

TABLE OF CONTENTS

	<i>Page</i>
MOTTO AND DEDICATION SHEET	i
APPROVAL SHEET	ii
ORIGINALITY STATEMENT SHEET	iii
PUBLICATION APPROVAL SHEET	iv
BIOGRAPHY	v
ABSTRACT.....	vi
PREFACE.....	vii
TABLE OF CONTENTS	x
LIST OF FIGURES.....	xiii
LIST OF TABLES	xv
LIST OF APPENDIX	xvii
CHAPTER I. INTRODUCTION	1
1.1 Background of the Problem	1
1.2 Problem Identification.....	7
1.3 Problem Limitations.....	7
1.4 Problem Formulation	7
1.5 Research Objectives	8
1.6 Benefits of Research	8
1.7 Operational Definition	9
CHAPTER II. LITERATURE REVIEW.....	11
2.1 Electronic Book (E-Book).....	11
2.1.1 Definition of E-Book	11
2.1.2 Advantages of E-Book.....	11
2.2 TPACK approach	12
2.3 Scientific literacy	13
2.3.1 Definition of Scientific Literacy	13
2.3.2 Elements in Scientific Literacy	14
2.3.3 Scientific Literacy Assessment	15
2.4 Materials Developed in E-Book	16
2.4.1 Food Substances and Their Functions	16

2.4.2 Human Digestive System.....	19
2.4.3 Digestive Organs.....	20
2.4.4 Abnormalities and Disorders of the Digestive System	28
2.5 Relevant Research	28
2.6 Framework and Hypothesis.....	30
CHAPTER III. RESEARCH METHOD.....	33
3.1 Place and Time of Research.....	33
3.1.1 Research Location.....	33
3.1.2 Research Time	33
3.2 Types of Research	33
3.3 Object and Subject	33
3.3.1 Object.....	33
3.3.2 Subject	34
3.4 Research Variables.....	34
3.5 Development Procedures	34
3.6 Data Collection Techniques	40
3.7 Research Instruments	41
3.8 Product Trial.....	48
3.9 Data Analysis	51
CHAPTER IV. RESULT AND DISCUSSION	54
RESULT AND DISCUSSION	54
4.1 Description of Development Results	54
4.2 Analysis Results	54
4.2.1 Performance Gap Analysis Results.....	54
4.2.2 Results of Needs Analysis	55
4.3 E-Book Design Results	55
4.3.1 Preparation of Learning Materials in E-Books.....	56
4.3.2 Use of Software in E-Book Design.....	58
4.3.3 Results of E-Book Content Design.....	60
4.4 Development Results	64
4.4.1 Material Expert Validation Assessment Results.....	67
4.4.2 Media Expert Validation Assessment Results	69

4.4.3 Learning Design Expert Validation Assessment Results	70
4.4.4 Linguist Expert Validation Assessment Results.....	72
4.4.5 E-Book Revision Results Based on Expert Suggestions	74
4.4.6 One-to-One Evaluation Results	75
4.4.7 Small Group Evaluation Results.....	79
4.4.8 Field Trial Evaluation Results	82
4.5 Implementation Results.....	87
4.6 Evaluation Results.....	91
4.7 Advantages and Disadvantages of TPACK-based E-Books.....	92
4.8 Discussion of Research Results	93
4.8.1 Discussion of Analysis Phase Results	93
4.8.2 Discussion of Design Phase Results	94
4.8.3 Discussion of Development Stage Results	94
4.8.4 Discussion of Implementation Phase Results	100
4.8.5 Discussion of Evaluation Phase Results	101
CHAPTER V. CONCLUSION AND SUGGESTION.....	104
5.1 Conclusion.....	104
5.2 Suggestion	105
REFERENCES.....	106
APPENDIX.....	111