low<sup>42</sup> score then was used to be the research of research and questionnaire.

In this observation it also found that in the learning process, media that has been using is student worksheet without other media that support or motivate students to study. Students are passive in the learning process. Therefore, its needs other media that give hopefully student motivation, interest to study in the object "force" in 5<sup>th</sup> grade elementary school. The media according to the researcher that is suitable to them is learning science's video.

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<sup>42</sup> Students have gotten score less than 75 (student must get score of study more than 75 according to standard of minimum score of Science 5<sup>th</sup> grade SD/MI)

After observation, collecting the various sources that support in developing based on the observation learning science's video. Those various sources:

- a. Book of Science Senang Belajar Ilmu Pengetahuan Alam Rositawaty-Aris Muharam Kelas V SD/MI
- b. Book of science Belajar Praktis Ringkasan Materi Ilmu Pengetahuan Alam Untuk SD/MI oleh Nrimakarya kelas V semester Genap
- c. Syllabus of for Science 5th grade students of elementary school
- d. Student worksheet science 5th grade students of elementary school

Table 4.1: *Competences must be received by student*<sup>43</sup>:

No.	Competences
1.	Classifying magnetic and non-magnetic
2.	The power of magnet's force to move objects
3.	Giving examples about benefit of magnet
4.	How to make magnet (Scraping)
5.	How to make magnet (Induction)
6.	How to make magnet (Electromagnet)
7.	Concluding that gravity force causes everything will be moving down
8.	Comparing moving of the things on different area (hard and soft area)
9.	Explaining how strong and low the scraping force
10.	Explaining advantages of scraping force

The data collected, the researcher consulted them to the expert of media, teacher and close friend, sharing about media that would be produced and developed. Then, finally a media that developed was a science video media.

<sup>43</sup> Syllabus of Sciences learning about "Force" 5<sup>th</sup> grade of semester 2 in MIN Rejoso Jombang.

The first in developing science's video media is making a flowchart. Flowchart is used as a scene of research's thinking to easily develop video media that would be developed using Adobe Flash CS3 software.

The next step is making storyboard. Storyboard was made in detail. In the storyboard include scripts of narrations, design of animation, design of appearance and music. This storyboard was made to easily visualize idea in order to arrange easily. Then, storyboard was validated by an expert of learning media and an expert of that material on object. The storyboard that has validated by valuator, then used to produce the learning video.

Developing learning sciences video included producing pictures and animations, producing audio, developing in Adobe Flash CS3 then produced and validated by experts of learning media.

a. Producing pictures and animations

In this step the storyboard has already made and also validated by expert of learning media and of material object. Processing in designing pictures and animations was based on storyboard that was made and validated. Designing pictures and animations is actually visualizing texts or scripts that are made in storyboard. In designing pictures, the software that was used is Adobe Photoshop CS3. The pictures that be formatted in *.png* file, then those pictures were animated in software Adobe Flash CS3. Those animations were

designed and arranged based on the storyboard that has been validated by expert of learning media and material object.

b. Producing Audio

After producing pictures and animations, the next step is producing narrator voice. In producing narrator voice, the research used a hand phone to record the narrator voice. A narrator spoke based on narrations or scripts that were already made in validated storyboard. A recorded audio not combined with animations directly. The recorded audio or video was formatted in *\*.3gp* or *\*.amr* then should be converted to *\*.mp3* or *\*.wav* in order to able to be imported in Adobe Flash CS3. The mp3 and wav files are needed because it made easier for the developing process since there are several software of video and audio editor that supported files that have extension *mp3* and *wav*.

In this step producing the effect voice was also made, for examples the effect sound of ringing bell or other instrument music. Those sound effects were served in software video recorder, Camtasia Studio.

c. Producing Video

After processing of producing the audio, those files were imported to Adobe Flash to combine between animation and voice. Then, recording process with Camtasia Studio Recording and edited them, the finally was produced with Camtasia Studio formatted in file *\*.avi*. As a final stage they were burned to compact disk/CD. After

producing a learning sciences' video and ready to be tried out, media must be validated by the experts of learning media and be revised if there are suggestions from them.

## 2. Results of the First Revising of Learning Sciences Video

### a. Expert in Sciences (Scientific Contents)

According to the expert in sciences, Ahmad Abtokhi, M.Pd as an expert of material object gave comments and suggestion in the questionnaire which has been given by the researcher about learning sciences video. This was done to improve quality of learning video.

Table 4.2: Validated by the expert of materials scientific

No.	Materials	$\sum x$	$\sum xi$	P (%)	Criteria	Note
1.	Classifying about magnetic and non-magnetic	2	5	40	Very Bad	Revision Total
2.	The power of magnetic force to move the thin objects	4	5	80	Good	No need to be revised
3.	Giving examples about benefit of magnet	3	5	60	Enough	Better to be revised
4.	How to make magnet (Scraping)	3	5	60	Enough	Better to be revised
5.	How to make magnet (Induction)	3	5	60	Enough	Better to be revised
6.	How to make magnet (Electromagnet)	4	5	80	Good	No need to be revised
7.	Concluding that gravity force causes object will be moved down	4	5	80	Good	No need to be revised

8.	Comparing moving of object in different area (hard and soft area)	4	5	80	Good	No need to be revised
9.	Explaining how strong and low the scraping force	4	5	80	Good	No need to be revised
10.	Explaining the advantages of scraping force	4	5	80	Good	No need to be revised
<b>Total</b>		<b>35</b>	<b>50</b>	<b>70</b>	<b>Enough</b>	<b>Better to be revised</b>
<b>Average <math>P = \frac{\sum x}{\sum x_i} \times 100</math></b>		<b>70 (Enough=Reasonable, but better to be revised)</b>				

Note:

$$P = \frac{\sum x}{\sum x_i} \times 100$$

P = Reasonability

$\sum x$  = Total score of response (answer)

$\sum x_i$  = Total of the highest response score

The quality of learning media according to *Scale of Likert*:<sup>44</sup>

Table 4.3: *Scale of Likert*



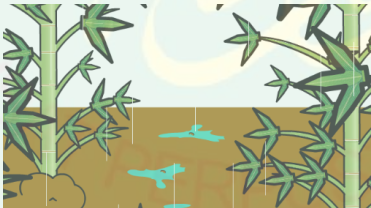

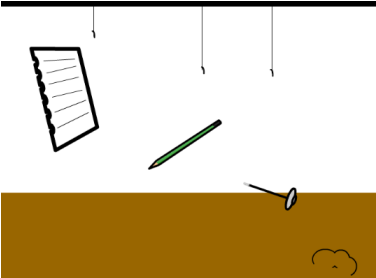

Criteria	Score (%)
Excellent (no revision)	90.00%-100%
Good (no need to be revised)	75.00%-89.00%
Enough (better to be revised)	65.00%-74.00%
Bad (need to be revised)	55.00%-64.00%
Very bad (revision total)	0.00%-54.00%

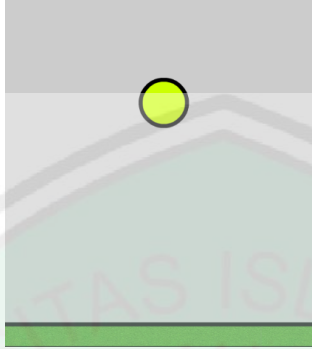

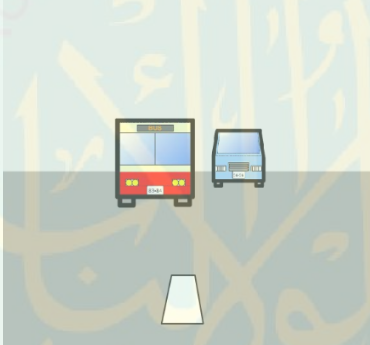

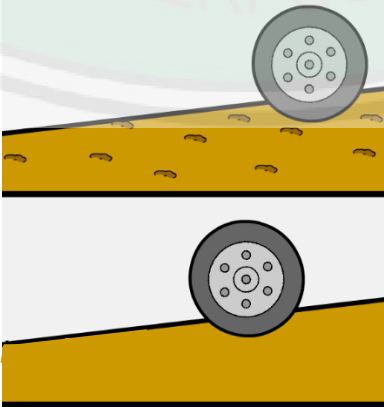

Based on the average total 70 = reasonable = better need to be revised of learning sciences video as learning media and the percentage of reasonability (70%), according to scale of Likert the

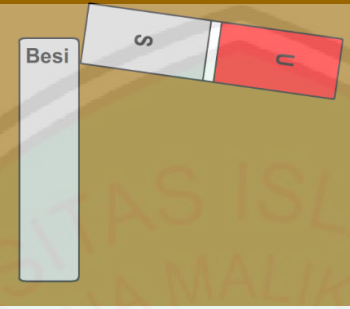

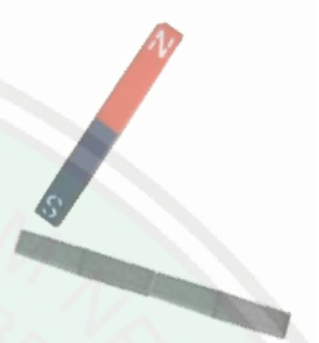

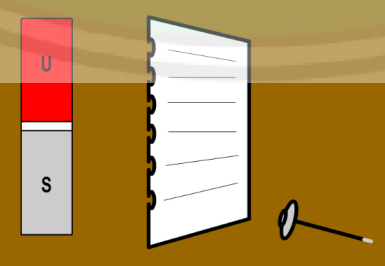
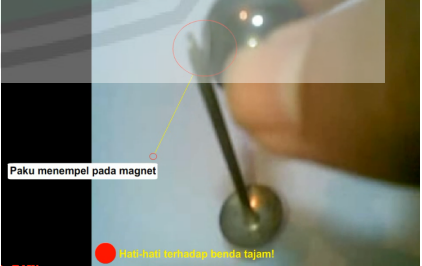
<sup>44</sup> *Ibid.*, p.135

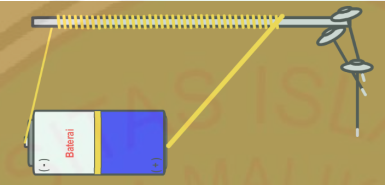
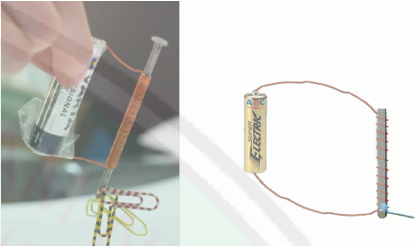
quality of this learning media is enough. Therefore, this media is reasonable to be used as learning media and it supports the learning process but better to be revised to improve quality of media.

Table 4.4: *Suggestion from the expert of materials (scientific contents)*

Comments of the Expert of Media		
No.	Suggestions	Follow up activities
1.	Examples of object more really	Has fixed based on the suggestion
	Open and close the door 	Open and close the door 
	After Revision	After Revision
	Water is falling down 	Water is falling down 
	After Revision	After Revision
	Comparison of moving down of different things 	Comparison of moving down of different things 
	After Revision	After Revision

<p>Ball is falling down</p>  <p>Before Revision</p>	<p>Ball is falling down</p>  <p>After Revision</p>
<p>Example of scrapping force</p>  <p>Before Revision</p>	<p>Example of scrapping force</p>  <p>After Revision</p>
<p>Comparing moving of the things on different area (hard and soft area)</p>  <p>Before Revision</p>	<p>Comparing moving of the things on different area (hard and soft area)</p>  <p>After Revision</p>

<p>2.</p>	<p>Missing concept on making a magnet (scraping) and picture better to be really</p>	<p>Has fixed based on the suggestion</p>
	<div style="display: flex; flex-direction: column; align-items: center;">   <p>Before Revision</p> </div>	<div style="display: flex; flex-direction: column; align-items: center;">   <p>After Revision</p> </div>
<p>3.</p>	<p>Examples of classification in magnetic and non-magnetic also the picture better to be really</p>	<p>Has fixed based on the suggestion</p>
	<div style="display: flex; flex-direction: column; align-items: center;">  <p>Before Revision</p> </div>	<div style="display: flex; flex-direction: column; align-items: center;">  <p>After Revision</p> </div>

4.	Must changed battery picture, into a real picture of battery for placing (+) & (-) and the picture better to be really	Has fixed based on the suggestion
 <p style="text-align: center;">Before Revision</p>		 <p style="text-align: center;">After Revision</p>

The Suggestions from the expert in the contents of the video in the first revision, the researcher followed it up to improve quality learning video.

#### b. Expert of Learning Media

According to the expert of learning media, Dr. Muhammad Walid, M.A as an expert of learning media gave score, comments and suggestion in the questionnaire which was given by researcher about principles, video serving and scenario of learning sciences video. This was done to improve quality of learning video.

Table 4.5: Result of Validated by the expert of learning video

No.	Arguments	$\sum x$	$\sum xi$	P (%)	Criteria	Note
1.	Media is easy and clear in explaining the materials	5	5	100	Excellent	Not revision
2.	Media is clear in giving message	5	5	100	Excellent	Not revision

3.	Media is easy to be used	5	5	100	Excellent	Not revision
4.	Media is suitable for children's	4	5	80	Good	Not need to be revised
5.	Media can be used in group or individual	4	5	80	Good	Not need to be revised
6.	Media is served in good duration	4	5	80	Good	Not need to be revised
7.	Media is served in good format	4	5	80	Good	Not need to be revised
8.	Media is displaying high quality of picture	4	5	80	Good	Not need to be revised
9.	Media is served in high quality of animation	4	5	80	Good	Not need to be revised
10.	Media is displaying good picture combination	4	5	80	Good	Not need to be revised
11.	Media is served in clear sound	3	5	60	Bad	Need to be revised
12.	Media is served in good effect of sound	4	5	80	Good	Not need to be revised
13.	Media is served in good sound combining	4	5	80	Good	Not need to be revised
14.	Media displayed good font	4	5	80	Good	Not need to be revised
15.	Media is arranged in good idea of scenario	4	5	80	Good	Not need to be revised

16.	Media is designed for interest the audience	4	5	80	Good	Not need to be revised
Total		62	80	77	Good	Not need to be revision
Average $P = \frac{\sum x}{\sum x_i} \times 100$		77 (Good=Reasonable)				

$$P = \frac{\sum x}{\sum x_i} \times 100$$

Note:

P = Reasonability

$\sum x$  = Total score of response (answer)

$\sum x_i$  = Total of the highest response score

The quality of learning media according to *Scale of Likert*.<sup>45</sup>

Table 4.6: *Scale of Likert*

Criteria	Score (%)
Excellent	90.00%-100%
Good	75.00%-89.00%
Enough (need revision)	65.00%-74.00%
Bad (need revision)	55.00%-64.00%
Very bad (revision total)	0.00%-54.00%

Based on the average total 77 = good = reasonable of learning sciences video as learning media and the percentage of reasonability (77%), according to scale of Likert the quality of this learning media is good. Therefore, this media is reasonable to be used as learning media and it supports the learning process but in the first revision of learning media, researcher tried to improve the quality of media in

<sup>45</sup> *Ibid.*, p.135

order to get the highest values from expert and reasonable to be learning media.

Table 4.7: *Suggestion from the expert of learning video*

Comments of the Expert of Media		
No.	Suggestions	Follow up activities
1.	Sound changed into voice of teacher	Has fixed based on the suggestion
	Media was used student's voice	Sound of media has been changed into voice of teacher
2.	Explaining mind mapping need voice of narrator	Has fixed based on the suggestion
	No narrator's voice in explaining mind mapping	In explaining mind mapping has been added narrator's voice
3.	Prolog in videos was needed	Has fixed based on the suggestion
	No prolog in videos	Prolog in videos has been added
4.	Quiz need to be arranged	Has fixed based on the suggestion
	Less in number of quiz	Number of quiz has been added and arranged

The Suggestions from the expert of media, the researcher followed it up and finally produced it as learning video. Therefore, this media is reasonable to be used as learning media and it supports the learning process but in the first revision of learning media, there were suggestion from expert of learning media to improve the quality of media, then researcher tried to improve the quality of media with followed up the suggestions that have been given by experts of learning media in order to get the highest values from expert and reasonable to be learning media.

### 3. Result of the Second Revising of Learning Sciences Video

#### a. Expert in Sciences (Scientific Contents)

According to the expert in sciences, Ahmad Abtokhi, M.Pd as an expert of material object gave comments and suggestion in the questionnaire which has been given by the researcher about learning sciences video. This was done to improve quality of learning video.

Table 4.8: Validated by the expert of materials scientific

No.	Materials	$\sum x$	$\sum xi$	P (%)	Criteria	Note
1.	Classifying about magnetic and non-magnetic	4	5	80	Good	Not need to be revised
2.	The power of magnetic force to move the thin objects	5	5	100	Excellent	Not revision
3.	Giving examples about benefit of magnet	5	5	100	Excellent	Not revision
4.	How to make magnet (Scraping)	5	5	100	Excellent	Not revision
5.	How to make magnet (Induction)	5	5	100	Excellent	Not revision
6.	How to make magnet (Electromagnet)	5	5	100	Excellent	Not revision
7.	Concluding that gravity force causes object will be moved down	4	5	80	Good	Not need to be revised
8.	Comparing moving of object in different area	5	5	100	Excellent	Not revision

	(hard and soft area)					
9.	Explaining how strong and low the scraping force	4	5	80	Good	Not need to be revised
10.	Explaining the advantages of scraping force	5	5	100	Excellent	Not revision
<b>Total</b>		<b>47</b>	<b>50</b>	<b>94</b>	<b>Excellent</b>	<b>Not revision</b>
<b>Average <math>P = \frac{\sum x}{\sum x_i} \times 100</math></b>		<b>94 (Excellent=Reasonable)</b>				

Note:

$$P = \frac{\sum x}{\sum x_i} \times 100$$

P = Reasonability

$\sum x$  = Total score of response (answer)

$\sum x_i$  = Total of the highest response score

The quality of learning media according to *Scale of Likert*:<sup>46</sup>

Table 4.9: *Scale of Likert*

Criteria	Score (%)
Excellent	90.00%-100%
Good	75.00%-89.00%
Enough (need revision)	65.00%-74.00%
Bad (need revision)	55.00%-64.00%
Very bad (revision total)	0.00%-54.00%

Based on the average total 94 = excellent = reasonable of learning sciences video as learning media and the percentage of reasonability (94%), according to scale of Likert the quality of this

<sup>46</sup> *Ibid.*, p.135

learning media is excellent. Therefore, this media is reasonable to be used as learning media and it supports the learning process.

Table 4.10: *Suggestion from the expert of materials (scientific contents)*

Comments of the Expert of Media	
Suggestions	Follow up activities
Contents of media is OK and quiz need to be arranged in order to easy to be used.	Researcher has been arranged the quiz interactive and can be used easily.

The Suggestions from the expert in the contents of the video in the second revision and learning media is reasonable to be a learning media then the researcher followed it up the suggestion. Finally, produced it's as learning video.

b. Expert of Learning Media

According to the expert of learning media, Dr. Muhammad Walid, M.A as an expert of learning media gave score, comments and suggestion in the questionnaire which was given by researcher about principles, video serving and scenario of learning sciences video. This was done to improve quality of learning video.

Table 4.11: *Result of Validated by the expert of learning video*

No.	Arguments	$\sum x$	$\sum xi$	P (%)	Criteria	Note
1.	Media is easy and clear in explaining the materials	5	5	100	Excellent	Not revision
2.	Media is clear in giving message	5	5	100	Excellent	Not revision
3.	Media is easy to be used	5	5	100	Excellent	Not revision

4.	Media is suitable for children's	4	5	80	Good	Not need to be revised
5.	Media can be used in group or individual	5	5	100	Excellent	Not revision
6.	Media is served in good duration	4	5	80	Good	Not need to be revised
7.	Media is served in good format	4	5	80	Good	Not need to be revised
8.	Media is displaying high quality of picture	5	5	100	Excellent	Not revision
9.	Media is served in high quality of animation	5	5	100	Excellent	Not revision
10.	Media is displaying good picture combination	5	5	100	Excellent	Not revision
11.	Media is served in clear sound	5	5	100	Excellent	Not revision
12.	Media is served in good effect of sound	4	5	80	Good	Not need to be revised
13.	Media is served in good sound combining	4	5	80	Good	Not need to be revised
14.	Media displayed good font	5	5	100	Excellent	Not revision
15.	Media is arranged in good idea of scenario	5	5	100	Excellent	Not revision
16.	Media is designed for interest the audience	5	5	100	Excellent	Not revision
Total		75	80	93	Excellent	Not revision
Average $P = \frac{\sum x}{\sum x_i} \times 100$		93 (Excellent=Reasonable)				

$$P = \frac{\sum x}{\sum x_i} \times 100$$

Note:

P = Reasonability

$\sum x$  = Total score of response (answer)

$\sum x_i$  = Total of the highest response score

The quality of learning media according to *Scale of Likert*.<sup>47</sup>

Table 4.12: *Scale of Likert*

Criteria	Score (%)
Excellent	90.00%-100%
Good	75.00%-89.00%
Enough (need revision)	65.00%-74.00%
Bad (need revision)	55.00%-64.00%
Very bad (revision total)	0.00%-54.00%

Based on the average total 93 = excellent = reasonable of learning sciences video as learning media and the percentage of reasonability (93%), according to scale of Likert the quality of this learning media is excellent. Therefore, this media is reasonable to be used as learning media and it supports the learning process.

Table 4.13: *Suggestion from the expert of learning video*

Comments of the Expert of Media	
Suggestions	Follow up activities
Prolog in videos is good, but need to be more added	Prolog in videos has been added based on the suggestion

The Suggestions from the expert of learning media in the second revision and learning media is reasonable to be a learning media then the researcher followed it up the suggestion that has been

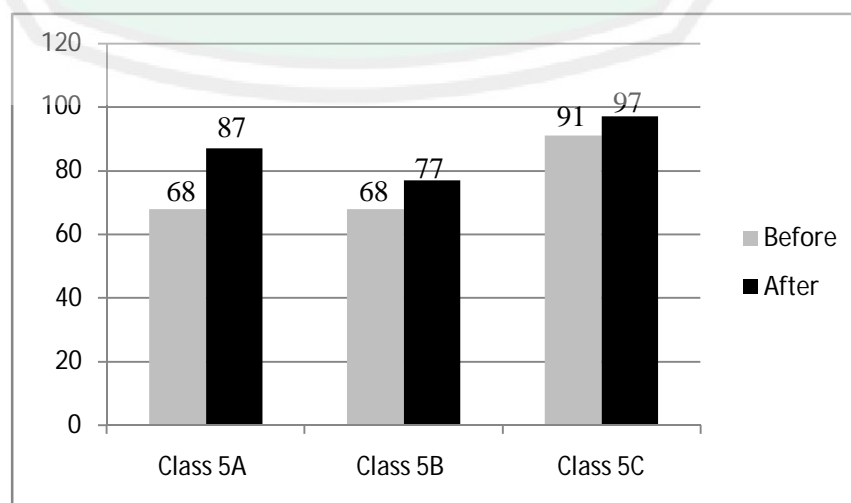
<sup>47</sup> *Ibid.*, p.135

given by expert of learning media. Finally, produced it's as learning video.

c. Result of the Reasonability of Learning Sciences' Video to Improve Effectiveness of Learning

This reasonability is used to know that learning sciences media which has been developed can improve effectiveness of learning and student's scores. The reasonability of learning media has been analyzed based on averages of student's score before and after using this learning media. If average of student's scores after using this media was less than before using this learning media, therefore, this learning media is not effective to improve effectiveness of learning, but if average of student's scores after using this media is more than before using this learning media, therefore, this learning media is effective to improve effectiveness of learning and student's score. There are charts that visualize the results of the student's test:

Picture 4.1: Chart about percentages of the student's score average before and after using learning sciences video class 5A, 5B, and 5C



## The results of the experiment class of student's test in class 5A

No.	Name	Score of Pretest	Score of Posttest
1.	Ach. Fajar Maulana	60	71
2.	Achmad Fadila	82	92
3.	Achmad Qosim Junaidi	55	71
4.	Ade Zen Amrullah	55	65
5.	Aftaju Hafiz Hidayat	82	100
6.	Afwin Bellinda Putri	72	92
7.	Aldiansyah	65	78
8.	Amalia S.	80	92
9.	Anandra	85	92
10.	Andini Nur Oktavia	65	100
11.	Anis Aprelia Susanti	84	92
12.	Erly Wahyu Ningtias	70	92
13.	Firdaus Fahlefi	85	100
14.	Hikmah Cahya Ningrum	65	92
15.	Jannatul Firdaus	55	71
16.	Lailatus Shokifa	70	92
17.	M. AinulYaqin	70	92
18.	M. Dwi Putra	65	78
19.	M. Eko Syarifain	70	100
20.	M. Helmi Bolgia	75	100
21.	M. Ilzam Firobbih	65	92
22.	M. Imam Mahmudi	65	71
23.	M. Marzuki	71	85
24.	Marzuki Zainudin	71	85
25.	Nur Mala S.	65	90
26.	Rayani Azzahra	65	90
27.	Rizal Efendi	60	78
28.	Safiqo Nur Hidayati	60	92
29.	Sherin Septiana	65	92
30.	Yudhan Fatino Pratama	70	100
Total		2067	2637
Average		68,8	87,9

Table 4.14: Lists of score 5A

## The results of the controlled class of student's test in class 5B

No.	Name	Score of Pretest	Score of Posttest
1.	Ahmad Hidayatullah	65	71
2.	Aliyatus Solihah	65	65
3.	Angga Rifanda	60	78
4.	Ansita Islamia	70	92
5.	Ari Cahyadi	55	75
6.	Ario Ghunayanto	50	85
7.	Aulia Ilma Ningrum	70	72
8.	Bima Sapta Yudha	65	78
9.	Cindy Wulandary	55	78
10.	Diah Ayu Puspita	60	85
11.	Fiona Fatmi Alike Putri	78	80
12.	Iklil Amilatul Khoir	60	82
13.	Izzatun Nabila Zainuddin	50	68
14.	Jagad Hana S.	65	68
15.	Jihan Eka Syafhira S.	65	71
16.	Jihan Natasya	68	75
17.	M. Heri Yulianto	70	75
18.	M. Imaduddin Akbar	80	85
19.	M. Rifky Ramadan	80	75
20.	M. Zaim Mutahajjir	80	75
21.	Maulana Pradana S.	65	72
22.	Miftahus Surur	75	75
23.	Mohammad Reza F.	75	75
24.	Niken Gonyatur Rizky F.	70	72
25.	Pratista Ruscka	80	92
26.	Putri Antasya	70	70
27.	Rahmawati	65	70
28.	Ririn Rofiqoh	65	70
29.	Riza Nailul	70	92
30.	Wahyu Dwi H.	85	92
31.	Wahyu DwiSantoso	70	70
32.	Yulia Rahmawati	80	85
Total		2181	2468
Average		68,1	77,1

Table 4.15: Lists of score 5B

The results of the special<sup>48</sup> class of student's test in 5C

No.	Name	Score of Pretest	Score of Posttest
1.	Ahmad Hilmi Arif Jodi	100	100
2.	Alfi Amajida	92	100
3.	Alfi Husayniah	100	100
4.	Anisia Ceyrina M.	85	92
5.	Anjar Hermawan	92	-
6.	Arvine Fiona	95	92
7.	Aulia Maulidah	92	100
8.	Aulia Nur Rohmah	85	92
9.	Cahyaning Puspita N.	85	100
10.	Cholifatul Fauziah	85	92
11.	Echi Agustina Hildayatul J.	85	100
12.	Eka Amalya Ramadhani	100	100
13.	Habibur Rohman	92	92
14.	Hunul Lailatus S.	100	100
15.	Ibtisan Hammadah Aini	92	92
16.	Islamia Nur	85	100
17.	Khoiriyatul Muwafiqoh	92	92
18.	Leni Eka Lestari	85	92
19.	M. Atho'ur Rohman	100	100
20.	M. Syaifudin Alfin	85	100
21.	M. Zainul Abidin	92	100
22.	Mirza Rizqi O.	92	98
23.	Naufal Setiawan	85	100
24.	Nur Ilma Rahmatika A.	92	100
25.	Oryza Madaddahri Izzul Haq	92	98
26.	Pinta Rahayuning Tiyas	85	98
27.	Rifdah Nazilatul R.	85	100
28.	Riza Ummami	85	100
29.	Sinta Nuriyah	100	100
30.	Syarifatuz Zahra 'Aisy K.	100	100
31.	Nur Fajar Arif	92	100
Total		2827	2538
Average		91,1	97,6

Table 4.16: Lists of score 5C

<sup>48</sup> This is special class. This class is class of brilliants students in MIN Rejoso Jombang. This class hasn't be researched, but this class to be comparison between class control & class experiment that be researched.

### These are the steps to determine T-Test:

First Step: Determining  $H_a$  and  $H_o$  in sentences

$H_a$  : There is significant differential toward the effectiveness and the achievement of 5<sup>th</sup> grade students who used learning sciences video than 5<sup>th</sup> grade students who did not use learning sciences video in MIN Rejoso Jombang.

$H_o$  : There is no significant differential toward the effectiveness and the achievement of 5<sup>th</sup> grade students who used learning sciences video than 5<sup>th</sup> grade students who did not use learning sciences video in MIN Rejoso Jombang.

Second Steps: Determining  $H_a$  and  $H_o$  in statistics

$H_a$  :  $\mu_a < \mu_b$

$H_o$  :  $\mu_a \geq \mu_b$

Third Steps: Determining Average ( $\bar{X}$ ), Standard Deviation (s), Variants ( $s^2$ ), and Correlation (r)

Table 4.17: *Paired Sample Statistics (Computing based on SPSS)*

		Mean	N	Std. Deviation	Std. Error Mean
Control	Var.1	77.1000	30	7.78305	1.42098
Experiment	Var.2	87.9000	30	10.28340	1.87748

Table 4.18: *Paired Sample Correlation (Computing based on SPSS)*

		N	Correlation	Sig.
Correlations	Var.1 & Var.2	30	.014	.940

Table 4.19: Paired Sample Test (Computing based on SPSS)

	Paired Differences						T	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference					
				Lower	Upper				
Test V1 &V2	-10.8000	12.80733	2.33929	-15.5823	-6.0177	-4.619	29	.000	

Note:

Average :  $\bar{x}_1 = 77,10$        $\bar{x}_2 = 87,90$

Standard deviation :  $s_1 = 7,78$        $s_2 = 10,28$

Variants :  $s_1^2 = 60,5284$        $s_2^2 = 105,6784$

Correlation :  $r = 0,014$

Fourth Steps: Determining  $t$

$$t = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2} - 2r \left( \frac{s_1}{\sqrt{n_1}} \right) \left( \frac{s_2}{\sqrt{n_2}} \right)}}$$

$$t = \frac{77,10 - 87,90}{\sqrt{\frac{60,5284}{30} + \frac{105,6784}{30} - 2(0,014) \left( \frac{7,78}{\sqrt{30}} \right) \left( \frac{10,28}{\sqrt{30}} \right)}}$$

$$t = -4.619$$

Fifth Steps: Determining theorem of trying out

1. Significance ( $\alpha = 0,05$ )
2.  $df = n_1 - 1 = 30 - 1 = 29$

Therefore, data  $t_{tabel} = 2,045$

### 3. Criterion of trying out

If:  $t_{test} < t_{table}$ , there  $H_a$  is accepted and  $H_o$  is rejected

Sixth Steps: Comparing between  $t_{test}$  with  $t_{table}$

$$\text{Result} = t_{test} < t_{table} = -4,619 < -2,045$$

Therefore :  $H_o$  is rejected and  $H_a$  is accepted

Seventh Steps: Conclusion

Therefore, there is a significant differential toward the effectiveness and the achievement of 5<sup>th</sup> grade students who used learning sciences' video than 5<sup>th</sup> grade students who not use learning sciences' video in MIN Rejoso Jombang.

## B. The Discussion

### 1. Developing Learning Sciences' Video

Results of the observation that has been done, student's score of 5<sup>th</sup> grade of class 5A was low<sup>49</sup> and a half more of student of class 5A have gotten low score is less than 75. In this observation it also found that in the learning process, media that has been using is student worksheet without other media that support or motivate students to study. Students are passive in the learning process. Those problems can give effect in student's score of study. Therefore, must be used media that can be used to improve the student's score.

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<sup>49</sup> Students have gotten score less than 75 (student must get score of study more than 75 according to standard of minimum score of Science 5<sup>th</sup> grade SD/MI)

After observation, collecting the various sources that support in developing learning science's video. Those various sources are book of science, syllabus also student worksheet science 5th grade students of elementary school. The data have collected, the researcher consulted them to the expert of media, teacher and close friends, sharing about media that suitable based on the characteristics of the grade and could improve the students' score 5<sup>th</sup> grade of class 5A in MIN Rejoso Jombang. Then, finally a media that suitable was a science video media.

The first in developing science's video media was making a flowchart. Flowchart was used as a scene of research's thinking to easily develop video media that would be developed using Adobe Flash CS3 software. The next step was making storyboard. This storyboard was made to easily visualize idea in order to arrange easily, then producing pictures and animations. Processing in designing pictures and animations was based on storyboard that was made and validated by experts of learning media. Those pictures were animated in software Adobe Flash CS3.

The next step was producing narrator voice. In producing narrator's voice was based on narrations or scripts that were already made in validated storyboard. After processing of producing the audio, those files were imported to Adobe Flash to combine between animation and voice. Then, recording and producing process have been done with Camtasia Studio Recording and edited them. Finally, produced with

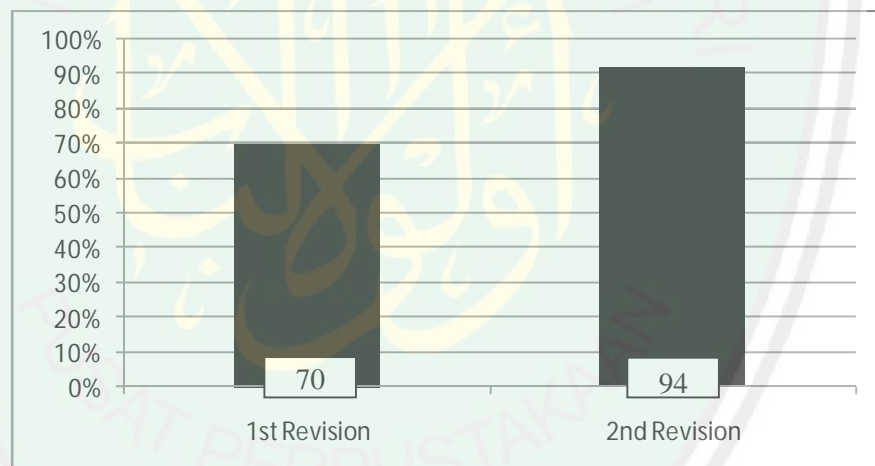
Camtasia Studio and were burned to compact disk/CD. Learning sciences video has already to be tried out as learning media to students.

## 2. Revising Learning Sciences Video “Force”

### a. Expert in Sciences (Scientific Contents)

There is chart that visualized about the quality of learning sciences video between the first revision and the second revision based on percentages that have given by expert in scientific contents. The chart can be seen bellow:

Picture 4.2: *Chart about percentages of the reasonable of learning video that given by expert in sciences*



Based on the reasonability's chart can describe that in the first revision of learning sciences video from expert in sciences or scientific contents the quality of learning sciences video got percentage total 70%. Based on criterion of scale of Likert, 70% is enough. This means that quality of Learning Sciences Video as learning media is enough. Therefore, this Learning Sciences is reasonable to be used as learning media and supports the learning

process but there were some suggestions from the expert in sciences to improve the quality of learning sciences' video.

In the second revision of learning sciences video from expert in sciences or scientific contents, the quality of learning sciences video got percentage total 94%. Based on criterion of scale of Likert, 94% is excellent. This means that quality of Learning Sciences Video as learning media is excellent. Therefore, this Learning Sciences is reasonable to be used as learning media and supports the learning process.

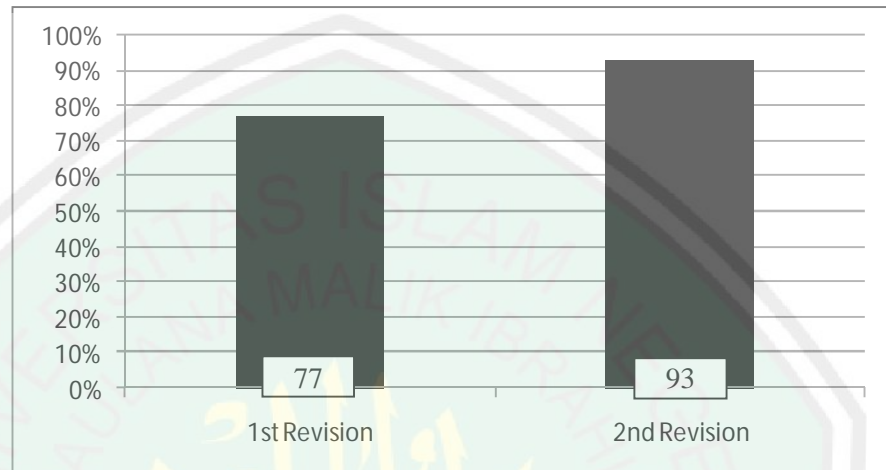
Between the first and second revisions has improved, percentage 70% into 94%. This means that the quality of learning media is excellent. Therefore, learning sciences video is reasonable and suitable to be learning media for 5<sup>th</sup> grade students in MIN Rejoso Jombang.

b. Expert of Learning Media

Based on data that have given by expert of learning media, learning sciences video as a learning media has given about percentage 77% in the first revision and 93% in the second revision. This means that the quality of learning media is excellent. More details about them, there is a chart that served to visual about the quality of learning sciences video between the first revision and the second revision based on percentages that have given by expert of learning media.

The chart can be seen bellow:

Picture 4.3: *Chart about percentages of the reasonable of learning video that given by expert of learning media*



Based on the reasonability's chart can describe that in the first revision of learning sciences video from expert of learning media, the quality of learning sciences video got percentage total 77%. Based on criterion of scale of Likert, 77% is good. This means that quality of Learning Sciences Video as learning media is enough. Therefore, this Learning Sciences is reasonable to be used as learning media and supports the learning process but there were some suggestions from the expert in sciences to improve the quality of learning sciences' video.

In the second revision of learning sciences video from expert in sciences or scientific contents got percentage total 93%. Based on criterion of scale of Likert, 93% is excellent. This means that quality of Learning Sciences Video as learning media is excellent. Therefore, this Learning Sciences is reasonable to be used as learning media and supports the learning process.

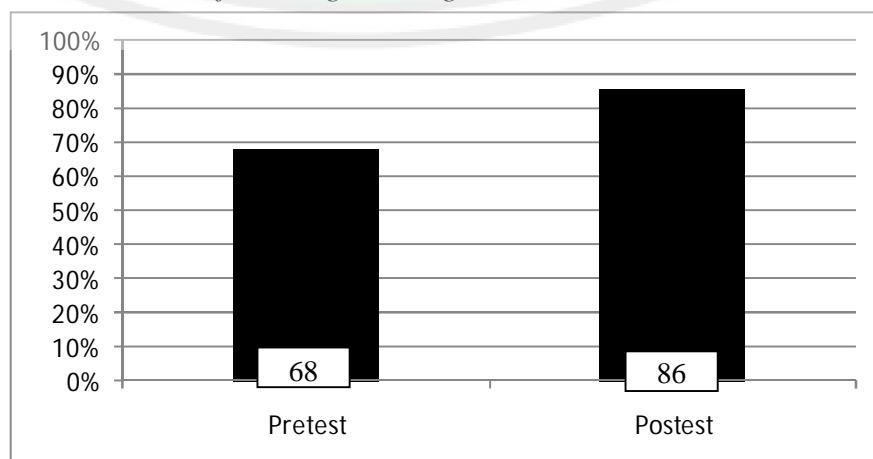
Between the first and second revisions has improved, percentage 77% into 93%. This means that the quality of learning media is excellent. Therefore, learning sciences video is reasonable and suitable to be learning media for 5<sup>th</sup> grade students in MIN Rejoso Jombang.

### 3. Reasonability of Learning Sciences' Video to Improve Effectiveness of Learning

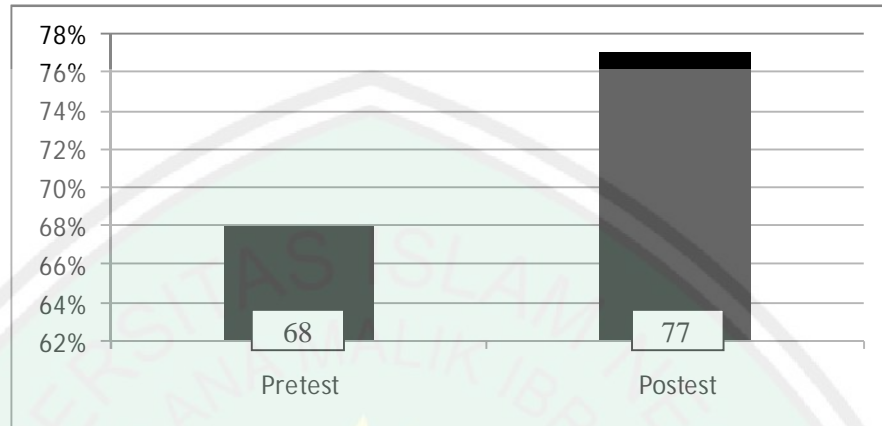
Reasonability of media has been gotten based on results of the student's learning before and after using Learning Sciences Video and the result of T-Test Sample Paired. This reasonability is used to know that learning sciences media which has been developed can improve effectiveness of learning and student's scores.

There is chart that visualized about score the quality of learning sciences video between the first revision and the second revision based on percentages that have given by expert of learning media. The chart can be seen bellow:

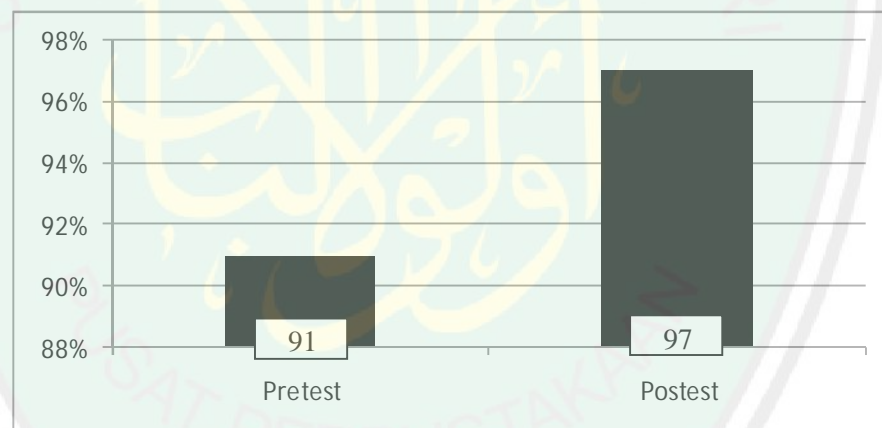
Picture 4.4: *Chart about percentages of the student's score average before and after using learning sciences video class 5A*



Picture 4.5: Chart about percentages of the student's score average before and after using learning sciences video class 5B



Picture 4.6: Chart about percentages of the student's score average before and after using learning sciences video class 5C



Based on the chart's pretest and posttest of class 5A, the averages (mean) of student's scores was 68 before using learning sciences video and 86 after using learning sciences video. Then, the scores of pretest and posttest of the controlled class was less than the experiment class:  $77 < 86$ . That means that learning sciences video can improve effectiveness of learning and student's scores.

Based on T-Test Sample Paired, the researcher has determined the point of significance which is 0.05. From the statically data, it was found the significance (2-tailed) has been written 0.000, therefore  $0.000 \leq 0.050$  is very significance. Then, based on this T-Test can be resulted that  $T_{\text{test}} < T_{\text{table}} = -4,619 < -2,045$ . That means that  $H_0$  is rejected and  $H_a$  is accepted. Based on this data, it can be concluded that there is differential of student achievement before and after using the Learning Sciences Video media. Then, it can be concluded that Learning Sciences' Video as learning media which has developed effectively can improve student's scores of students' learning in MIN Rejoso Jombang. Therefore, Learning Sciences' Video as learning media which has developed effectively can improve effectiveness of learning and student's scores for 5<sup>th</sup> grade students in MIN Rejoso Jombang.

## Chapter V

### Conclusion and Suggestion

#### A. Conclusion

Based on the result of research that has explained, therefore can be concluded that:

##### 1. The Procedures of Developing Sciences' Learning Video

There were steps to develop Learning Sciences Video, they were identifying the aim product to determine product that will be developed also identifying the characteristics of students to determine media that suitable for 5<sup>th</sup> grade. The next step was collecting the various sources that support in developing Learning Science's Video. After collecting the various sources, the next step was making storyboard. The storyboard was made to easy visualize idea in order to arrange easily, then producing pictures and animations. Then producing narrator's voice was based on narrations or scripts that were already made in validated storyboard and then, the next step was producing Learning Sciences' Video with Camtasia Studio and burned to compact disk/CD. After burning to disk/CD, the media would be better presented to the expert of learning media and scientific contents to get suggestions about learning media before trying out to students. Finally, Learning Sciences Video already to be tried out to students.

## 2. The Result of Revising of Learning Sciences' Video

The results of reasonability of Learning Sciences' Video by the expert in sciences' content got 94%. Based on scale of Likert 94% is excellent. That mean, the quality of Learning Sciences Video as learning media is excellent. Then, the result of reasonability of Learning Sciences Video by the expert of learning media got 93%. Based on scale of Likert 93% is excellent. That mean, the quality of Learning Sciences Video as learning media is excellent. Therefore, Learning Sciences Video which has developed is reasonable and suitable as a learning media for 5<sup>th</sup> grade in MIN Rejoso Jombang.

## 3. The Reasonability of Learning Sciences' Video to Improve Effectiveness of Learning

The reasonability of Learning Sciences Video as learning media was valued based on the results of student's learning before and after using Learning Sciences Video and the results based on data of T-Test Sample Paired. The pretest and the posttest of class 5A, the averages of student's scores was 68 before using learning sciences video and the averages of student's scores was 86 after using learning sciences video. Then, the scores of the posttest of the controlled class was less than the experiment class. The averages of the controlled class' posttest score was 77 and the averages of the experiment class' posttest score 87. Based on T-Test Sample Paired, this can be stated that there is significant deferential toward the effectiveness and the achievement of 5<sup>th</sup> grade students who

used Learning Sciences' Video than 5<sup>th</sup> grade students who did not used Learning Sciences' Video in MIN Rejoso Jombang. The result can be seen based on significances 0.000 of T-Test it means that  $0.000 \leq 0.050$  is very significance. Then, based on this T-Test can be resulted that  $T_{\text{test}} < T_{\text{table}} = -4,619 < -2,045$ . That means that  $H_0$  is rejected and  $H_a$  is accepted. Based on this data, it can be concluded that there is differential of student achievement before and after using the Learning Sciences Video media. Then, it can be concluded that Learning Sciences' Video as learning media which has developed effectively can improve student's scores of students' learning in MIN Rejoso Jombang. Therefore, Learning Sciences' Video as learning media which has developed effectively can improve effectiveness of learning and student's scores for 5<sup>th</sup> grade students in MIN Rejoso Jombang.

## **B. Suggestion**

Suggestion that be recommended included suggestion to product's advantages, suggestion to product's dissemination, and suggestion to product's further developing. More detail of suggestions can be explained below:

### **1. Suggestion to Product's Utilization**

To optimal of this product's advantage of learning sciences video are suggested below:

- a. Learning Sciences Video may be used as an alternative learning media in the topic of force.

- b. Learning Sciences Video may be implemented to support learning process in the class.
- c. Learning Sciences Video may be used with teacher's guide. This is caused of dialog's limitation in the learning media. Therefore, learning media cannot answer all of student's problems.
- d. Learning Sciences Video may be used by teacher or student who can operate the computer.

## 2. Suggestion to Product's Dissemination

To product's dissemination of Learning Sciences Video are suggested that:

- a. Learning Science Video as learning media may be used to individual then to be used in class generally.
- b. Learning Sciences Video can be copied and distributed as learning media if in its using are easy and efficiency.

## 3. Suggestion to Product's Further Developing

To product's further developing of Learning Sciences Video is suggested that next developer develops the Learning Sciences Video in others topic of sciences in order to the learning media can be used to all of grade of students and can improve effectiveness of learning also students' score of study.

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## Appendix I



KEMENTERIAN AGAMA  
UNIVERSITAS ISLAM NEGERI MAULANA MALIK IBRAHIM MALANG  
FAKULTAS TARBIYAH  
Jalan Gajayana Nomor 50 Telepon (0341) 552398 Faksimile (0341) 552398  
Website: www.tarbiyah.uin-malang.co.id

Nomor : Un.3.1/TL.001/562/2013  
Lampiran : 1 (satu) berkas proposal skripsi  
Perihal : Penelitian

02 Mei 2013

Kepada:  
Yth. Kepala Madrasah Ibtidaiyah Negeri Peterongan Rejoso  
di  
Jombang

*Assalamu'alaikum Wr. Wb.*

Kami mengharap dengan hormat agar mahasiswa di bawah ini:

Nama : Miftakhul Rizal Mubaidilla  
NIM : 09140042  
Fakultas/Jurusan : Tarbiyah/PGMI  
Semester/ Th. Ak : Genap. 2012/2013  
Judul Penelitian : **Developing Sains Learning Video to Improve Effectiveness of Learning About Force Toward 5<sup>th</sup> Grade in MIN Peterongan Rejoso Jombang**

dalam rangka menyelesaikan tugas akhir/menyusun skripsi yang bersangkutan mohon diberikan izin/kesempatan untuk mengadakan penelitian di lembaga/instansi yang menjadi wewenang Bapak/Ibu.

Demikian atas perkenaan dan kerjasama Bapak/Ibu disampaikan terima kasih.

*Wassalamu'alaikum Wr. Wb.*



**Dr. H. M. Zainuddin, MA**  
NIP. 19620507 199503 1 001

Tembusan :

1. Yth. Ketua Jurusan PGMI
2. Arsip



Certificate No. ID08/1219

Appendix II



**KEMENTERIAN AGAMA  
MADRASAH IBTIDAIYAH NEGERI REJOSO**

Di Pon. Pes. Darul 'Ulum Rejoso Peterongan Jombang Telp. (0321) 860161

SURAT KETERANGAN

Nomor: Mi.15.12.4/PP.00.4/ 238 /2013

Yang bertanda tangan di bawah ini :

Nama : Dra. LILIK NASFIATIN  
NIP : 196610121994032002  
Jabatan : Kepala MIN Rejoso Peterongan Kab. Jombang

Menerangkan dengan sesungguhnya bahwa :

Nama : MIFTAKHUL RIZAL MUBAIDILLA  
NIM : 09140042  
Fakultas/Jurusan : Tarbiyah / PGMI  
Semester : Genap, 2012/2013

Telah benar-benar melakukan penelitian "**Developing Sains Learning Video to Improve Effectiveness of Learning About Force**" pada tanggal 20 Mei – 28 Juni 2013 di Madrasah Ibtidaiyah Negeri Rejoso Peterongan Jombang.

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

Jombang, 9 Juli 2013  
Kepala Madrasah



Dra. LILIK NASFIATIN  
NIP. 196610121994032002

**Appendix III**



**MINISTRY OF RELIGION  
STATE ISLAMIC UNIVERSITY OF  
MAULANA MALIK IBRAHIM MALANG  
FACULTY OF TARBIYAH AND TEACHING SCIENCES**  
Gajayana street, No. 50 Phone (0341) 552398 Fax (0341) 552398  
Website: www.tarbiyah.uin-malang.co.id

**CONSULTATION PROOF**

Name : Miftakhul Rizal Mubaidilla  
 ID Number : 09140042  
 Faculty/Department : Tarbiyah and Teaching Sciences/Islamic Elementary School  
 Teacher Education  
 Advisor : Mokhammad Yahya, M.A., Ph.D  
 Thesis Title : **Developing Learning Sciences Video to Improve  
 Effectiveness of Learning toward 5<sup>th</sup> Grade Students in MIN  
 Rejoso Jombang**

No	Date	Consultation	Signature
1	May, 2 <sup>nd</sup> 2013	Instruments Validation	
2	May, 13 <sup>th</sup> 2013	Give Chapter I	
3	May, 16 <sup>th</sup> 2013	Revision Chapter I	
4	May, 20 <sup>th</sup> 2013	Give Chapter II	
5	May, 30 <sup>th</sup> 2013	Revision Chapter II & Give Chapter III	
6	June, 3 <sup>rd</sup> 2013	Revision Chapter III & Give Chapter IV	
7	June, 10 <sup>th</sup> 2013	Revision Chapter IV & Give Chapter V	
8	June, 12 <sup>th</sup> 2013	Revision Chapter V	
9	June, 13 <sup>th</sup> 2013	ACC All	

Malang, June, 13<sup>th</sup> 2013  
 Approved by,  
 Dean of Tarbiyah and Teaching  
 Sciences Faculty



**Dr. H. Nur Ali, M.Pd**  
 NIP.196504031998031002

## Appendix IV

### Madrasah Ibtidaiyah Negeri (MIN) Rejoso Jombang

MIN Rejoso pada awalnya merupakan madrasah Ibtidaiyah swasta di bawah yayasan Pondok Pesantren Darul Ulum Peterongan Jombang, namun sejak 21 Oktober 1968, pada masa kepemimpinan Bapak Muntaha Imam Muhtar, madrasah ini dinegerikan yang berada di atas lahan seluas 3.575 m<sup>2</sup>. Lokasi madrasah berada di Jl. Rejoso Peterongan Jombang di dalam lingkungan Pondok Pesantren Darul Ulum Peterongan Jombang. Madrasah ini memiliki nomor Statistik Madrasah 111135170002 dan Nomor Pokok Sekolah Nasional 20539575.

Secara kedinasan, MIN Rejoso termasuk dalam wilayah kerja Kementerian Agama Kabupaten Jombang. Di mana selain MIN Rejoso di kabupaten Jombang juga terdapat empat Madrasah Ibtidaiyah Negeri yang lain, yaitu MIN Kauman Utara, MIN Pojok Klitih, MIN Randu Watang, dan MIN Pucang Simo. Adapun untuk pengawasan kedinasan dari kementerian agama sebagaimana disebutkan MIN Rejoso berada dalam lingkungan kerja Penilik Pendidikan Agama Islam (PPAI) Kecamatan Peterongan. Sedangkan dari lingkungan kerja Pondok Pesantren Darul Ulum, MIN Rejoso mendapat bimbingan dan pengawasan dari pengawas kepondokan yang secara struktural berada dalam wewenang majelis pendidikan Pondok Pesantren Darul Ulum Peterongan Jombang. Adapun visi dan misi MIN Rejoso adalah sebagai berikut:

- a. Visi  
Terwujudnya generasi yang berkualitas, menguasai iptek, imtaq, dan berakhlakul karimah.
- b. Misi
  - 1) Meningkatkan kualitas pendidikan
  - 2) Meningkatkan pengadaan sarana dan prasarana yang memadai
  - 3) Mengembangkan minat dan bakat siswa sesuai dengan potensi yang dimiliki.

Struktur pimpinan di MIN Rejoso Peterongan Jombang, yang terdiri dari satu orang kepala madrasah, dan tiga orang wakil kepala madrasah.

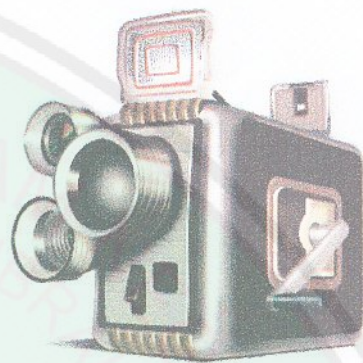
1. Kepala Madrasah : **Dra. Lilik Nasfiatin**
2. Wakil Kepala Madrasah bidang Kurikulum : **M. Ali Ghufron, S.PdI.**
3. Wakil Kepala madrasah bidang Kesiswaan : **Zaenul Arifin, S.Ag.**
4. Wakil Kepala Madrasah bidang Sarana : **Mahajid, S.Ag.**

MIN Rejoso memiliki ruang kelas sebanyak 23 ruang, satu ruang kepala madrasah, satu ruang guru, satu ruang tata usaha, satu ruang untuk sholat dan satu gedung perpustakaan.



## ANGKET MEDIA VIDEO PEMBELAJARAN SAINS

*“Penilaian kelayakan video sebagai media pembelajaran”*



Upaya dalam meningkatkan kualitas dan efektifitas pembelajaran di tingkat sekolah dasar / sederajat dimana telah dibuatnya media pembelajaran berupa “Video Pembelajaran Sains” untuk kelas 5 SD/MI bab Gaya semester 2.

Untuk meningkatkan kualitas video pembelajaran tersebut, sekiranya perlu validasi dari beberapa ahli media pembelajaran.

Lembar ini merupakan angket tentang penilaian kualitas media “Video Pembelajaran Sains”. Demikian ulasan tentang media tersebut, dimohon kepada para ahli media pembelajaran berkenan sebagai validator dari media tersebut. Terima kasih.



**ANGKET PENILAIAN KELAYAKAN MEDIA VIDEO SEBAGAI MEDIA PEMBELAJARAN  
PENGEMBANGAN VIDEO PEMBELAJARAN SAINS  
MATERI GAYA UNTUK KELAS 5 SD/MI**

**Petunjuk dalam pengisian angket:**

*Contoh:*

*Pilih jawaban dengan memberi cek salah satu kotak pada setiap pernyataan !*

No.	Pernyataan	1	2	3	4	5
1.	Media ini layak sebagai media pembelajaran Sains kelas 5 SD/MI materi "Gaya"				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

**Keterangan: 1= Kurang sekali, 2 = Kurang, 3 = Cukup, 4 = Bagus, 5 = Sangat bagus**

**Ahli Media Pembelajaran:**

Nama	Tanda Tangan
Ahmad Astadi, M.Pd	



**ANGKET PENILAIAN KELAYAKAN MEDIA VIDEO SEBAGAI MEDIA PEMBELAJARAN  
PENGEMBANGAN VIDEO PEMBELAJARAN SAINS  
MATERI GAYA UNTUK KELAS 5 SD/MI**

**Pilihlah jawaban dengan menghitamkan salah satu bulatan pada setiap pernyataan yang diajukan!**

No.	Pernyataan	1	2	3	4	5
1.	Media ini mudah dan jelas dalam menerangkan materi				✓	
2.	Media ini pesan yang disampaikan mudah diterima				✓	
3.	Media ini mudah digunakan					✓
4.	Media ini cocok untuk kelas 5 SD/MI				✓	
5.	Media ini dapat digunakan secara kelompok atau individu					✓
6.	Media ini disajikan dengan durasi waktu yang baik			✓		
7.	Media ini disajikan dalam bentuk yang baik				✓	
8.	Media ini menampilkan gambar yang bagus				✓	
9.	Media ini menampilkan animasi yang bagus				✓	
10.	Media ini menampilkan kombinasi antara warna yang baik				✓	
11.	Media ini menyajikan suara yang jelas				✓	
12.	Media ini menyajikan efek suara yang baik				✓	

13.	Media ini menyajikan kombinasi efek suara dengan narrator yang bagus					✓	
14.	Media ini menampilkan ukuran, warna dan jenis tulisan yang bagus						✓
15.	Media ini ditata dengan ide alur cerita yang bagus						✓
16.	Media ini sangat menarik untuk menarik perhatian siswa					✓	

**Mohon saran untuk meningkatkan kualitas media:**

① - kesalahan konsep pd proses  $\checkmark$  gaya magnet  
 - — pd penemuan kaku (+) & (-) pd  
 Buseny  
 - Gambar tidak alami  
 - Soal ilmu sejarah pd gambar  $\checkmark$  kuran



**ANGKET PENILAIAN KELAYAKAN MEDIA VIDEO DITINJAU DARI SEGI MATERI  
PENGEMBANGAN VIDEO PEMBELAJARAN SAINS  
MATERI GAYA UNTUK KELAS 5 SD/MI**

**Petunjuk dalam pengisian angket:**

*Contoh:*

*Pilih jawaban dengan memberi cek salah satu kotak pada setiap pernyataan !*

No.	Pernyataan	1	2	3	4	5
1.	Media ini layak sebagai media pembelajaran Sains kelas 5 SD/MI materi "Gaya"					

**Keterangan: 1= Kurang sekali, 2 = Kurang, 3 = Cukup, 4 = Bagus, 5 = Sangat bagus**

**Ahli Materi:**

Nama	Tanda Tangan
A. Abdo Ldw	



**ANGKET PENILAIAN KELAYAKAN MEDIA VIDEO DITINJAU DARI SEGI MATERI  
PENGEMBANGAN VIDEO PEMBELAJARAN SAINS  
MATERI GAYA UNTUK KELAS 5 SD/MI**

*Untuk penilaian media video ini didasarkan kecocokan materi dalam media dengan kompetensi dasar yang tertera pada silabus kelas 5 Sains semester 2 materi "Gaya".*

**Pilihlah jawaban dengan menghitamkan salah satu bulatan pada setiap pernyataan yang diajukan!**

No.	Pernyataan	1	2	3	4	5
1.	Materi tentang pengelompokan benda magnetis dan bukan magnetis		✓			
2.	Materi tentang kemampuan gaya magnet dalam menembus benda-benda tipis				✓	
3.	Materi tentang manfaat magnet dalam kehidupan sehari-hari			✓		
4.	Materi tentang pembuatan magnet dengan gosokan			✓		
5.	Materi tentang pembuatan magnet dengan induksi			✓		
6.	Materi tentang pembuatan elektromagnet				✓	
7.	Materi tentang pembuktian bahwa gaya gravitasi bumi menyebabkan benda bergerak ke bawah				✓	✓
8.	Materi tentang perbandingan gerak benda pada tempat yang kasar dan halus				✓	
9.	Materi tentang cara memperbesar dan memperkecil gaya gesek				✓	

10.	Materi tentang pemanfaatan gaya gesek dalam kehidupan sehari-hari					✓
-----	---	--	--	--	--	---

Mohon saran untuk meningkatkan kualitas media:

⊖ Materi dlm video segerakan di Revisi



**ANGKET PENILAIAN KELAYAKAN MEDIA VIDEO SEBAGAI MEDIA PEMBELAJARAN  
PENGEMBANGAN VIDEO PEMBELAJARAN SAINS  
MATERI GAYA UNTUK KELAS 5 SD/MI**

**Petunjuk dalam pengisian angket:**

*Contoh:*

*Pilih jawaban dengan memberi cek salah satu kotak pada setiap pernyataan !*

No.	Pernyataan	1	2	3	4	5
1.	Media ini layak sebagai media pembelajaran Sains kelas 5 SD/MI materi "Gaya"					✓

**Keterangan: 1= Kurang sekali, 2 = Kurang, 3 = Cukup, 4 = Bagus, 5 = Sangat bagus**

**Ahli Media Pembelajaran:**

Nama	Tanda Tangan
Dr. Muhammad Wafid, uA	



**ANGKET PENILAIAN KELAYAKAN MEDIA VIDEO SEBAGAI MEDIA PEMBELAJARAN  
PENGEMBANGAN VIDEO PEMBELAJARAN SAINS  
MATERI GAYA UNTUK KELAS 5 SD/MI**

**Pilihlah jawaban dengan menghitamkan salah satu bulatan pada setiap pernyataan yang diajukan!**

No.	Pernyataan	1	2	3	4	5
1.	Media ini mudah dan jelas dalam menerangkan materi					✓
2.	Media ini pesan yang disampaikan mudah diterima					✓
3.	Media ini mudah digunakan					✓
4.	Media ini cocok untuk kelas 5 SD/MI				✓	
5.	Media ini dapat digunakan secara kelompok atau individu				✓	
6.	Media ini disajikan dengan durasi waktu yang baik				✓	
7.	Media ini disajikan dalam bentuk yang baik				✓	
8.	Media ini menampilkan gambar yang bagus				✓	
9.	Media ini menampilkan animasi yang bagus				✓	
10.	Media ini menampilkan kombinasi antara warna yang baik				✓	
11.	Media ini menyajikan suara yang jelas			✓		
12.	Media ini menyajikan efek suara yang baik				✓	

13.	Media ini menyajikan kombinasi efek suara dengan narrator yang bagus				✓	
14.	Media ini menampilkan ukuran, warna dan jenis tulisan yang bagus				✓	
15.	Media ini ditata dengan ide alur cerita yang bagus				✓	
16.	Media ini sangat menarik untuk menarik perhatian siswa				✓	

**Mohon saran untuk meningkatkan kualitas media:**

- Layar di teruskan. Kalau media ini untuk guru, maka akan lebih baik kalau narrator adalah guru yg berdaya putar.

- Peta kunci akan lebih menarik kalau jg di narasikan.



**ANGKET PENILAIAN KELAYAKAN MEDIA VIDEO SEBAGAI MEDIA PEMBELAJARAN  
PENGEMBANGAN VIDEO PEMBELAJARAN SAINS  
MATERI GAYA UNTUK KELAS 5 SD/MI**

Petunjuk dalam pengisian angket:

Contoh:

Pilih jawaban dengan memberi cek salah satu kotak pada setiap pernyataan !

No.	Pernyataan	1	2	3	4	5
1.	Media ini layak sebagai media pembelajaran Sains kelas 5 SD/MI materi "Gaya"					<input checked="" type="checkbox"/>

Keterangan: 1= Kurang sekali, 2 = Kurang, 3 = Cukup, 4 = Bagus, 5 = Sangat bagus

Ahli Media Pembelajaran:

Nama	Tanda Tangan
Ahmad Agotchi	



**ANGKET PENILAIAN KELAYAKAN MEDIA VIDEO SEBAGAI MEDIA PEMBELAJARAN  
PENGEMBANGAN VIDEO PEMBELAJARAN SAINS  
MATERI GAYA UNTUK KELAS 5 SD/MI**

Pilihlah jawaban dengan menghitamkan salah satu bulatan pada setiap pernyataan yang diajukan!

No.	Pernyataan	1	2	3	4	5
1.	Media ini mudah dan jelas dalam menerangkan materi					✓
2.	Media ini pesan yang disampaikan mudah diterima					✓
3.	Media ini mudah digunakan					✓
4.	Media ini cocok untuk kelas 5 SD/MI				✓	
5.	Media ini dapat digunakan secara kelompok atau individu					✓
6.	Media ini disajikan dengan durasi waktu yang baik				✓	
7.	Media ini disajikan dalam bentuk yang baik				✓	
8.	Media ini menampilkan gambar yang bagus					✓
9.	Media ini menampilkan animasi yang bagus					✓
10.	Media ini menampilkan kombinasi antara warna yang baik					✓
11.	Media ini menyajikan suara yang jelas					✓
12.	Media ini menyajikan efek suara yang baik				✓	

13.	Media ini menyajikan kombinasi efek suara dengan narrator yang bagus					✓	
14.	Media ini menampilkan ukuran, warna dan jenis tulisan yang bagus						✓✓
15.	Media ini ditata dengan ide alur cerita yang bagus						✓✓
16.	Media ini sangat menarik untuk menarik perhatian siswa						✓✓

Mohon saran untuk meningkatkan kualitas media:

- Prolog untuk setiap isi pd media itu diperlukan  
diperjelas



**ANGKET PENILAIAN KELAYAKAN MEDIA VIDEO DITINJAU DARI SEGI MATERI  
PENGEMBANGAN VIDEO PEMBELAJARAN SAINS  
MATERI GAYA UNTUK KELAS 5 SD/MI**

**Petunjuk dalam pengisian angket:**

*Contoh:*

*Pilih jawaban dengan memberi cek salah satu kotak pada setiap pernyataan !*

No.	Pernyataan	1	2	3	4	5
1.	Media ini layak sebagai media pembelajaran Sains kelas 5 SD/MI materi "Gaya"					<input checked="" type="checkbox"/>

**Keterangan:** 1= Kurang sekali, 2 = Kurang, 3 = Cukup, 4 = Bagus, 5 = Sangat bagus

**Ahli Materi:**

Nama	Tanda Tangan
A. AB tohmi	



**ANGKET PENILAIAN KELAYAKAN MEDIA VIDEO DITINJAU DARI SEGI MATERI  
PENGEMBANGAN VIDEO PEMBELAJARAN SAINS  
MATERI GAYA UNTUK KELAS 5 SD/MI**

*Untuk penilaian media video ini didasarkan kecocokan materi dalam media dengan kompetensi dasar yang tertera pada silabus kelas 5 Sains semester 2 materi "Gaya".*

**Pilihlah jawaban dengan menghitamkan salah satu bulatan pada setiap pernyataan yang diujikan!**

No.	Pernyataan	1	2	3	4	5
1.	Materi tentang pengelompokkan benda magnetis dan bukan magnetis				✓	
2.	Materi tentang kemampuan gaya magnet dalam menembus benda-benda tipis					✓
3.	Materi tentang manfaat magnet dalam kehidupan sehari-hari					✓
4.	Materi tentang pembuatan magnet dengan gosokan					✓
5.	Materi tentang pembuatan magnet dengan induksi					✓
6.	Materi tentang pembuatan elektromagnet					✓
7.	Materi tentang pembuktian bahwa gaya gravitasi bumi menyebabkan benda bergerak ke bawah				✓	
8.	Materi tentang perbandingan gerak benda pada tempat yang kasar dan halus				✓	
9.	Materi tentang cara memperbesar dan memperkecil gaya gesek				✓	

10.	Materi tentang pemanfaatan gaya gesek dalam kehidupan sehari-hari								<input checked="" type="checkbox"/>
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Mohon saran untuk meningkatkan kualitas media:

OK + Quiz ditata ulang

## Appendix VI

### ACTIVITIES OF LEARNING PROCESS AFTER IMPLEMENTING LEARNING SCIENCES VIDEO IN THE CLASS



Student explains the material that have studied after watching learning sciences video



Students were brain dancing before learning was begun



Spirit to brain dance before learning was begun



Practice to make electromagnet that has studied after watching learning sciences video



Practice to make electromagnet in group



Enjoy full in team work



Implementing the skill after waching learning sciences video



Enjoy class, enjoy in the learning process with team work

# QUIZ SAINS GAYA

## Kuis Sains Materi Gaya Kelas 5 SD/MI

### PETUNJUK MENERJAKAN:

1. Mulailah mengerjakan dengan berdoa
2. Kerjakan secara berkelompok
3. Tulis nama anggota kelompok, tulis kelas dan tulis waktu saat awal mulai mengerjakan serta tulis waktu saat selesai mengerjakan
4. Kerjakan dengan waktu yang secepat mungkin, semakin cepat waktunya, semakin bagus nilainya
5. Selamat mengerjakan 😊

Kelas : VA.

Nama anggota kelompok :

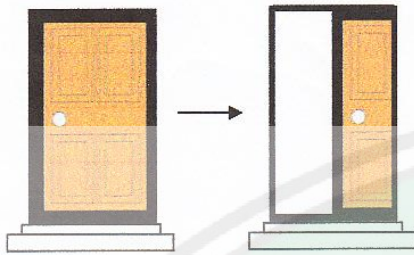
1. Jannatul Firdaus
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_

Waktu mulai : jam .....

Waktu selesai : jam .....

Jawablah pertanyaan berikut dengan tepat!

1.



Pada saat membuka dan menutup pintu, kita melakukan tarikan dan dorongan pada pintu itu. Kegiatan menarik dan mendorong tersebut, dinamakan!

G A Y A

2.



Pada gambar tersebut menandakan adanya pengaruh gaya?

G R A Y I T A S I

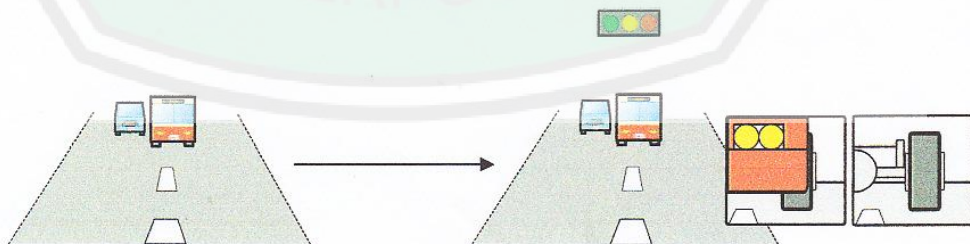
3.



Terdapat selembar kertas, pensil dan paku. Ketiga benda tersebut dijatuhkan secara bersamaan dan pada ketinggian yang sama. Maka urutan pertama, kedua dan terakhir benda yang menyentuh tanah adalah?

1. ~~Paku~~ Selembar akan lebih lambat.
2. Pensil lebih duluan jatuh
3. Paku lebih duluan jatuh

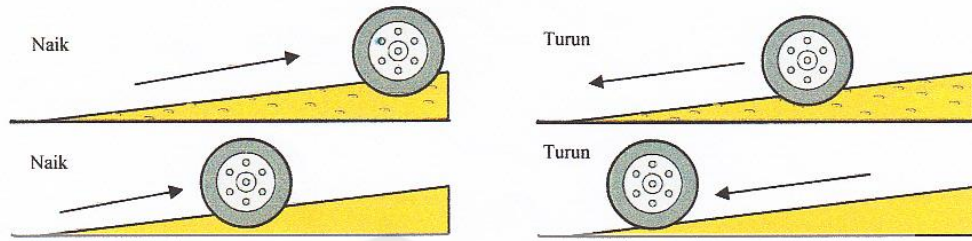
4.



Mobil yang melaju dengan cepat, tiba-tiba didepannya ada lampu lalu lintas yang menyala merah. Seketika mobil itu direm sehingga mobil pun berhenti dan menunggu lampu hijau menyala. Pada saat sopir mengerem ban mobil, terjadi gaya?

G e s e r

5.

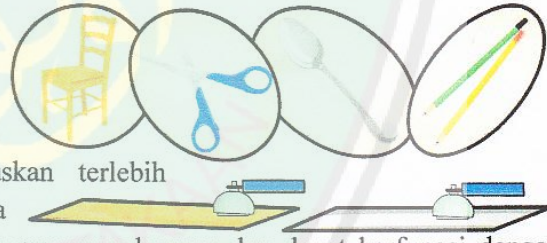


Berdasarkan gambar tersebut terdapat perbedaan kecepatan antara roda yang menggelinding pada permukaan tanah yang kasar dengan halus.

**Berilah tanda cek (v) dalam lingkaran kuning pada pernyataan yang benar berdasarkan gambar tersebut!**

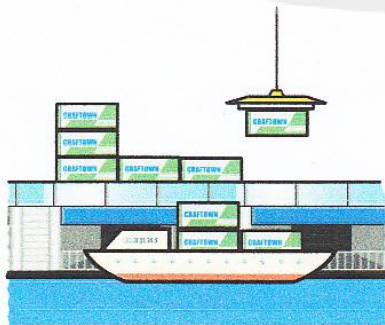
- Pada saat roda menggelinding turun pada permukaan tanah yang kasar akan lebih cepat dibandingkan pada permukaan tanah yang halus
- Pada saat roda menggelinding turun pada permukaan tanah yang kasar akan lebih lambat dibandingkan pada permukaan tanah yang halus
- Pada saat roda menggelinding naik pada permukaan tanah yang kasar akan lebih cepat dibandingkan pada permukaan tanah yang halus
- Pada saat roda menggelinding naik pada permukaan tanah yang kasar akan lebih lambat dibandingkan pada permukaan tanah yang halus

6. Para pengrajin peralatan untuk membuat perabotan rumah tangga atau peralatan sekolah seperti kursi, gunting, sendok dan pensil. Benda-benda tersebut dibentuk dan dihaluskan terlebih dahulu, agar pada saat dipakai benda tersebut tidak melukai bagi orang yang menggunakannya dan dapat berfungsi dengan baik. Para pengrajin itu memanfaatkan gaya?



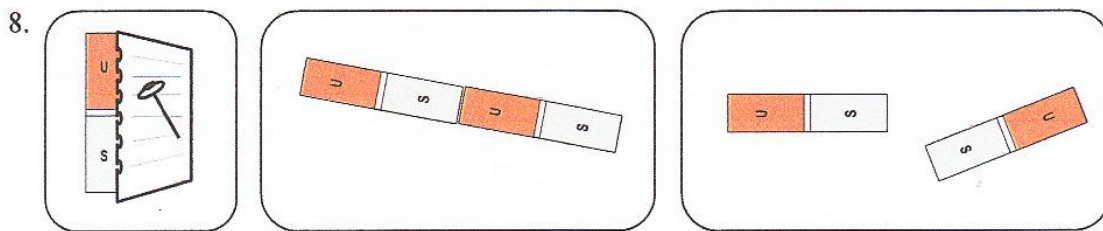
G e s . . e k . .

7.



Di pelabuhan, barang-barang besi diambil oleh suatu alat yang dapat menempel pada besi kemudian ditata pada tempat yang telah disiapkan. Alat untuk mengangkat barang-barang tersebut memanfaatkan gaya?

M a g n e t .

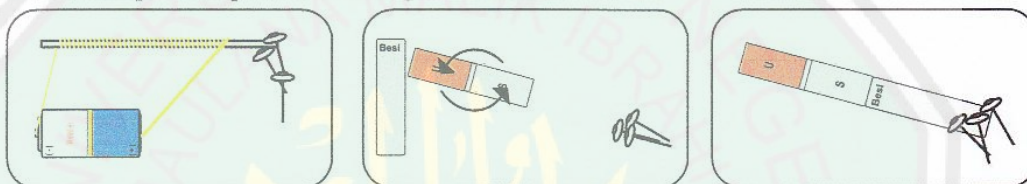


Berdasarkan gambar tersebut, terdapat beberapa ciri magnet.

Berilah tanda cek (v) dalam lingkaran kuning yang menyatakan ciri-ciri magnet!

- Magnet memiliki dua kutub, yaitu kutub utara dan kutub selatan
- Gaya magnet dapat menembus benda-benda tipis
- Kutub utara didekatkan dengan kutub selatan magnet, maka akan saling tarik-menarik
- Kutub utara didekatkan dengan kutub utara magnet, maka akan saling tolak-menolak

9. Perhatikan praktek pembuatan magnet berikut!



Gambar-gambar tersebut merupakan cara-cara pembuatan magnet!

a. Pembuatan magnet dengan cara menggosokkan bahan dari besi atau baja dengan magnet secara searah dinamakan pembuatan magnet secara?

G. o s o k a n .....

b. Pembuatan magnet dengan cara mengalirkan arus listrik pada bahan dari besi atau baja dinamakan pembuatan magnet secara?

E. l e k t r o n i k .. Elektro magnetik

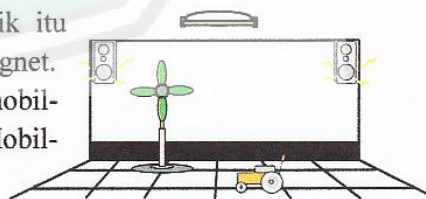
c. Pembuatan magnet dengan cara menempelkan bahan dari besi atau baja dengan magnet dinamakan pembuatan magnet secara?

I. n d u s t r i .. Induksi

10. Kita mengetahui manfaat adanya suatu gaya, baik itu gaya gravitasi bumi, gaya gesek atau gaya magnet.

Dalam peralatan rumah tangga kita menjumpai mobil-mobilan, kipas angin bahkan sound atau speaker. Mobil-mobilan rodanya dapat berputar dengan memanfaatkan energi listrik ke energi gerak begitu juga kipas angin. Sound atau speaker dapat mengubah energi listrik ke energi bunyi. Alat-alat tersebut memanfaatkan gaya?

M. a g n e t .....



Selamat Belajar ☺

# QUIZ SAINS GAYA

lilik  
Miftah

## Kuis Sains Materi Gaya Kelas 5 SD/MI

### PETUNJUK MENERJAKAN:

1. Mulailah mengerjakan dengan berdoa
2. Kerjakan secara berkelompok
3. Tulis nama anggota kelompok, tulis kelas dan tulis waktu saat awal mulai mengerjakan serta tulis waktu saat selesai mengerjakan
4. Kerjakan dengan waktu yang secepat mungkin, semakin cepat waktunya, semakin bagus nilainya
5. Selamat mengerjakan 😊

Kelas : VB

Nama anggota kelompok :

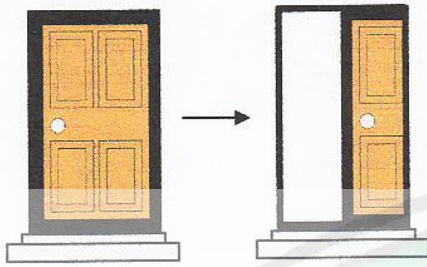
1. Yuna Rahmawati Zain
2. Utiy amilatul Khoir
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_

Waktu mulai : jam . setengah seperuluh

Waktu selesai : jam . Kerjakan secepatnya

Jawablah pertanyaan berikut dengan tepat!

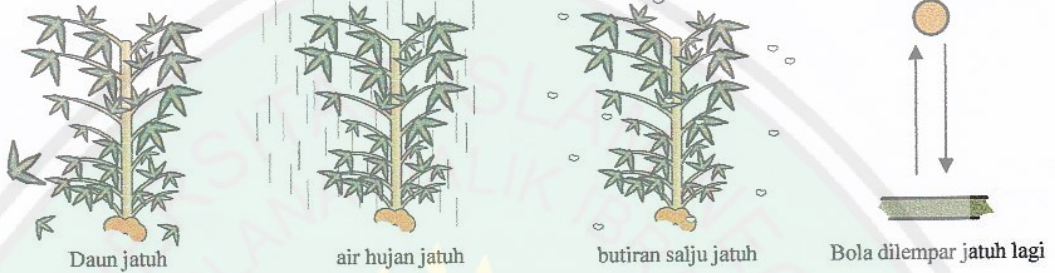
1.



Pada saat membuka dan menutup pintu, kita melakukan tarikan dan dorongan pada pintu itu. Kegiatan menarik dan mendorong tersebut, dinamakan!

G a y a

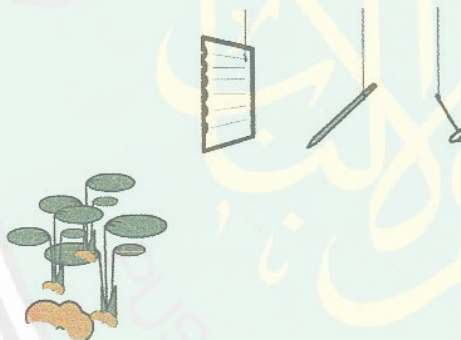
2.



Pada gambar tersebut menandakan adanya pengaruh gaya?

G r a v i t a s

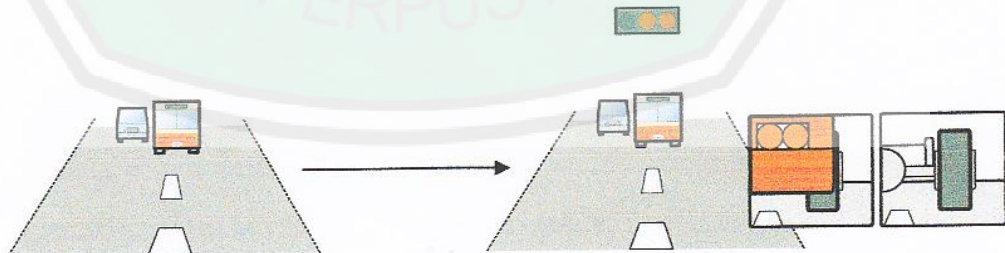
3.



Terdapat selembar kertas, pensil dan paku. Ketiga benda tersebut dijatuhkan secara bersamaan dan pada ketinggian yang sama. Maka urutan pertama, kedua dan terakhir benda yang menyentuh tanah adalah?

1. paku
2. pensil
3. kertas

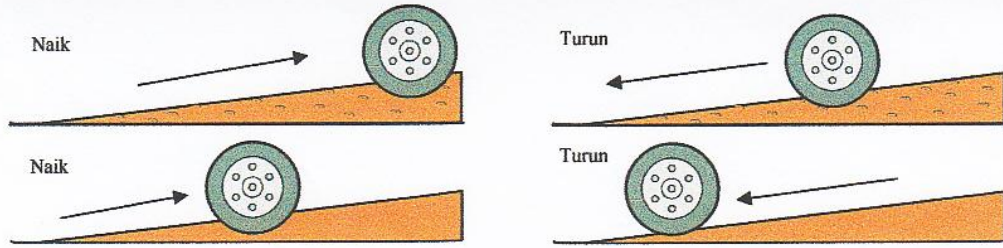
4.



Mobil yang melaju dengan cepat, tiba-tiba didepannya ada lampu lalu lintas yang menyala merah. Seketika mobil itu direm sehingga mobil pun berhenti dan menunggu lampu hijau menyala. Pada saat sopir mengerem ban mobil, terjadi gaya?

G e s e k

5.



Berdasarkan gambar tersebut terdapat perbedaan kecepatan antara roda yang menggelinding pada permukaan tanah yang kasar dengan halus.

Berilah tanda cek (v) dalam lingkaran kuning pada pernyataan yang benar berdasarkan gambar tersebut!

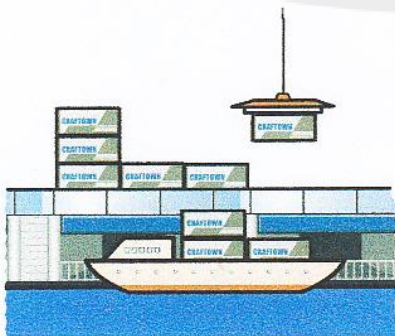
- Pada saat roda menggelinding turun pada permukaan tanah yang kasar akan lebih cepat dibandingkan pada permukaan tanah yang halus
- Pada saat roda menggelinding turun pada permukaan tanah yang kasar akan lebih lambat dibandingkan pada permukaan tanah yang halus
- Pada saat roda menggelinding naik pada permukaan tanah yang kasar akan lebih cepat dibandingkan pada permukaan tanah yang halus
- Pada saat roda menggelinding naik pada permukaan tanah yang kasar akan lebih lambat dibandingkan pada permukaan tanah yang halus

6. Para pengrajin peralatan untuk membuat perabotan rumah tangga atau peralatan sekolah seperti kursi, gunting, sendok dan pensil. Benda-benda tersebut dibentuk dan dihaluskan terlebih dahulu, agar pada saat dipakai benda tersebut tidak melukai bagi orang yang menggunakannya dan dapat berfungsi dengan baik. Para pengrajin itu memanfaatkan gaya?



G e s e k

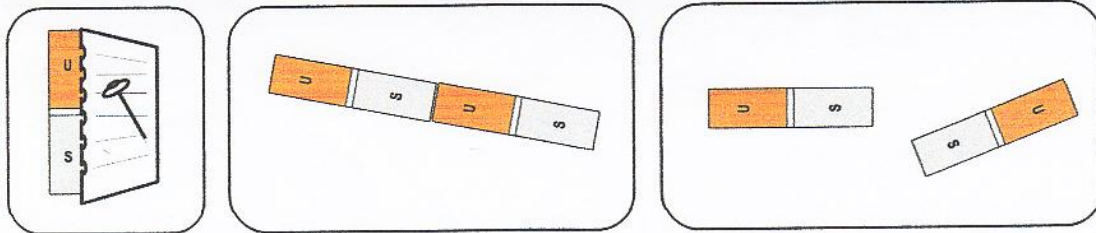
7.



Di pelabuhan, barang-barang besi diambil oleh suatu alat yang dapat menempel pada besi kemudian ditata pada tempat yang telah disiapkan. Alat untuk mengangkat barang-barang tersebut memanfaatkan gaya?

M a g n e t

8.

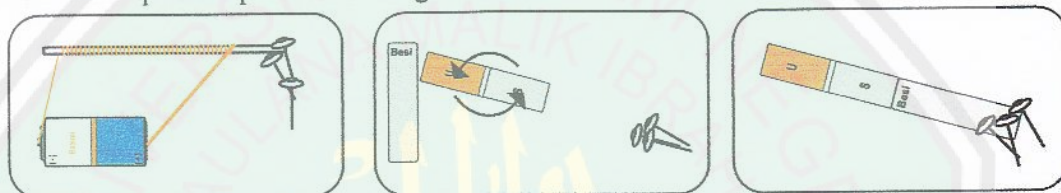


Berdasarkan gambar tersebut, terdapat beberapa ciri magnet.

Berilah tanda cek (v) dalam lingkaran kuning yang menyatakan ciri-ciri magnet!

- Magnet memiliki dua kutub, yaitu kutub utara dan kutub selatan
- Gaya magnet dapat menembus benda-benda tipis
- Kutub utara didekatkan dengan kutub selatan magnet, maka akan saling tarik-menarik
- Kutub utara didekatkan dengan kutub utara magnet, maka akan saling tolak-menolak

9. Perhatikan praktek pembuatan magnet berikut!



Gambar-gambar tersebut merupakan cara-cara pembuatan magnet!

a. Pembuatan magnet dengan cara menggosokkan bahan dari besi atau baja dengan magnet secara searah dinamakan pembuatan magnet secara?

G. a. s. o. k. a. n

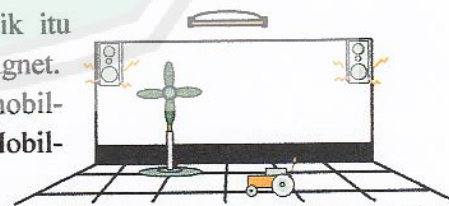
b. Pembuatan magnet dengan cara mengalirkan arus listrik pada bahan dari besi atau baja dinamakan pembuatan magnet secara?

E. l. e. k. t. r. o. m. a. g. n. e. t

c. Pembuatan magnet dengan cara menempelkan bahan dari besi atau baja dengan magnet dinamakan pembuatan magnet secara?

I. n. d. u. s. t. r. i

10. Kita mengetahui manfaat adanya suatu gaya, baik itu gaya gravitasi bumi, gaya gesek atau gaya magnet. Dalam peralatan rumah tangga kita menjumpai mobil-mobilan, kipas angin bahkan sound atau speaker. Mobil-mobilan rodanya dapat berputar dengan



memanfaatkan energi listrik ke energi gerak begitu juga kipas angin. Sound atau speaker dapat mengubah energi listrik ke energi bunyi. Alat-alat tersebut memanfaatkan gaya?

M. a. g. n. e. t

Selamat Belajar ☺

# QUIZ SAINS GAYA

## Kuis Sains Materi Gaya Kelas 5 SD/MI

### PETUNJUK MENERJAKAN:

1. Mulailah mengerjakan dengan berdoa
2. Kerjakan secara berkelompok
3. Tulis nama anggota kelompok, tulis kelas dan tulis waktu saat awal mulai mengerjakan serta tulis waktu saat selesai mengerjakan
4. Kerjakan dengan waktu yang secepat mungkin, semakin cepat waktunya, semakin bagus nilainya
5. Selamat mengerjakan 😊

Kelas : Sc

Nama anggota kelompok :

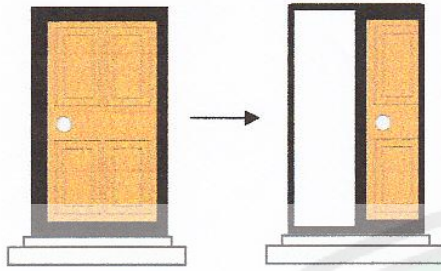
1. Alfi Husayniah
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_
6. \_\_\_\_\_
7. \_\_\_\_\_

Waktu mulai : jam .....

Waktu selesai : jam .....

Jawablah pertanyaan berikut dengan tepat!

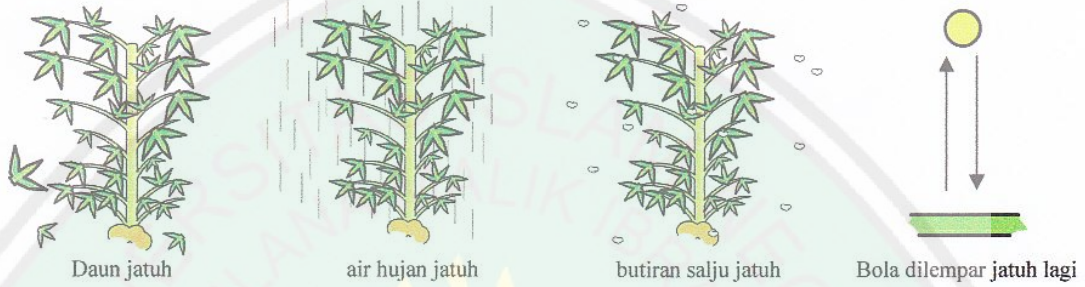
1.



Pada saat membuka dan menutup pintu, kita melakukan tarikan dan dorongan pada pintu itu. Kegiatan menarik dan mendorong tersebut, dinamakan!

G A . . . A .

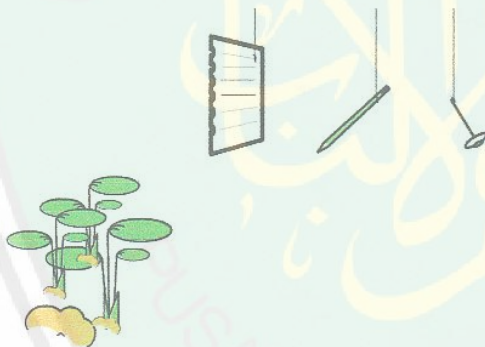
2.



Pada gambar tersebut menandakan adanya pengaruh gaya?

G R . A . . . . . I . . . . . T A . S . . .

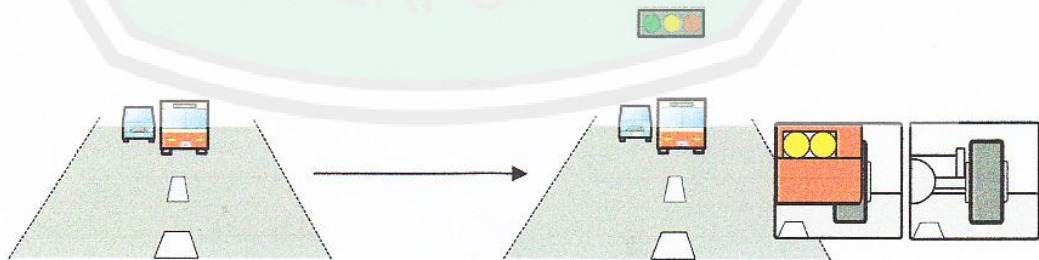
3.



Terdapat selembar kertas, pensil dan paku. Ketiga benda tersebut dijatuhkan secara bersamaan dan pada ketinggian yang sama. Maka urutan pertama, kedua dan terakhir benda yang menyentuh tanah adalah?

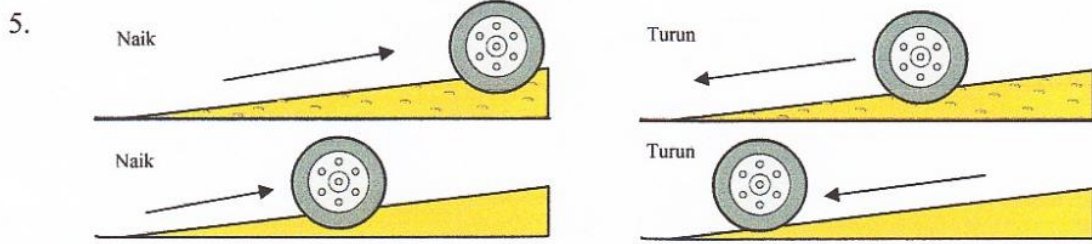
1. Paku.....
2. Pensil.....
3. Selembar...Kertas.....

4.



Mobil yang melaju dengan cepat, tiba-tiba didepannya ada lampu lalu lintas yang menyala merah. Seketika mobil itu direm sehingga mobil pun berhenti dan menunggu lampu hijau menyala. Pada saat sopir mengerem ban mobil, terjadi gaya?

G E . . . E . . . K . .



Berdasarkan gambar tersebut terdapat perbedaan kecepatan antara roda yang menggelinding pada permukaan tanah yang kasar dengan halus.

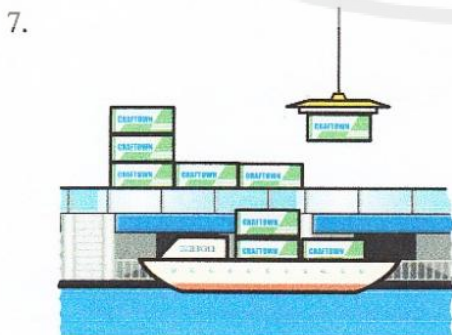
**Berilah tanda cek (v) dalam lingkaran kuning pada pernyataan yang benar berdasarkan gambar tersebut!**

- Pada saat roda menggelinding turun pada permukaan tanah yang kasar akan lebih cepat dibandingkan pada permukaan tanah yang halus
- Pada saat roda menggelinding turun pada permukaan tanah yang kasar akan lebih lambat dibandingkan pada permukaan tanah yang halus
- Pada saat roda menggelinding naik pada permukaan tanah yang kasar akan lebih cepat dibandingkan pada permukaan tanah yang halus
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6. Para pengrajin peralatan untuk membuat perabotan rumah tangga atau peralatan sekolah seperti kursi, gunting, sendok dan pensil. Benda-benda tersebut dibentuk dan dihaluskan terlebih dahulu, agar pada saat dipakai benda tersebut tidak melukai bagi orang yang menggunakannya dan dapat berfungsi dengan baik. Para pengrajin itu memanfaatkan gaya?

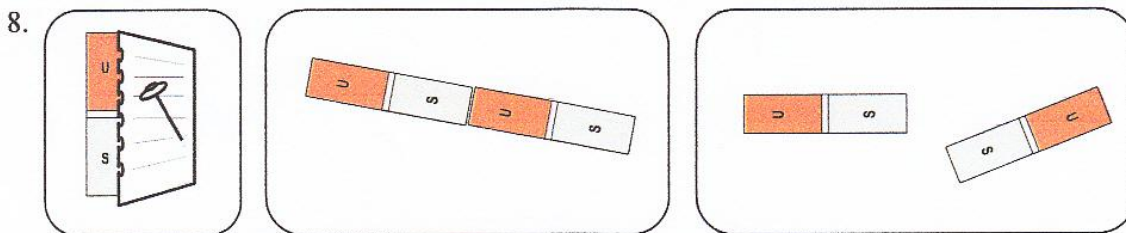


G E . S E . K .



Di pelabuhan, barang-barang besi diambil oleh suatu alat yang dapat menempel pada besi kemudian ditata pada tempat yang telah disiapkan. Alat untuk mengangkat barang-barang tersebut memanfaatkan gaya?

M A . G N E . T .

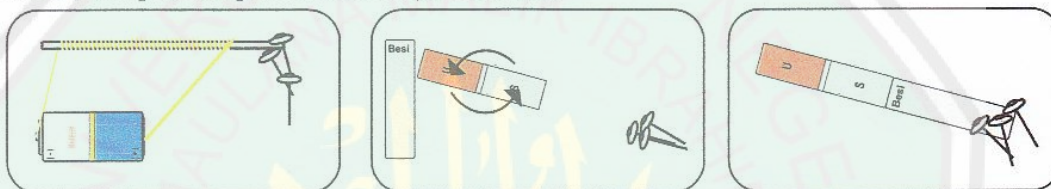


Berdasarkan gambar tersebut, terdapat beberapa ciri magnet.

Berilah tanda cek (v) dalam lingkaran kuning yang menyatakan ciri-ciri magnet!

- Magnet memiliki dua kutub, yaitu kutub utara dan kutub selatan
- Gaya magnet dapat menembus benda-benda tipis
- Kutub utara didekatkan dengan kutub selatan magnet, maka akan saling tarik-menarik
- Kutub utara didekatkan dengan kutub utara magnet, maka akan saling tolak-menolak

9. Perhatikan praktek pembuatan magnet berikut!



Gambar-gambar tersebut merupakan cara-cara pembuatan magnet!

a. Pembuatan magnet dengan cara menggosokkan bahan dari besi atau baja dengan magnet secara searah dinamakan pembuatan magnet secara?

Gosokan.....

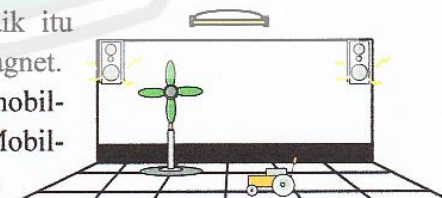
b. Pembuatan magnet dengan cara mengalirkan arus listrik pada bahan dari besi atau baja dinamakan pembuatan magnet secara?

Elektromagnet.....

c. Pembuatan magnet dengan cara menempelkan bahan dari besi atau baja dengan magnet dinamakan pembuatan magnet secara?

Induksi.....

10. Kita mengetahui manfaat adanya suatu gaya, baik itu gaya gravitasi bumi, gaya gesek atau gaya magnet. Dalam peralatan rumah tangga kita menjumpai mobil-mobilan, kipas angin bahkan sound atau speaker. Mobil-mobilan rodanya dapat berputar dengan memanfaatkan energi listrik ke energi gerak begitu juga kipas angin. Sound atau speaker dapat mengubah energi listrik ke energi bunyi. Alat-alat tersebut memanfaatkan gaya?



Magnet.....

Selamat Belajar ☺

# Membuat magnet dengan aliran arus listrik (Elektromagnet)

**Sediakan alat dan bahannya sebagai berikut:**

1. Paku
2. Lilitan tembaga (kabel)
3. Klip kertas
4. Baterai

**Pembuatan:**

Rangkailah alat dan bahan tersebut seperti gambar berikut:



Setelah kalian merangkai alat dan bahan seperti gambar tersebut, coba sekarang arahkan ujung paku pada klip kertas. Apa yang terjadi?

**Selamat Belajar!** 😊





**ULANGAN HARIAN IPA**  
**MADRASAH IBTIDAIYAH NEGERI REJOSO**  
**TAHUN PELAJARAN 2012/2013**

Nama : .....	Hari/Tanggal : .....
Materi : .....	Kelas : .....

**Jawablah pertanyaan-pertanyaan berikut dengan singkat dan jelas!**

1. Sebutkan 7 benda yang bersifat magnetis! *Contoh: jarum*

.....  
.....

2. Sebutkan 7 peralatan rumah tangga yang memanfaatkan gaya magnet! *Contoh: kipas angin*

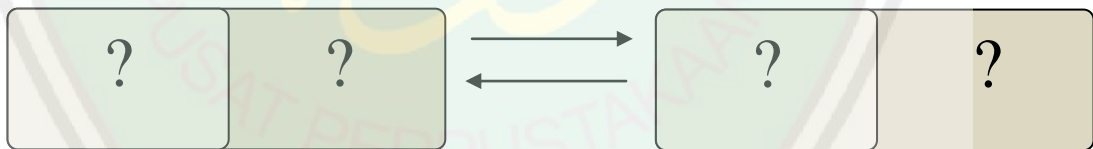
.....  
.....

3. Sebutkan 7 aktivitas yang menerapkan gaya gesek! *Contoh: mengerem sepeda*

.....  
.....

4. Jika *magnet A* dan *magnet B* saling tarik-menarik, maka tentukan kutub utara dan kutub selatan magnet!

Perhatikan gambar berikut:



Magnet A

Magnet B

5. Jelaskan cara pembuatan elektromagnet (*magnet yang dialiri dengan arus listrik*)!

.....  
.....

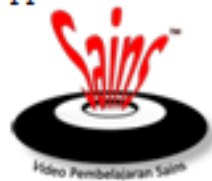
6. Sebutkan 3 manfaat penggunaan gaya gesek!

.....  
.....

7. Sebutkan 3 manfaat penggunaan gaya magnet!

.....  
.....

**Selamat Mengerjakan ☺**



## VIDEO STORYBOARD

### DEVELOPING LEARNING SCIENCES VIDEO

#### TOPIC OF FORCE FOR 5<sup>th</sup> GRADE STUDENTS ELEMENTARY SCHOOL

Tampilan Menu Utama:

Menu untuk menampilkan kumpulan video pembelajaran tentang "gaya".

Menu untuk menampilkan "quiz interaktif".

Menu untuk menampilkan video "cara penggunaan media".

Silahkan pilih salah satu menu yang telah disediakan!

MENU VIDEO PEMBELAJARAN

Selamat datang di media pembelajaran Sains!

**Tampilan video pembelajaran:** *contoh salah satu tampilan video pembelajaran.*



(menampilkan video pembelajaran tentang cara pembuatan elektromagnet)

Hati-hatiterhadapa benda tajam!

**Elektromagnet**

**Video Pembelajaran Sains**

**Membuat magnet dengan cara mengalirkan arus listrik**

The screenshot shows a video player window with a close button (X) in the top right corner. The main content area contains a large, faint watermark of the Maulana Malik Ibrahim State Islamic University of Malang logo. Below the video area, there is a red bar with the text 'Video Pembelajaran Sains' and a blue bar with the text 'Membuat magnet dengan cara mengalirkan arus listrik'. A small red circle with a white exclamation mark is positioned above the text 'Hati-hatiterhadapa benda tajam!'.

**Tampilan quiz interaktif:** contoh salah satu tampilan halaman quiz interaktif.

(Soal)

**A** (Pilihan jawaban)

**B** (Pilihan jawaban)

**C** (Pilihan jawaban)

**D** (Pilihan jawaban)

Quiz Interaktif

Selamat Mengerjakan!

Video Pembelajaran Sains

## Skrip Pengisi Suara Video Pembelajaran Sains

Materi Video	Narator
Pengertian Gaya	"...Pada video pembelajaran ini, kita akan mempelajari apa yang dimaksud dengan gaya. Dalam kehidupan sehari-hari secara tidak sadar, kita mendapati kegiatan yang berhubungan dengan gaya. Pada saat kita membuka atau menutup pintu kita telah melakukan gaya yang berupa dorongan dan tarikan. Gerakan mendorong atau menarik yang menyebabkan benda bergerak disebut gaya. Gaya mengakibatkan suatu benda dapat bergerak, berubah bentuk, dan berubah arah..."
Pengertian Gaya Gravitasi	"...Pada video pembelajaran ini, kita akan mempelajari apa itu gaya gravitasi bumi. Pernahkah kamu melihat air yang mengalir, air mengalir dari tempat yang tinggi ke tempat yang lebih rendah. Tidak hanya air yang mengalir, Penerjun payung yang keluar dari pesawat juga akan jatuh ke bawah menuju bumi. Gerak jatuhnya benda-benda dipengaruhi oleh gaya gravitasi bumi. Nah, gaya gravitasi bumi merupakan gaya tarik bumi yang menyebabkan benda yang ada di bumi tertarik ke bawah..."
Pengaruh gaya gravitasi bumi	"...Pada video pembelajaran ini, kita akan mempelajari tentang pengaruh gaya gravitasi terhadap suatu benda. Sekarang kita akan mencoba menjatuhkan bola, ternyata bola tersebut jatuh ke bawah. Nah, selanjutnya kita akan menggelindingkan sebuah bola dari atas, ternyata bola tersebut menggelinding menuju ke bawah. Kita akan mencoba lagi melemparkan bola ke atas. Bola yang kita lempar ke atas akan jatuh lagi ke bawah. Nah, gaya gravitasi menyebabkan benda bergerak ke bawah..."
Perbandingan gerak cepat jatuh benda	"...Pada video pembelajaran ini, kita akan mempelajari perbandingan gerak cepat jatuh benda akibat gaya gravitasi bumi. Kita akan mencoba membandingkan gerak cepat jatuh selembar kertas dengan sebuah bola. Kedua benda tersebut akan dijatuhkan pada ketinggian yang sama. Ternyata sebuah bola lebih cepat jatuhnya dari pada selembar kertas. Nah, perbandingan gerak cepat benda akibat gaya gravitasi bumi dipengaruhi oleh ukuran dan bentuk benda tersebut..."
Jika tidak ada gaya gravitasi di Bumi	"...Pada video pembelajaran ini, kita akan mengetahui seandainya tidak ada gaya gravitasi di Bumi. Apa yang akan terjadi apabila tidak ada gaya gravitasi di bumi? kamu mungkin pernah melihat film mengenai astronot yang ada di bulan. Astronot tersebut dapat melayang-layang di bulan karena gaya gravitasi di bulan sangat kecil. Hal yang sama akan terjadi pada benda-benda yang ada di bumi apabila gaya gravitasi tidak ada, kita akan melayang-layang di udara tanpa bisa menyentuh tanah..."

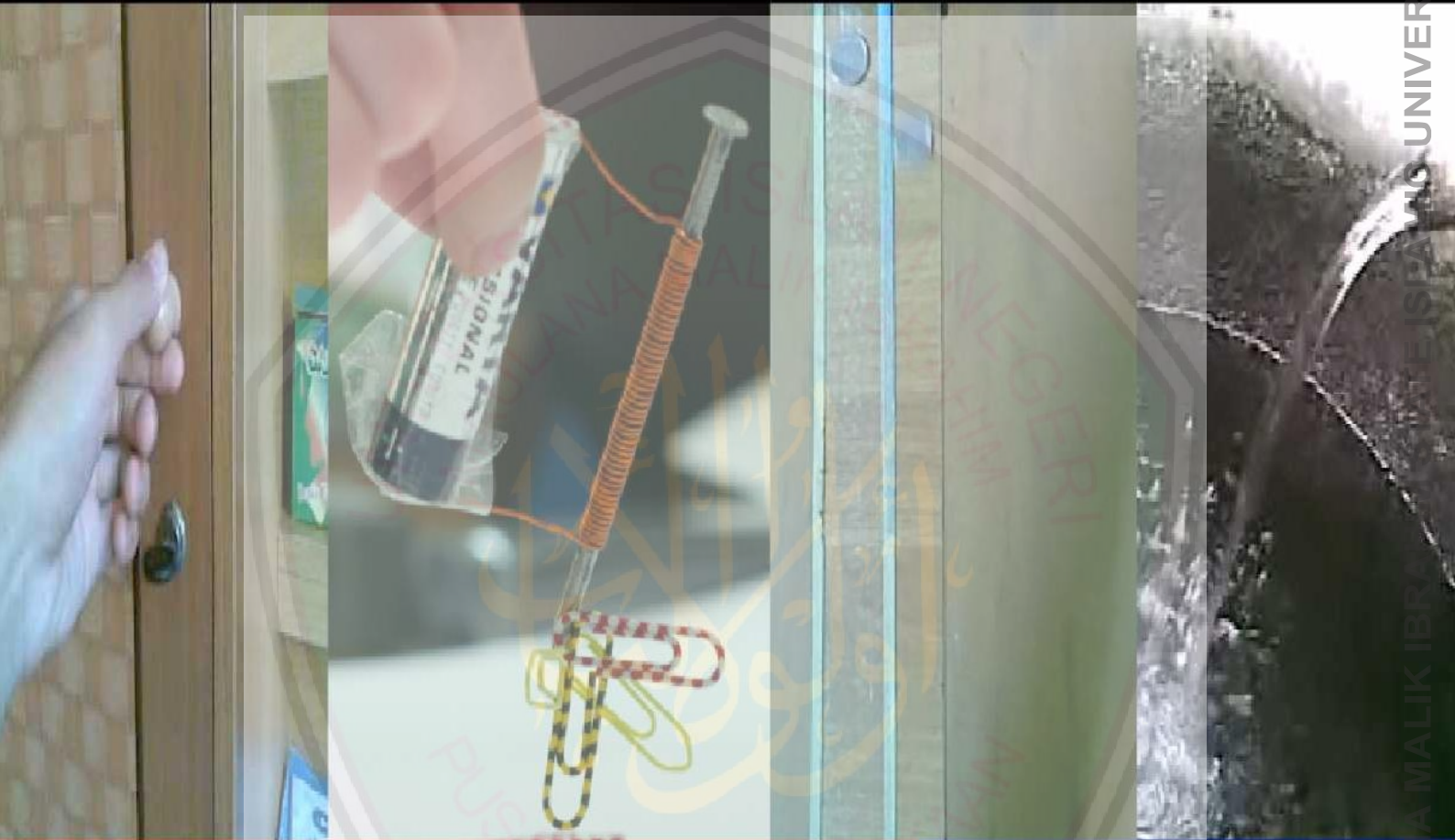
<p>Meteor jatuh akibat gaya gravitasi bumi</p>	<p>"...Pada video pembelajaran ini, kita akan melihat meteor yang jatuh ke bumi akibat gaya gravitasi di bumi. Bumi mempunyai massa yang sangat besar menghasilkan gaya gravitasi yang sangat besar untuk menarik benda-benda di sekitarnya, termasuk benda-benda yang ada di bumi. Gaya gravitasi ini juga menarik benda-benda yang ada di luar angkasa seperti meteor, satelit buatan manusia, atau bulan..."</p>
<p>Pengertian gaya gesek</p>	<p>"...Pada video pembelajaran ini, kita akan mengetahui apa yang dimaksud dengan gaya gesek. Sebelumnya, kalian sudah pernah melihat mobil yang melintas di jalan? Ban mobil dengan jalan saling bergesekan, sehingga mobil bisa berjalan. Nah, gaya gesek merupakan gaya yang menimbulkan hambatan ketika dua permukaan benda saling bersentuhan..."</p>
<p>Perbandingan gaya gesek benda antara permukaan yang halus dengan kasar</p>	<p>"...Pada video pembelajaran ini, kita akan mempelajari perbandingan gaya gesek benda pada permukaan yang halus dan kasar. Kita akan meluncurkan dua koin yang sama, tetapi koin yang satu ditempatkan pada permukaan papan yang halus, dan koin kedua kita letakkan pada papan yang permukaannya kasar. Kita akan membandingkan cepat gerak koin pada permukaan papan yang halus dan kasar. Setelah kita meluncurkan kedua koin itu secara bersamaan, ternyata koin pada permukaan papan yang halus lebih cepat dari pada koin pada permukaan yang kasar. Nah, berarti semakin halus permukaan benda, maka semakin kecil gaya gesek yang ditimbulkan, begitu juga sebaliknya..."</p>
<p>Memperbesar dan memperkecil gaya gesek</p>	<p>"...Pada video pembelajaran ini, kita akan mempelajari cara memperkecil dan memperbesar gaya gesek. Kalian tentunya sudah pernah melihat sepatu bola. Pada sepatu bola terdapat pul, pul ini berfungsi untuk memperbesar gaya gesekan, sehingga pemain bola tidak akan mudah terpelesepada saat menggiring bola. Begitu juga dengan permukaan ban sepeda. Pada permukaan ban sepeda dibuat kasar dengan tujuan agar sepeda tidak mudah tergelincir pada saat dipakai di jalan. Nah, itu caranya memperbesar gaya gesekan. Sedangkan cara untuk memperkecil gaya gesek, misalnya pemberian pelumas atau oli pada roda sepeda atau mesin mobil, sehingga mesin mobil atau roda sepeda dapat berfungsi dengan baik. Nah, itulah caranya memperbesar dan memperkecil gaya gesek..."</p>
<p>Pemanfaatan gaya gesek</p>	<p>"...Pada video pembelajaran ini, kita akan mempelajari pemanfaatan gaya gesek dalam kehidupan sehari-hari. Kalian tentunya sudah mengenal rem sepeda. Rem sepeda memanfaatkan gaya gesek, yaitu pada saat akan mengerem roda sepeda, terjadi gesekan antara kampas rem sepeda dengan peleg sepeda. Sehingga roda pun berhenti. Nah, itulah salah satu contoh pemanfaatan gaya gesek dalam kehidupan sehari-hari..."</p>

<p>Macam-macam bentuk magnet</p>	<p>"...Pada video pembelajaran ini, kita akan mengenal berbagai macam bentuk magnet buatan. Berdasarkan cara terbentuknya, magnet dibedakan menjadi dua macam, yaitu magnet alam dan magnet buatan. Magnet alam terjadi secara alami, contohnya magnet bumi. Magnet buatan merupakan magnet yang sengaja dibuat. Ada beberapa bentuk magnet buatan, misalnya magnet batang, tabung (silinder), jarum, huruf U, dan magnet berbentuk ladam (tapal kuda). Nah, itulah beberapa macam bentuk magnet..."</p>
<p>Benda magnetis dan non-magnetis</p>	<p>"...Pada video pembelajaran ini, kita akan mengetahui benda yang dapat ditarik oleh magnet dan benda yang tidak dapat ditarik oleh magnet. Terdapat dua jenis benda berdasarkan mudah tidaknya tertarik oleh magnet. Bahan dari besi atau baja dapat ditarik magnet. Bahan dari plastik dan kayu tidak dapat ditarik magnet. Nah, jadi magnet dapat menarik benda-benda yang terbuat dari besi atau baja..."</p>
<p>Pola garis gaya magnet</p>	<p>"...Pada video pembelajaran ini, kita akan melihat pola garis gaya magnet yang terbentuk oleh serbuk besi yang ditaburkan di atas kertas yang di bawahnya terdapat magnet. Kekuatan gaya tarik magnet tidaklah merata di seluruh bagiannya. Pada saat batang magnet diletakkan di bawah kertas HVS yang terdapat serbuk besi maka serbuk besi akan membentuk pola-pola garis yang disebut garis gaya magnet. Coba perhatikan garis gaya magnet dan pola garis yang dibentuk oleh serbuk besi seperti tampak pada gambar tersebut. Daerah yang dilingkupi oleh garis gaya magnet merupakan medan magnet. Pada gambar tampak serbuk besi banyak berkumpul di ujung-ujung magnet. Ujung-ujung magnet disebut juga kutub magnet. Nah, pada bagian inilah magnet memiliki kekuatan terbesar dibandingkan bagian magnet lainnya..."</p>
<p>Tarik-menarik dan tolak-menolak pada kutub-kutub magnet</p>	<p>"...Pada video pembelajaran ini, kita akan mengetahui sifat-sifat kutub magnet. Kita akan mencoba mendekatkan dua magnet batang. Kita mencoba mendekatkan kedua kutub selatan magnet. Maka magnet tersebut akan saling tolak-menolak. Sekarang kita akan mencoba mendekatkan kutub utara dengan kutub selatan. Ternyata kedua magnet tersebut saling tarik-menarik. Nah, jadi apabila kutub yang senama saling didekatkan, maka magnet akan saling tolak-menolak, tetapi apabila kutub yang tidak senama saling didekatkan, maka kedua magnet tersebut akan saling tarik-menarik..."</p>
<p>Kekuatan gaya magnet dalam menembus benda-benda tipis</p>	<p>"...Pada video pembelajaran ini, kita akan mengetahui kekuatan gaya tarik magnet walaupun terhalang oleh benda. Gaya magnet dapat menembus benda-benda tipis. Coba kita perhatikan video berikut! Nah, magnet dapat menembus benda-benda tipis, misalnya kertas, plastik, kayu tipis. Jadi kekuatan gaya magnet dalam menembus benda-benda tipis dipengaruhi oleh tebal tipisnya benda tersebut. Semakin tipis benda tersebut sebagai penghalang, maka gaya magnet yang menembus/menariknya semakin kuat..."</p>

<p>Membuat magnet dengan cara induksi</p>	<p>"...Pada video pembelajaran ini, kita akan mempelajari cara pembuatan magnet dengan cara induksi. Pembuatan magnet secara induksi sangat mudah dilakukan. Akan tetapi, sifat kemagnetan hasil induksi ini bersifat sementara. Caranya dengan menempelkan benda-benda yang terbuat dari logam (besi atau baja) dengan magnet. Benda yang terbuat dari logam ini akan menjadi bersifat magnet. Namun, jika magnet dilepaskan, sifat kemagnetan benda tersebut juga akan hilang. Nah, itulah cara pembuatan magnet dengan cara induksi..."</p>
<p>Membuat magnet dengan cara gosokan</p>	<p>"...Pada video pembelajaran ini, kita akan mempelajari cara pembuatan magnet dengan cara gosokan, caranya dengan menggosokkan magnet batang besi atau baja, sehingga batang besi atau baja mempunyai sifat kemagnetan dan dapat menarik benda-benda yang terbuat dari besi atau baja, misalnya paku. Pada pembuatan magnet dengan cara gosokkan, semakin lama waktu penggosokan, semakin lama pula sifat kemagnetan bertahan di dalam batang besi atau baja tersebut. Nah, itulah cara pembuatan magnet dengan cara gosokan..."</p>
<p>Membuat magnet dengan cara elektromagnet</p>	<p>"...Pada video pembelajaran ini, kita akan mempelajari cara pembuatan magnet dengan cara elektromagnet. Magnet juga dapat dibuat dengan cara mengalirkan arus listrik searah ke dalam suatu penghantar atau disebut juga dengan elektromagnet. Elektromagnet bersifat sementara. Artinya, jika arus listrik diputus, sifat magnet itu akan hilang. Kita dapat membuat elektromagnet mempunyai kekuatan lebih besar dengan menambah jumlah baterai dan menambah jumlah lilitan. Nah, itulah cara pembuatan magnet dengan cara elektromagnet..."</p>
<p>Pemanfaatan magnet dalam kehidupan sehari-hari</p>	<p>"...Pada video pembelajaran ini, kita akan mengetahui pemanfaatan gaya magnet dalam kehidupan sehari-hari. Gaya tarik magnet banyak digunakan dalam kehidupan sehari-hari. Gaya tarik magnet digunakan pada berbagai macam alat, mulai dari alat yang sederhana hingga alat yang rumit. Magnet digunakan pada alat-alat rumah tangga, contohnya magnet pada lem dinding untuk menggerakkan jarum jam, magnet pada bel listrik untuk menggerakkan pemukul lonceng, magnet pada papan catur agar buah catur tidak mudah terguling, magnet pada kompas sebagai penunjuk arah utara-selatan, magnet pada dinamo sepeda dan generator untuk membangkitkan tenaga listrik, magnet pada kotak tempas pensil untuk menutup kotak pensil secara praktis, magnet pada kipas angin untuk menggerakkan kipas, magnet pada serta alat untuk mengangkat benda-benda dari besi. Nah, itulah pemanfaatan magnet dalam kehidupan sehari-hari..."</p>



## *Video Pembelajaran Sains*



**Materi Bab Gaya**

**Kelas 5**

Media pembelajaran untuk SD/MI

# Daftar Isi

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Sampul	
Daftar Isi .....	vii
Tentang Media.....	1
Tampilan Media.....	2
Cara Penggunaan Media .....	8
Referensi Materi	

# *Jentang Media*

Multimedia pembelajaran ini merupakan media pembelajaran sains yang menyajikan kumpulan video-video tentang materi "**Gaya**".

Pada media ini dilengkapi dengan "**Peta Konsep**" untuk memudahkan siswa dalam memahami materi dan "**Quiz Interaktif**" sebagai latihan untuk mengetahui kemampuan siswa, serta "**Ringkasan Materi**" untuk memudahkan siswa dalam belajar secara singkat.

Semua materi disajikan dalam bentuk video pembelajaran.

## **Penulis:**

Miftah 09140042

Jurusan Pendidikan Guru Madrasah Ibtidaiyah

Fakultas Ilmu Tarbiyah dan Keguruan

Universitas Islam Negeri Maulana Malik Ibrahim Malang

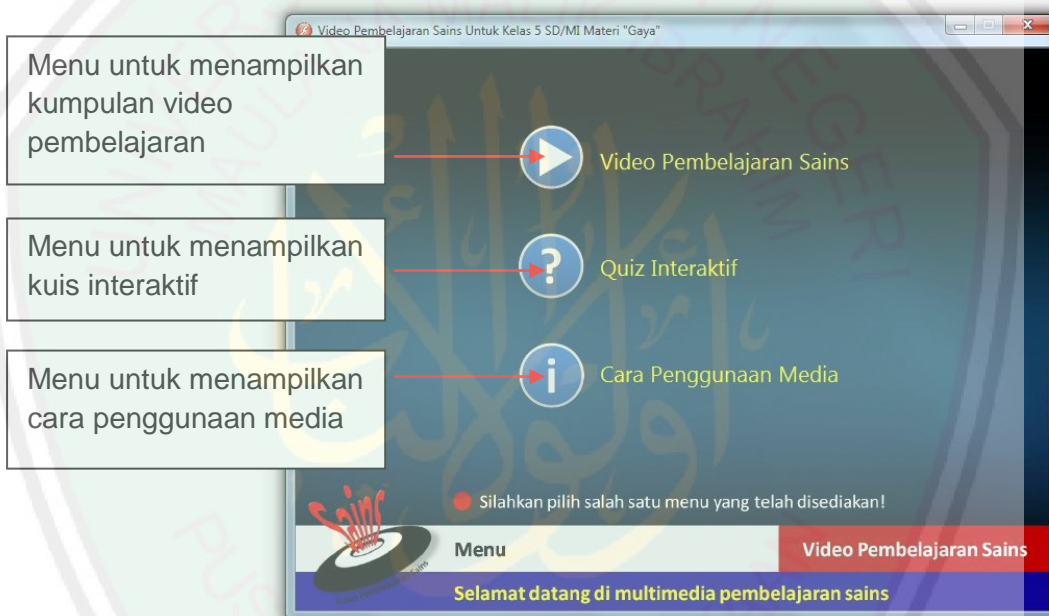
email: [mymmha.seven@facebook.com](mailto:mymmha.seven@facebook.com)

©2013 Miftah Mubaidilla

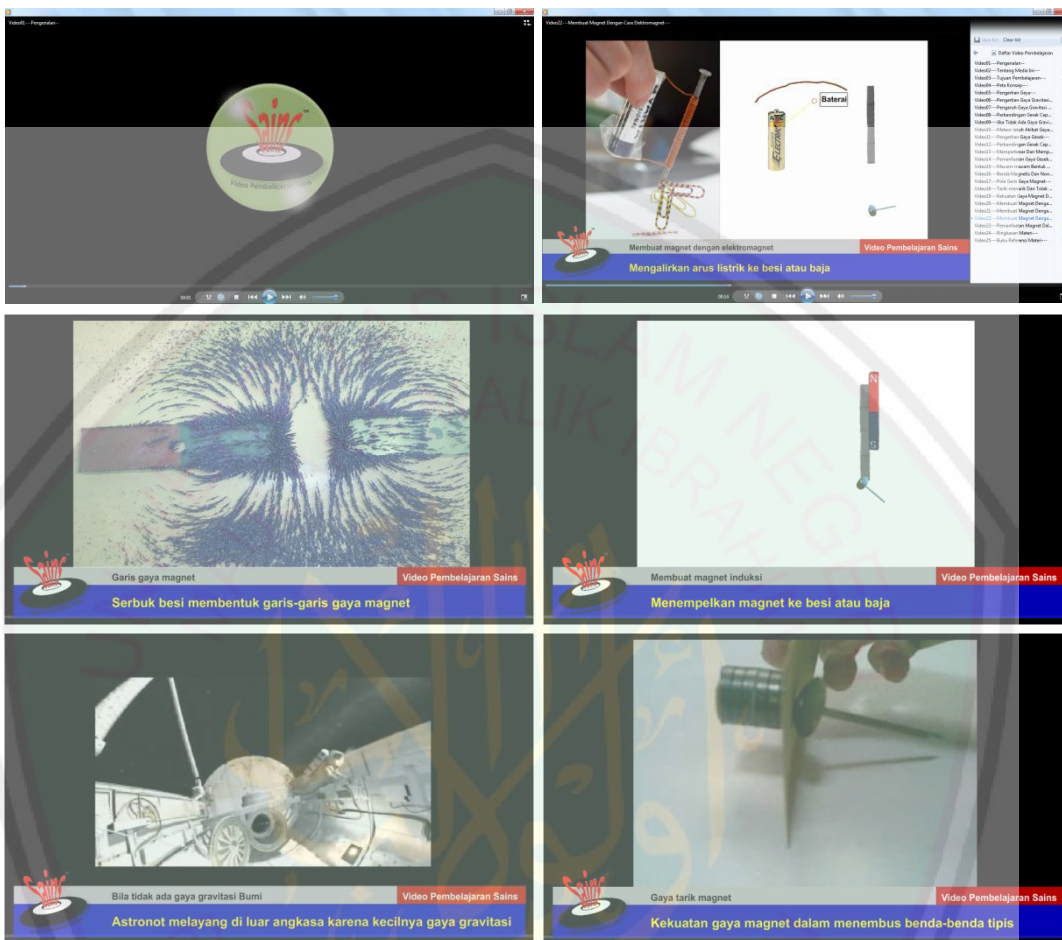
# *Jampilan Media*

Perancangan media yang dirancang sedemikian rupa untuk memudahkan pengguna dalam menggunakan media “Video Pembelajaran Sains”.

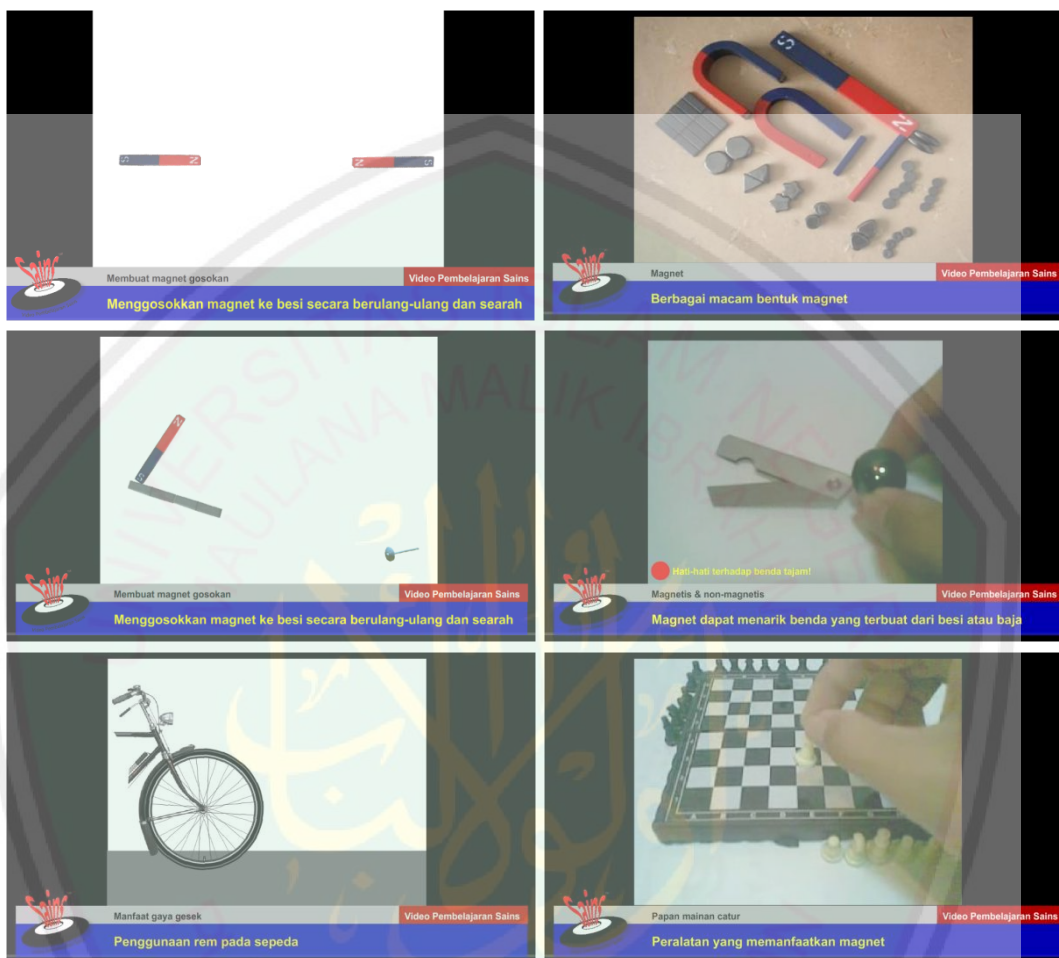
## Tampilan Menu Utama pada media:



**Tampilan Video Pembelajaran:**



**Tampilan Video Pembelajaran:**



**Tampilan Video Pembelajaran:**



## Tampilan Video Pembelajaran:



Multimedia pembelajaran ini merupakan media pembelajaran Sains yang menyajikan kumpulan video-video tentang materi "Gaya".

Pada media ini dilengkapi dengan "Peta Konsep" untuk memudahkan pemahaman siswa tentang materi dan "Quiz Interaktif" sebagai latihan untuk siswa serta "Ringkasan Materi" untuk memudahkan siswa untuk belajar dengan singkat.

Semua materi disajikan dalam format video pembelajaran.

Terima kasih :)

Tentang Media Ini

Multimedia Pembelajaran Interaktif Berbasis Video

Video Pembelajaran Sains

**Gaya gravitasi** adalah gaya tarik bumi terhadap benda-benda yang berada di atasnya. Pengaruh gaya gravitasi terhadap benda semakin kecil jika jarak benda semakin jauh dari pusat bumi.

**Manfaat gaya gravitasi sebagai berikut:**

- Benda-benda di bumi tidak terlempar ke angkasa luar
- Kita dapat berjalan di atas tanah
- Benda-benda di bumi mempunyai berat sehingga tidak melayang-layang di udara

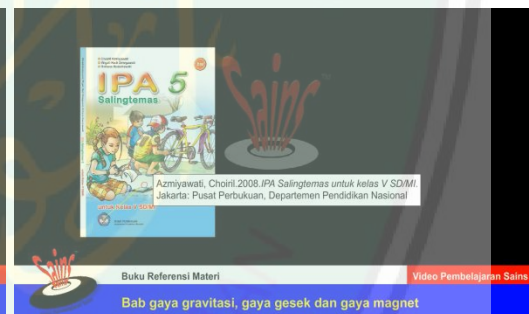
**Gaya gesek** adalah gaya yang menimbulkan hambatan ketika dua permukaan benda saling bersentuhan. Gaya gesek semakin kecil jika permukaan benda semakin halus atau licin

**Manfaat gaya gesek sebagai berikut:**

Ringkasan Materi

Gaya gravitasi, gaya gesek dan gaya magnet

Video Pembelajaran Sains



**Tampilan Quis Interaktif:**



# *Cara Penggunaan Media*

Terdapat beberapa cara yang dapat dilakukan dalam penggunaan media:

## Cara I:

1. Terlebih dahulu masukkan CD pembelajaran ke CDroom pada computer atau laptop
2. Setelah CD dimasukkan akan muncul kotak dialog seperti gambar berikut:



Pada saat muncul kotak dialog seperti gambar tersebut, kemudian klik “Run setup.bat”

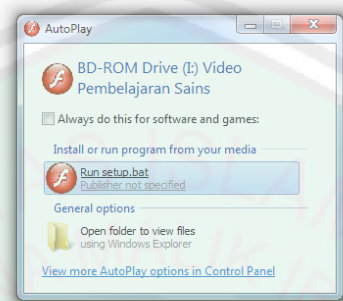
3. Selanjutnya, silahkan tunggu hingga muncul kotak “Menu Media” seperti gambar berikut:



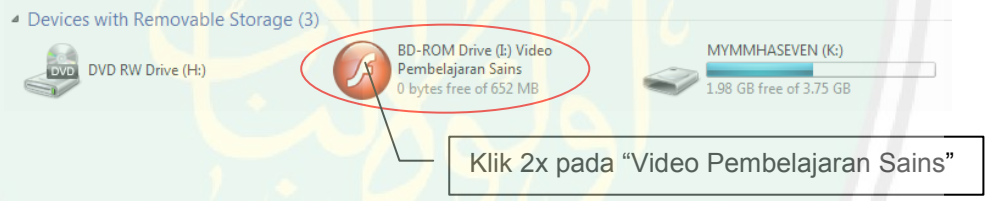
4. Media sudah dapat digunakan, silahkan memilih menu yang telah disediakan
5. Selamat menggunakan media “Video Pembelajaran Sains”.

**Cara II:**

1. Apabila setelah dimasukkan CD pembelajaran ke CDroom pada computer atau laptop *tidak muncul*\* kotak dialog seperti gambar berikut:



Maka, langkah selanjutnya buka “Windows Explorer” dengan cara klik “Start” kemudian klik “Computer”, kemudian akan tampil “icon” media “Video Pembelajaran Sains” seperti gambar berikut:



\* hal itu terjadi karena sistem “AutoPlay” pada laptop/computer dinonaktifkan

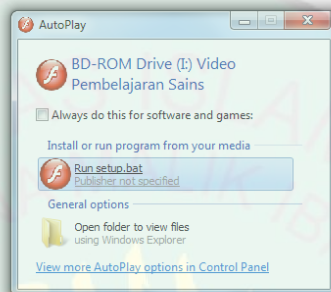
2. Selanjutnya, silahkan tunggu hingga muncul kotak “Menu Media” seperti gambar berikut:



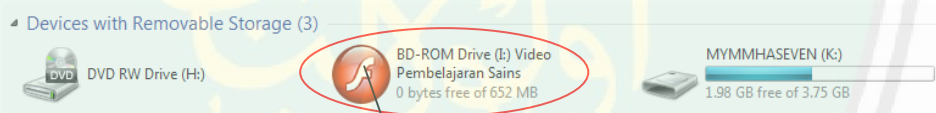
3. Media sudah dapat digunakan, silahkan memilih menu yang telah disediakan. Selamat menggunakan media “Video Pembelajaran Sains”.

**Cara III:**

1. Apabila setelah dimasukkan CD pembelajaran ke CDroom pada computer atau laptop *tidak muncul*\* kotak dialog seperti gambar berikut:



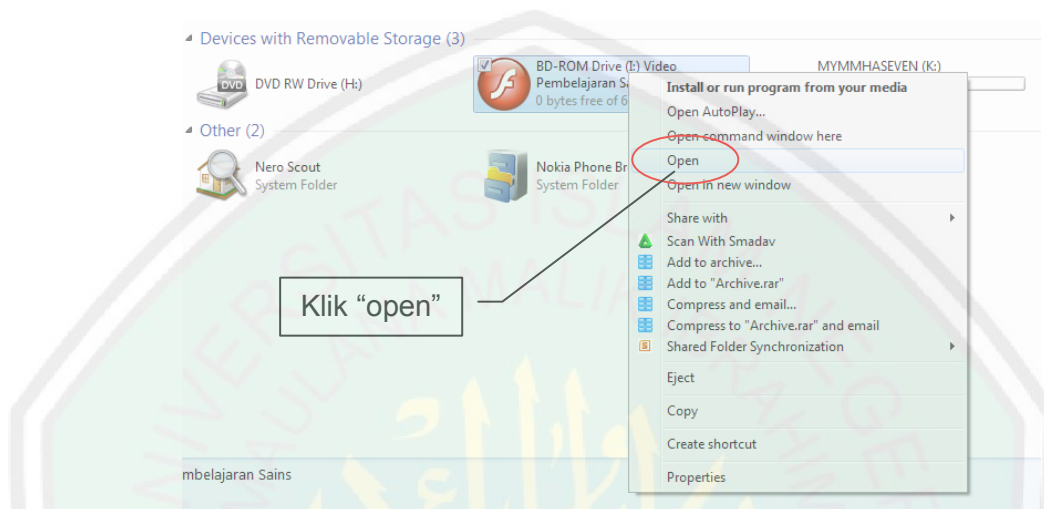
Maka, langkah selanjutnya buka “Windows Explorer” dengan cara klik “Start” kemudian klik “Computer”, kemudian akan tampil “icon” media “Video Pembelajaran Sains” seperti gambar berikut:



Klik kanan pada “Video Pembelajaran Sains”

\* hal itu terjadi karena sistem “AutoPlay” pada laptop/computer dinonaktifkan

2. Kemudian klik kanan pada icon “Video Pembelajaran Sains” selanjutnya klik “Open” seperti gambar berikut:



3. Selanjutnya akan ditampilkan beberapa “file” seperti gambar berikut:



Langkah selanjutnya klik 2x pada file “Video\_Pembelajaran\_Sains.exe”

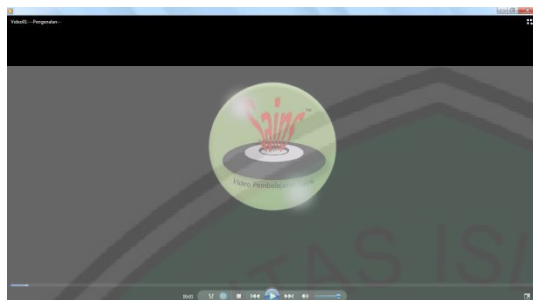
Silahkan tunggu hingga muncul kotak “Menu Media” seperti gambar berikut:




4. Media sudah dapat digunakan, silahkan memilih menu yang telah disediakan
5. Selamat menggunakan media “Video Pembelajaran Sains”.

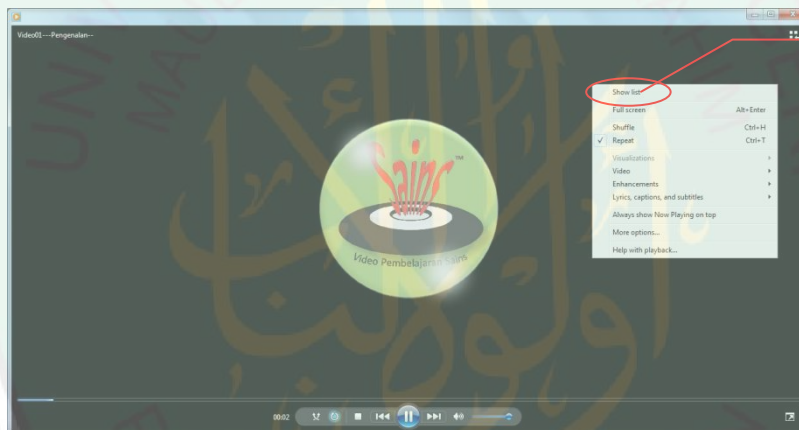
**Cara menampilkan daftar video pembelajaran:**

1. Setelah tampil video pembelajaran seperti gambar berikut:



 Pastikan pemutar video pada laptop atau computer sudah diatur memakai "Windows Media Player".

Kemudian klik kanan pada tengah layar video maka akan muncul kotak dialog seperti gambar berikut:



Klik kanan, kemudian klik "Show list"

Kemudian klik "Show list", maka akan muncul daftar kumpulan video pembelajaran

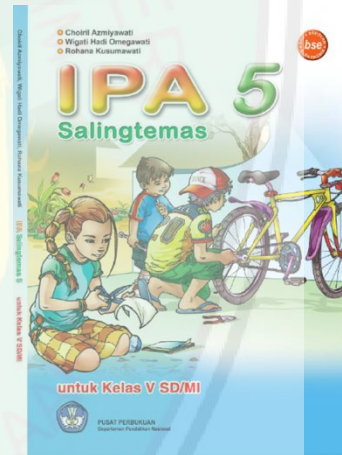


# Buku Referensi Materi



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﴿اقرأ باسم ربك الذي خلق﴾

﴿Sambutlah tangan mereka yang membutuhkan kita﴾

﴿Belajarlh maka kamu akan bisa, membacalah maka kamu akan tahu dan praktekanlah maka kamu akan mahir di dalamnya﴾

﴿Imagination is more important than knowledge﴾

﴿Selalu ucapkan terima kasih kepada siapa yang telah membesarkanmu﴾



Multimedia pembelajaran ini merupakan media pembelajaran sains yang menyajikan kumpulan video-video yang menerangkan tentang materi "**Gaya**".

Pada media ini juga dilengkapi dengan "**Peta Konsep**" untuk memudahkan siswa dalam memahami materi dan "**Quiz Interaktif**" sebagai

Latihan untuk mengetahui kemampuan siswa, serta "**Ringkasan Materi**" untuk memudahkan siswa dalam belajar secara singkat.

Semua materi disajikan dalam bentuk video pembelajaran.



Disarankan pemutar video pada system operasi windows diatur memakai "Windows Media Player".

**Multimedia pembelajaran ini dapat dijalankan pada system operasi windows: Windows Vista, Windows XP, Windows 7 dan Windows 8.**

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