

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>xi</i> |
| List of Appendix | <i>xiii</i> |
| CHAPTER I INTRODUCTION | 1 |
| 1.1. Background | 1 |
| 1.2. Problem Identification | 8 |
| 1.3. Problem Limitation | 8 |
| 1.4. Problem Formulation | 9 |
| 1.5. Research Objectives | 9 |
| 1.6. Research Benefits | 10 |
| CHAPTER II LITERATURE REVIEW | 11 |
| 2.1. Theoretical Framework | 11 |
| 2.1.1. Mathematical Problem | 11 |
| 2.1.2. Mathematical Problem Solving | 12 |
| 2.1.3. Mathematical Problem Solving Ability | 16 |
| 2.2. Learning Approach | 16 |
| 2.3. Contextual Teaching and Learning Approach | 17 |
| 2.3.1. Main Components in CTL Approach | 19 |
| 2.3.2. The Strength and Weaknesses of CTL Approach | 22 |
| 2.4. Learning Teory | 23 |
| 2.5. Content Materials | 24 |
| 2.6. Virtual Manipulative | 29 |
| 2.7. Relevant Research | 30 |
| 2.8. Conceptual Framework | 31 |
| 2.9. Action Hypothesis | 34 |
| CHAPTER III RESEARCH METHODOLOGY | 35 |
| 3.1. Type of Research | 35 |
| 3.2. Location and Time of Research | 35 |
| 3.3. Subject and Object of Research | 36 |

| | |
|--|-----------|
| 3.3.1. Subject of Research | 36 |
| 3.3.2. Object of Research | 36 |
| 3.4. Operational Definition | 36 |
| 3.5. Design of Research | 37 |
| 3.6. Procedure | 38 |
| Cycle I | 38 |
| a. Problem I | 38 |
| b. Action Plan I | 38 |
| c. Implementation I | 39 |
| d. Observation I | 40 |
| e. Data Analysis I | 40 |
| f. Reflection I | 40 |
| Cycle II | 41 |
| a. Problem I | 41 |
| b. Action Plan II | 41 |
| c. Implementation II | 41 |
| d. Observation II | 42 |
| e. Data Analysis II | 43 |
| f. Reflection II | 43 |
| 3.7. Instrument of Research | 46 |
| 3.8. Data Analysis Technique | 52 |
| 3.9. Indicators of Success | 57 |
| CHAPTER IV RESEARCH RESULTS AND DISCUSSIONS | 58 |
| 4.1 The Result of Research | 58 |
| 4.1.1 Research Cycle I | 60 |
| A. Problem | 60 |
| B. Action Plan | 61 |
| C. Implementation | 65 |
| D. Data Analysis I | 65 |
| E. Observation | 75 |
| F. Reflection I | 78 |
| 4.1.2 Research Cycle II | 81 |
| A. Problem | 81 |
| B. Action Plan | 82 |
| C. Implementation | 82 |
| D. Data Analysis II | 84 |
| E. Observation | 93 |
| F. Reflection II | 95 |

| | |
|--|------------|
| 4.2 Discussion of Result | 97 |
| 4.3 Discussion of Observation | 101 |
| 4.4 The Restrictiveness of Research | 103 |
| CHAPTER V CONCLUSION AND SUGGESTION | 105 |
| 4.5 Conclusion | 105 |
| 5.2 Recommendation | 105 |
| REFERENCE | 107 |
| APPENDIX | 110 |
| DOCUMENTATION OF RESEARCH | 213 |

