

## TABLE OF CONTENT

VALIDATION SHEET .....	Error! Bookmark not defined.
STATEMENT OF ORIGINALITY SHEET .....	iii
LETTER OF PUBLICATION APPROVAL FOR FINAL PROJECT FOR ACADEMIC IMPORTANCE .....	Error! Bookmark not defined.
BIOGRAPHY .....	v
ABSTRACT .....	vi
ACKNOWLEDGEMENT .....	vii
TABLE OF CONTENT .....	ix
LIST OF TABLE .....	xi
LIST OF FIGURE .....	xii
LIST OF APPENDIX .....	xiii
CHAPTER I .....	1
INTRODUCTION .....	1
1.1    Background .....	1
1.2    Identification of Problem .....	5
1.3    Limitation of Problem .....	6
1.4    Formulation of Problem .....	6
1.5    Objective of Research .....	6
1.6    Benefits of Research .....	7
CHAPTER II .....	8
LITERATURE REVIEW .....	8
2.1    Definition of Study, Learning and Learning Outcomes .....	8
2.1.1    Definition of Study .....	8
2.1.2    Defenition of Learning .....	9
2.1.3    Defenition of Learning Outcomes and Learning Outcomes Enhancement	10
2.2    Learning Materials .....	11
2.2.1    Mobile Learning .....	12
2.2.2    Android .....	13
2.3    Problem Based Learning Model Learning .....	14
2.4    Chemical Bonding .....	16
2.5    Framework of Thinking .....	19
2.6    Research Hypothesis .....	20
CHAPTER III .....	22
RESEARCH METHODOLOGY .....	22
3.1    Research Time and Location .....	22
3.2    Research Population and Sample .....	22
3.2.1    Research Population .....	22
3.2.2    Research Sample .....	22
3.3    Research Design .....	22
3.3.1    Research procedure .....	23
3.3.2    The research design in the trial phase .....	25
3.4    Research Variables .....	25
3.4.1    Independent Variable .....	25
3.4.2    Dependent Variable .....	25
3.4.3    Operational Definition .....	25

3.5	Research Instrument.....	26
3.5.1	Non test instrument (Questionnaire).....	26
3.5.2	Test Instrument .....	27
3.6	Data Processing Techniques .....	30
3.6.1	Learning Motivation Data.....	30
3.6.2	Learning outcome enhancement .....	31
3.7	Data Analysis Techniques.....	32
3.7.1	Learning Motivation Data.....	32
3.7.2	Student Learning Outcomes Enhancement Data .....	34
3.7.3	Correlation Test .....	37
	CHAPTER IV .....	39
	RESULT AND DISCUSSION .....	39
4.1	Result .....	39
4.1.1	Analysis of Instrument Test .....	39
4.1.2	Analysis of Student learning outcomes enhancement of students .....	41
4.1.3	Analysis of Student Motivation .....	43
4.1.4	Correlation Test .....	46
4.2	Discussion .....	46
	CHAPTER V .....	48
	CONCLUSION AND SUGGESTION .....	48
5.1	Conclusion .....	48
5.2	Suggestion.....	48
	REFERENCE.....	49



## LIST OF TABLE

	<i>Page</i>
<b>Table 2.1</b> Syntax for Problem Based Learning (PBL) .....	16
<b>Table 2.2</b> Valence Electrons Atoms Of Noble Gas Atoms .....	17
<b>Table 3.1</b> Research design of learning outcomes .....	29
<b>Table 3.2</b> Grid of questionnaire of student learning motivation .....	31
<b>Table 3.3</b> Assessment Classification of Student Motivation Questionnaire .....	35
<b>Table 3.4</b> Category of Gain .....	36
<b>Table 3.5</b> Meaning of Correlation Coefficient .....	42
<b>Table 4.1</b> Instrument Analysis Recapitulation .....	45
<b>Table 4.2</b> Table of Pretest, posttest and Gain Result .....	45
<b>Table 4.3</b> Normality Test for Gain .....	46
<b>Table 4.4</b> Homogeneity Test for Gain .....	46
<b>Table 4.5</b> Hypothesis Testing Data .....	47
<b>Table 4.6</b> Result of Motivation Data .....	48
<b>Table 4.7</b> Normality Test of Student Motivation .....	48
<b>Table 4.8</b> Homogeneity Test of Student Motivation.....	49
<b>Table 4.9</b> Hypothesis Testing Result of Student Motivation .....	49
<b>Table 4.10</b> Hypothesis Testing Data .....	50



## LIST OF FIGURE

	<i>Page</i>
<b>Figure 3.1 Prosedure of research.....</b>	28



## LIST OF APPENDIX

<b>Appendix 1</b> Syllabus Of Chemistry Teaching .....	57
<b>Appendix 2</b> Lesson Plan (Rpp) .....	63
<b>Appendix 3</b> Instrument Motivasi Belajar.....	76
<b>Appendix 4</b> Data Student Motivation .....	79
<b>Appendix 5</b> Normality Test Of Student Motivation .....	83
<b>Appendix 6</b> Calculation Of Homogeneity .....	85
<b>Appendix 7</b> Hypothesis Testing Of Student Motivation.....	86
<b>Appendix 8</b> Instrument Test Before Validation.....	87
<b>Appendix 9</b> Instrument Test Before Validation.....	96
<b>Appendix 10</b> Answer Key Of Test Before Validation.....	115
<b>Appendix 11</b> Instrument Test After Validation .....	116
<b>Appendix 12</b> Instrument Test After Validation .....	126
<b>Appendix 13</b> Instrument Test Validity.....	132
<b>Appendix 14</b> Calculation Of Test Validity .....	133
<b>Appendix 15</b> Reliability Of Test.....	135
<b>Appendix 16</b> Difficulty Index Of Test.....	137
<b>Appendix 17</b> Calculation Of Difficulty Index .....	138
<b>Appendix 18</b> Different Power Of Test .....	140
<b>Appendix 19</b> Calculation Of Different Power Of Test .....	141
<b>Appendix 20</b> Recapitulation Of Instrument Analysis .....	142
<b>Appendix 21</b> Student Learning Outcomes Control Class.....	143
<b>Appendix 22</b> Student Learning Outcomes Experiment Class.....	145
<b>Appendix 23</b> Normality Test Of Control Class .....	146
<b>Appendix 24</b> Normality Test Of Experiment Class .....	148
<b>Appendix 25</b> Calculation Of Homogeneity Test .....	150
<b>Appendix 26</b> Tabulation Of Gain.....	155
<b>Appendix 27</b> Calculation Of Students Learning Outcomes Enhancement ....	157
<b>Appendix 28</b> Hypothesis Test For Students Learning Enhancement.....	159
<b>Appendix 29</b> Normality Test Of Gain.....	161
<b>Appendix 30</b> Calculation Of Homogeneity .....	163

<b>Appendix 31</b>	Homogeneity Of Gain Data Control Class.....	164
<b>Appendix 32</b>	Table Of Corellation Test.....	166
<b>Appendix 33</b>	Correllation Test.....	167
<b>Appendix 35</b>	Documentation .....	168

