

Table of Contents

	<i>Page</i>
THESIS	i
Originality Statement	ii
Assignment Publication Approval.....	iii
Biography.....	iv
Abstract.....	v
Preface.....	vi
Table of Contents	viii
List of Figures.....	xi
List of Tables	xii
List of Appendix.....	xiii
CHAPTER I INTRODUCTION	1
1.1. Problem Background	1
1.2. Problem Identification	4
1.3. Research Scope	4
1.4. Research Question.....	5
1.5. Research Aim.....	5
1.6. Research Benefits	5
CHAPTER II LITERATURE REVIEW.....	6
2.1. Learning Model	6
2.1.1. Reading, Identification, Constructing, Solving, Reviewing, and Extending (RICOSRE)	6
2.1.2. Syntax of Reading, Identification, Constructing,..... Solving, Reviewing, and Extending (RICOSRE) Model	6
2.1.3. Advantages of Reading, Identification, Constructing,..... Solving, Reviewing, and Extending (RICOSRE) Model	10
2.2. Scientific Reasoning Skills.....	10
2.2.1. Definition of Scientific Reasoning Skills	10
2.2.2. Aspects of Scientific Reasoning Skills	12
2.2.3. Patterns of Scientific Reasoning	13

2.3. Topic	16
2.3.1. Environmental Change.....	16
2.3.2. Environmental Preservation Efforts	18
2.3.3. Waste and Recycling.....	19
2.3.4. Environmental Pollution Impacts	23
2.4. Framework of Thinking	24
2.5. Hypothesis	26
CHAPTER III RESEARCH METHODS.....	27
3.1. Location and Time of Research	27
3.1.1. Research Location.....	27
3.1.2. Research Time	27
3.2. Population and Sample	27
3.2.1. Population.....	27
3.2.2. Sample	28
3.3. Research Design and Variables	28
3.3.1. Research Design	28
3.3.2. Research Variable	29
3.4. Operational Definition	29
3.5. Research Instruments	30
3.5.1. Scientific Reasoning Test.....	30
3.6. Data Collection Technique	32
3.6.1. Test	32
3.6.2. Documentation	32
3.7. Research Procedure	32
3.7.1. Preparation Stages	32
3.7.2. Research Stages	33
3.7.3. Final Stages.....	33
3.8. Data Analysis	34
3.8.1 Problem Analysis	34
3.8.2 Validity Test	34
3.8.3. Reliability Test	35
3.8.4. Difficulty Level	36

3.8.5. Discriminating Power Test.....	36
3.9. Research Data Analysis	37
3.9.1. Normality Test.....	37
3.9.2. Homogeneity Test.....	38
3.9.3. Hypothesis Test	38
3.9.4. Statistical Hypothesis.....	39
3.9.5. n–Gain Calculation	39
CHAPTER IV RESULTS AND DISCUSSION	41
4.1. Research Result	41
4.1.1. The Influence of the Reading, Identification, Constructing, Solving, Reviewing, and Extending.....	
Learning Model on Students' Scientific Reasoning Skills	41
4.1.2. Data Analysis.....	43
4.2. Discussion.....	45
4.2.1 Students' Scientific Reasoning Skills.....	45
4.2.2 Differences between Reading, Identification, Constructing, Solving, Reviewing, and Extending and Conventional	46
CHAPTER V CONCLUSION AND RECOMMENDATION.....	49
5.1 Conclusion.....	49
5.2 Recommendation.....	49
REFERENCES.....	50
APPENDIX.....	56