

TABLE OF CONTENTS

	Page
ABSTRACT	<i>i</i>
ABSTRAK	<i>ii</i>
ACKNOWLEDGEMENTS	<i>iii</i>
TABLE OF CONTENTS	<i>v</i>
LIST OF TABLE	<i>viii</i>
LIST OF FIGURE	<i>ix</i>
LIST OF APPENDICES	<i>x</i>
CHAPTER I INTRODUCTION	1
1.1. Background	1
1.2. Identification of Problem	7
1.3. Scope of Problem	8
1.4. Formulation of Problem	8
1.5. Objective of Research	8
1.6. Benefit of Research	9
CHAPTER II REVIEW OF LITERATURE	10
2.1. Learning Definition	10
2.2. Learning Outcomes	12
2.2.1. Physics Cognitive Competence of Students	14
2.2.1.1. The Knowledge Dimension	14
2.2.1.2. The Cognitive Process Dimension	21
2.2.2. Science Process Skill	24
2.2.2.1. Definition of Science Process Skill	24
2.2.2.2. Benefits of Process Skill	25
2.2.2.3. Process Skills in Science Process Skill	27
2.3. Factors that Affect the Learning Outcomes	32
2.4. Learning Theory	34
2.5. Scientific Inquiry Learning Model Based on Conceptual Change	38
2.6. Conventional Learning	52
2.7. Relevant Research	54
2.8. Conceptual Framework	58
2.9. Hypothesis of Research	63
CHAPTER III RESEARCH METHOD	64
3.1. Location and Time of Research	64
3.2. Population and Sample of Research	64

3.2.1	Population	64
3.2.2	Sample	64
3.3.	Variable of Research	64
3.3.1.	Independent Variable	64
3.3.2.	Dependent Variable	65
3.4.	Type and Design of Research	65
3.5.	Procedure of Research	66
3.6.	Techniques of Data Collecting	68
3.6.1.	Pre-test	68
3.6.2.	Post-test	68
3.7.	Instrument of Research	68
3.7.1.	Test Instrument	68
3.8.	Testing of Instrument	70
3.8.1.	Validity of Test Instrument	70
3.8.1.1.	Empirical Validity	70
3.8.1.2.	Content Validity	71
3.8.2.	Reliability of Test Instrument	71
3.9.	The Testing Result of the Research Test Instrument	72
3.9.1	Validity of Test	72
3.9.2	Reliability of Test	73
3.10.	Techniques of Data Analysis	74
3.10.1.	Descriptive Analysis	74
3.10.2	Inferential Analysis	74
3.10.2.1.	Determine the Mean and Standard Deviation	74
3.10.2.2.	Normality Test	75
3.10.2.3.	Homogeneity Test	76
3.10.2.4.	Hypothesis Test	77
CHAPTER IV RESULT OF STUDY AND DISCUSSION		80
4.1.	Result of Study	80
4.1.1.	Pre-test	80
4.1.1.1.	Pre-test of Students' Physics Cognitive Competence	80
4.1.2.	Post-test	83
4.1.2.1.	Post-test of Students' Physics Cognitive Competence	83
4.1.2.2.	Data of Students' Science Process Skill (SPS)	88
4.1.3.	Analysis of Data	94
4.1.3.1.	Normality Test of Post-test	95
4.1.3.2.	Homogeneity Test of Post-test	97
4.1.3.3.	Hypothesis Testing	98
4.2.	Discussion	99

CHAPTER V CONCLUSION AND SUGGESTION	119
5.1. Conclusions	119
5.2. Suggestios	119
REFERENCES	121
APPENDICES	124