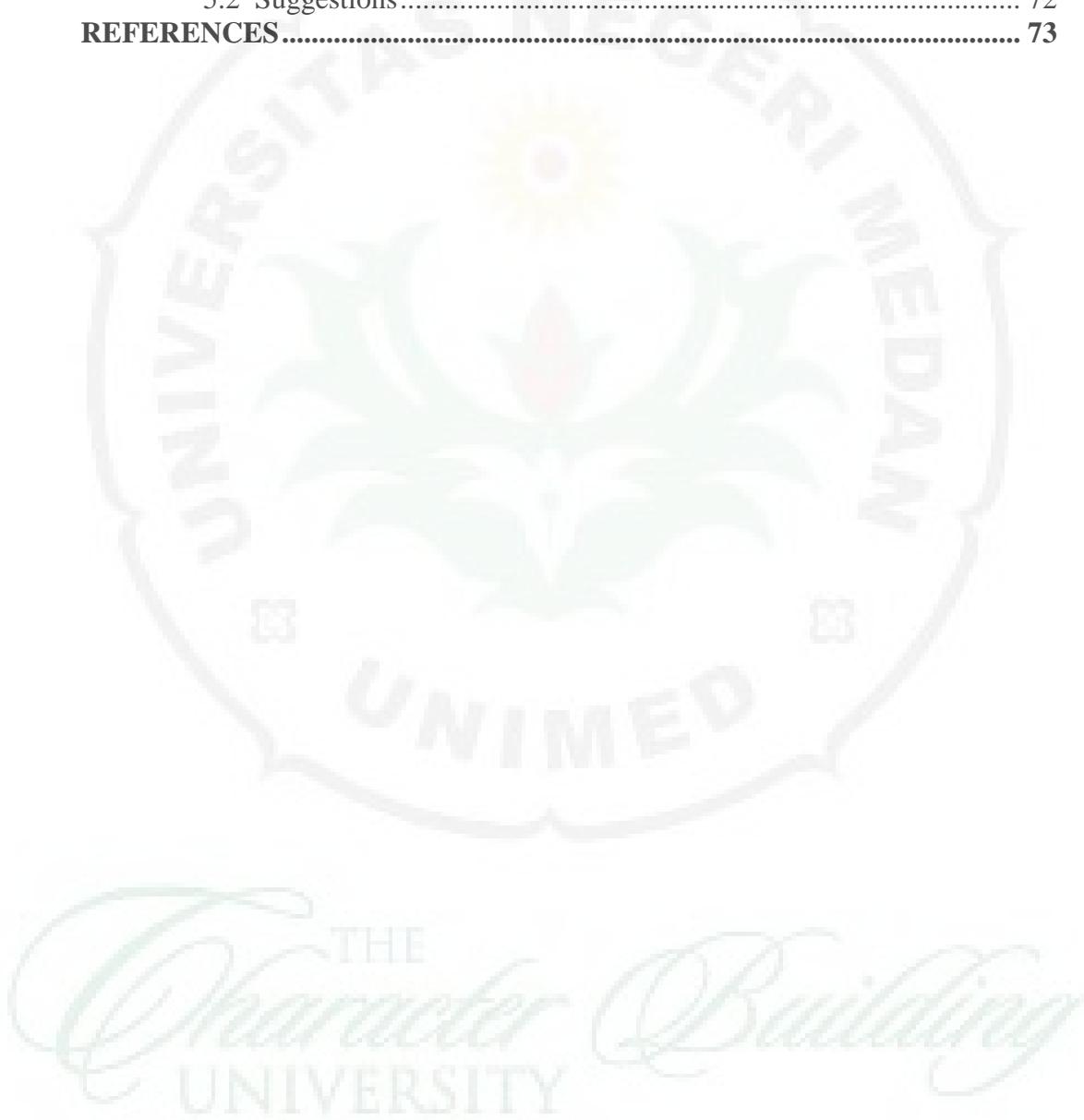


TABLE OF CONTENTS

ORIGINALITY STATEMENT PAGE.....	i
PUBLICATION APPROVAL PAGE	ii
BIOGRAPHY	iii
ABSTRACT	iv
ACKNOWLEDGMENT	v
TABLE OF CONTENTS.....	vii
LIST OF TABLES.....	x
LIST OF FIGURES.....	xi
APPENDIX LIST.....	xii
CHAPTER I INTRODUCTION.....	1
1.1 Background.....	1
1.2 Identification of Problems	4
1.3 Scope Of The Problem	5
1.4 Formulation Of The Problem	5
1.5 Research Purposes	6
1.6 Benefits of Research.....	6
1.7 Operational Definition.....	6
CHAPTER II LITERATURE REVIEW	9
2.1 Theoretical Study.....	9
2.1.1 Learning Model	9
2.2 Problem-Based Learning Model.....	9
2.2.1 Definition of Problem-Based Learning Model	9
2.2.2 Characteristics of Problem-Based Learning	10
2.2.3 Syntax Problem-Based Learning Model.....	11
2.2.4 Excess Problem-Based Learning	12
2.2.5 Disadvantages of Problem-Based Learning.....	13
2.3 Direct Instruction Learning Model	13
2.4 Media Learning	15
2.4.1 Definition Media Learning	15
2.4.2 Characteristics of Instructional Media.....	16
2.4.3 Function and Role of Media Education.....	16
2.5 Lesson Study	17
2.5.1 Definition of Lesson Study	17
2.5.2 Steps in Lesson Study.....	17
2.5.3 Benefits Lesson Study	18
2.6 Interactive Learning Media	18
2.6.1 Definition of Interactive Learning Media.....	18
2.6.2 Interactive Learning Strategy	19
2.7 PPT	19
2.7.1 Definition of PPT.....	19
2.7.2 Advantages of PPT	20
2.8 Interactive PowerPoint Media	21
2.8.1 Definition of Interactive PowerPoint Media.....	21
2.8.2 Advantages of Interactive PowerPoint Media	22
2.9 Theory of Thinking and Critical Thinking	23
2.9.1 Thinking.....	23

2.9.2	Critical Thinking.....	23
2.9.2.1	Indicators of Critical Thinking Skills	24
2.9.3	Critical Thinking Classroom	27
2.9.4	Critical Thinking Ability Test	27
2.10	Study On Material.....	27
2.10.1	Definition of Buffer Solution	27
2.10.2	The Nature of the Buffer Solution	28
2.10.3	Components Buffer Solution And How It Works	28
2.10.4	Calculating pH Buffer Solution	30
2.10.5	Function Buffer Solution	31
2.11	Relevant Research.....	32
2.12	Framework for Thinking	33
2.13	Hypothesis Research.....	35
CHAPTER III	METHODOLOGY	37
3.1	Place And Time Research	37
3.2	Population And Sample.....	37
3.3	Variables Research	37
3.3.1	Variables	37
3.4	Research Design	38
3.5.	Research Procedure	39
3.6	Data Collection Technique	40
3.7	Research Instruments.....	41
3.8	Instrument Trials Test.....	44
3.9	Instruments Non-Test	47
3.10	Tool Data Collectors	48
3.11	Data Analysis Techniques.....	51
3.11.1	Normality test	51
CHAPTER IV	RESULTS AND DISCUSSION	53
4.1	Research Instrument Data Analysis.....	53
4.1.1.	Test Instruments.....	53
4.1.1.1	Test Validity	53
4.1.1.2	Test Difficulty Level	54
4.1.1.3	Power Differential Test	55
4.1.1.4	Test Reliability	55
4.1.1.5	Non-Test Instrument Data Analysis	56
4.2	Data Analysis and Discussion of Research Results	56
4.2.1	Student Learning Outcomes	57
4.2.1.1.	Learning Outcome Improvement Data	58
4.2.1.2	Learning Outcome Data Normality Test	59
4.2.1.2.1	Pretest Data Normality Test	59
4.2.1.2.2	Normality Test for Increasing Learning Outcomes	60
4.2.1.3	Homogeneity Test of Learning Outcome Data ...	60
4.2.3.1	Pretest and Posttest Data Homogeneity Test.....	60
4.2.3.2	Homogeneity Test for Increasing Learning Outcomes	61
4.2.1.4	Hypothesis Test I.....	62
4.3	Analysis of Students' Critical Thinking Ability	63
4.3.1	data normalit test of student critical thingkig ability	65

4.3.2 Data Homogeneity Test of Students' Critical Thinking Ability	65
4.3.3 Hypothesis Test II.....	66
4.4 Correlation Test	67
4.5 Discussion.....	67
CHAPTER V CONCLUSIONS AND SUGGESTIONS.....	71
5.1 Conclusion.....	71
5.2 Suggestions.....	72
REFERENCES.....	73



LIST OF TABLES

Table. 2.1 Syntax Problem-Based Learning (PBL) Model	11
Table 2.2 Syntax Direct Instruction (DI) Model	14
Table 2.3 Indicators of Critical Thinking Skills	24
Table 3.1 Research design.....	38
Table 3.2 Grid Test Research Instruments	42
Table 3.3 Grid Observation Sheet Critical Thinking Skills	43
Table 3.4 Criteria for test validity	45
Table 3.6 Classification distinguishing test	47
Table 3.7 Grid Observation Sheet Critical Thinking Skills	47
Table 3.8 Grid Learning Test Results	48
Table 4.1 Test Instrument Grid Analysis	55
Table 4.2 Summary of Descriptive Statistics	57
Table 4.3 Percent increase in learning outcomes	58
Table 4.4 Gain statistical calculation table	58
Table 4.5 Pretest-posttest normality test	60
Table 4.6 Data normality test for increasing learning outcomes	60
Table 4.7.Pretest-posttest data homogeneity test	61
Table 4.8. Test the homogeneity of data on increasing learning outcomes	61
Table 4.9 Data on the results of hypothesis testing increased learning outcomes.....	62
Table 4.10 The Average Value of Students' Critical Thinking Ability	63
Table 4.11 Summary of Descriptive Statistics Assess Students' Critical Thinking Ability	64
Table 4.12 Data Normality Test Students' Critical Thinking Ability	65
Table 4.13 Data Homogeneity Test Students' Critical Thinking Ability	66
Table 4.14 Data Hypothesis Test Results Students' Critical Thinking Ability	66
Table 4.15 Correlation Test Results of Students' Critical Thinking Ability with Improved Learning Outcomes.....	67



LIST OF FIGURES

Figure 3.1 Schematic design of the student	39
Figure 4.1 Diagram of the Average Value of Learning Outcomes.....	58
Figure 4.2 Percentage Diagram of Increasing Learning Outcomes.....	59
Figure 4.3 Diagram of the Average Value of Students' Critical Thinking Ability in Two Meetings of Experiment class and Experiment class I	64
Figure 4.4.Diagram of the Difference in the Average Critical Thinking Ability of Experiment class and Experiment class I students.....	65