

CONTENTS

| | Page |
|---|------------|
| Sheet of Agreement | <i>i</i> |
| Biography | <i>ii</i> |
| Abstract | <i>iii</i> |
| Preface | <i>iv</i> |
| Contents | <i>vi</i> |
| List of Figure | <i>ix</i> |
| List of Table | <i>x</i> |
| List of Appendix | <i>xi</i> |
| CHAPTER I INTRODUCTION | 1 |
| 1.1. Background | 1 |
| 1.2. Problem Identification | 9 |
| 1.3. Problem Limitation | 10 |
| 1.4. Problem Formulation | 10 |
| 1.5. Research Objectives | 10 |
| 1.6. Benefits of Research | 11 |
| 1.7. Operational Definitions | 11 |
| CHAPTER II LITERATURE REVIEW | 13 |
| 2.1. Mathematical Problems | 13 |
| 2.2. Problem Solving Ability | 14 |
| 2.3. Models of Teaching | 19 |
| 2.3.1. Problem-Based Learning Model | 20 |
| 2.3.2. The Syntax of Problem-Based Learning | 23 |
| 2.3.3. The Advantages and Disadvantages of Problem-Based Learning | 25 |
| 2.3.4. Learning Theory That Support Problem-Based Learning | 25 |
| 2.3.4.1. Piaget's Theory and Constructivism Opinion | 26 |
| 2.3.4.2. Vigotsky's Theory | 26 |
| 2.3.4.3. Jerome Bruner's Theory | 26 |
| 2.3.4.4. David Ausubel's Theory | 27 |
| 2.3.5. Summary of Subject Matter | 27 |
| 2.3.5.1. Definition of Proportion | 27 |
| 2.3.5.2. Directly Proportion | 28 |
| 2.3.5.3. Inversely Proportional | 29 |
| 2.4. Relevant Research | 30 |
| 2.5. Conceptual Framework | 31 |
| 2.6. Action Hypothesis | 32 |

| | |
|---|-----------|
| CHAPTER III RESEARCH METHODOLOGY | 33 |
| 3.1. Type of Research | 33 |
| 3.2. Location and Time of Research | 33 |
| 3.3. Subject and Object of Research | 33 |
| 3.3.1. Subject of Research | 33 |
| 3.3.2. Object of Research | 33 |
| 3.4. Research Procedure | 33 |
| 3.4.1. CYCLE I | 34 |
| 3.4.1.1. Problem I | 34 |
| 3.4.1.2. Action Plan I | 35 |
| 3.4.1.3. Action Implementation I | 35 |
| 3.4.1.4. Observation I | 36 |
| 3.4.1.5. Data Analysis I | 36 |
| 3.4.1.6. Reflection I | 36 |
| 3.4.2. CYCLE II | 37 |
| 3.4.2.1. Action Plan II | 38 |
| 3.4.2.2. Action Implementation II | 38 |
| 3.4.2.3. Observation II | 38 |
| 3.4.2.4. Data Analysis II | 38 |
| 3.4.2.5. Reflection II | 39 |
| 3.5. Instruments of Research | 40 |
| 3.5.1. Initial Capability Test | 40 |
| 3.5.2. Mathematics Problem Solving Ability Test | 41 |
| 3.5.2.1 Scoring Mathematics Problem Solving Ability Test | 42 |
| 3.5.2.2 Validity Students' Mathematics Problem Solving Ability Test | 43 |
| 3.5.3. Observation Sheet | 44 |
| 3.6. Data Analysis Technique | 44 |
| 3.6.1. Data Reduction | 44 |
| 3.6.2. Data Analysis | 45 |
| 3.6.2.1. Data Analysis of Mathematics Problem Solving Ability | 45 |
| 3.6.2.2. Data Analysis of Classical Learning Mastery | 46 |
| 3.6.2.3. Increasing of Students' Mathematical Problem Solving Ability | 47 |
| 3.6.2.4. Analysis Observation of Students' Activity | 48 |
| 3.6.2.5. Analysis Observation of Teacher's Activity | 48 |
| 3.6.3. Get conclusion | 49 |
| 3.7. Indicator of Success in PBL Learning | 49 |

| | |
|---|------------|
| CHAPTER IV RESULT AND DISCUSSION | 51 |
| 4.1. Description of Research Result | 51 |
| 4.1.1 Description of Research Result in Cycle I | 51 |
| 4.1.1.1 Problem I | 51 |
| 4.1.1.2 Action Plan I | 53 |
| 4.1.1.3 Action Implementation I | 54 |
| 4.1.1.4 Observation I | 58 |
| 4.1.1.5 Data Analysis I | 59 |
| 4.1.1.5.1 Data Analysis Problem Solving Ability Test | 59 |
| 4.1.1.5.2 Data Analysis of Student's Activity | 60 |
| 4.1.1.5.3 Data Analysis of Teacher's Activity | 62 |
| 4.1.1.6 Reflection I | 63 |
| 4.1.2 Description of Research Result in Cycle II | 68 |
| 4.1.2.1 Problem II | 68 |
| 4.1.2.2 Action Plan II | 69 |
| 4.1.2.3 Action Implementation II | 69 |
| 4.1.2.4 Observation II | 74 |
| 4.1.2.5 Data Analysis II | 75 |
| 4.1.2.5.1 Data Analysis Problem Solving Ability Test | 75 |
| 4.1.2.5.2 Data Analysis of Student's Activity | 77 |
| 4.1.2.5.3 Data Analysis of Teacher's Activity | 78 |
| 4.1.2.6 Reflection II | 79 |
| 4.1.3 The Increasing of Research Result | 81 |
| 4.1.3.1 Increasing of Problem Solving Ability Test | 82 |
| 4.1.3.2 Increasing Students' Activity In Implementation of Problem Based Learning Model | 83 |
| 4.1.3.3 Increasing Teacher's Activity In Implementation of Problem Based Learning Model | 84 |
| 4.1.4 Research Findings | 85 |
| 4.1.5 Discussion of Research Results | 86 |
| CHAPTER V CONLUSION AND SUGGESTION | 88 |
| 5.1. Conclusion | 88 |
| 5.2. Suggestion | 88 |
| REFERENCE | 91 |
| APPENDIX | 95 |
| DOCUMENTATION | 215 |