## **CONTENTS LIST**

	Page
Approval Sheet	i
Biography	ii
Abstract	iii
Acknowledgment	iv
Contents List	vi
Figures List	X
Tables List	xi
Formula List	xii
Appendixs List	xiii
CHAPTER I INTRODUCTION	1
1.1. Research Background	1
1.2. Problem Identification	4
1.3. Problem Limitation	4
1.4. Problem Formulation	5
1.5. Research Objective	5
1.6. Research Benefit	6
1.7. Operational Defenition	6
CHAPTER II LITERATURE STUDY	8
2.1. Theoritical Framework	8
2.1.1. Definiton of Learning	8
2.1.2. Learning Outcomes	9
2.1.3. Factors Affecting The Learning Outcomes	12
2.1.4. Critical Thinking Skill	13
2.1.5. The Learning Model	17
2.1.6. Problem Based Learning Model (PBL)	17
2.1.6.1. The Characteristics of Problem Based Learning Model	18
2.1.6.2. The Operational Steps of Problem Based Learning Model	19

	2.1.6.3. Advantages and Disadvantages of Problem Based Learning	
	Model	22
	2.1.7. Guided Inquiry Learning Model	23
	2.1.8. Process Oriented Guided Inquiry Learning Model (POGIL)	24
	2.1.8.1. Parts of Process Oriented Guided Inquiry Learning Model	
	(POGIL)	26
	2.1.8.2. The Steps of Process Oriented Guided Inquiry Learning	
	Model	27
	2.1.8.3. The Advantages and Disadvantages of Process Oriented	
	Guided Inquiry Learning Model	28
2.2.	Description of Material about Solubility and Solubility Product	28
	2.2.1. Definiton and Unit of Solubility	29
	2.2.2. Constanta of Solubility Product	29
	2.2.3. The Relationship between Solubility (s) and Constanta of Solubility	
	Product	31
	2.2.4. The Effect of Common Ion toward Solubility	33
	2.2.5. Solubility and pH	35
	2.2.5.1. pH and Solubility of Base	35
	2.2.5.2. pH and Solubility of Salt	36
	2.2.6. Precipitation Reaction	36
2.3.	. Conceptual Framework	38
2.4.	. Hypothesis	40
	2.4.1. Hypothesis for Problem Formulation I	40
	2.4.2. Hypothesis for Problem Formulation II	41
CH	APTER III RESEARCH METHODS	42
3.1.	. Location and Time of Research	42
3.2.	. Population and Sample of Research	42
	3.2.1. Population of Research	42
	3.2.2. Sample of Research	42
3.3.	. Variable of Research	42
3 1	Instrument of Research	43

VIII	

	3.4.1. Test Instrument	43
	3.4.2. Non-Test Instrument	48
3.5.	. Design of Research	49
3.6.	. Technique of Data Collecting	50
	3.6.1. Preparation Stage of Research	50
	3.6.2. Implementation Stage of Research	51
	3.6.3. Final Stage of Research	51
3.7.	. Technique of Data Analysis	54
	3.7.1. Normality Test	54
	3.7.2. Homogeneity Test	54
	3.7.3. Normalized Gain	54
	3.7.4. Hypothesis Test	55
CH	IAPTER IV RESULT AND DISCUSSION	57
4.1.	. Research Result	57
	4.1.1. Data Analysis of Research Instrument	57
	4.1.1.1. Validity Test	57
	4.1.1.2. Reliability Test	58
	4.1.1.3. Difficulty Level	58
	4.1.1.4. Discrimination Index	58
	4.1.2. Data Description of Result	59
	4.1.2.1. Student's Achievement	60
	4.1.2.2. Observation Sheet Data of Student's Critical Thinking	60
	4.1.3. Data Analysis of Research Result	61
	4.1.3.1. Normality Test of Student's Achievement	61
	4.1.3.2. Normality Test of Student's Critical Thinking	62
	4.1.3.3. Homogeneity Test of Student's Achievement	63
	4.1.3.4. Homogeneity Test of Student's Critical Thinking	63
	4.1.3.5. Normalized Gain of Student's Achievement	64
	4.1.3.6. Hypothesis Test	65
	4.1.3.6.1. Hypothesis Test of Hypothesis 1	65
	4.1.3.6.2. Hypothesis Test of Hypothesis 2	66

4.2. Research Discussion	67
CHAPTER V CONCLUSION AND SUGGESTION	71
5.1. Conclusion	71
5.2. Suggestion	71
REFERENCES	72

