UNIVERSITI TEKNOLOGI MARA

“DEARLY”: MULTIMEDIA LEARNING APPLICATION FOR DYSLEXIA EARLY READING INTERVENTION

AINA SURAYA BINTI MUSA

Thesis submitted in fulfilment of the requirements for
Bachelor of Information Technology (Hons.)
Faculty of Computer and Mathematical Sciences

JANUARY 2020

STUDENT DECLARATION

I certify that this thesis and the project to which it refers is the product of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

…….
AINA SURAYA BINTI MUSA
2016552441

JANUARY 3, 2020

ABSTRACT

Dyslexia is one of the most common learning disabilities experienced by children and adults. Children with dyslexia have language learning disorder and this makes it difficult for them to master the skills to read, spell, and write. These children experience confusion regarding certain alphabets and without early intervention, it could negatively impact their learning and future. A large number of research had been conducted in exploring the benefits of technologies and information as a learning platform for individual especially children with dyslexia. Multimedia learning represents a word, text, graphic, video and animation. Past research have highlighted the use of multisensory approach when teaching dyslexic children to read. Additionally, phonics reading technique has proven its strength in helping these children to master literacy skills. With the advancement of learning strategies through the multimedia technology, this study seeks to integrate multisensory learning, QR code and phonic reading technique. This multimedia learning application is called "Dearly". In this study, actual alphabet blocks have QR code stickers on them, which can be scanned via multimedia learning application. Then the learning application will display corresponding screen representing the alphabet. The learning application will allow children to recognize and visualize letters, words, sentences, and pronunciations in the Malay language.

TABLE OF CONTENTS

SUPERVISOR APPROVAL ii
STUDENT DECLARATION iii
ABSTRACT iv
ACKNOWLEDGEMENT v
TABLE OF CONTENTS vi
LIST OF FIGURES ix
LIST OF TABLES x
CHAPTER 1 INTRODUCTION 1
1.1 Background of Study 1
1.2 Problem Statement 3
1.3 Objectives 4
1.3 Project Scope 4
1.4 Project Significance 5
1.5 Summary 5
CHAPTER 2 LITERATURE REVIEW 6
1.1 Multimedia Learning 6
2.1.1 Cognitive Learning Theory 6
2.1.2 Multimedia Learning Principle 7
2.2 Teaching Method for Individual with Dyslexia 9
2.2.1 Multisensory Approach 9
2.2.2 Phonic Reading Technique 10
2.3 QR Code 11
2.4 Related Work 12
2.4.1 Bijak Membaca 12
2.4.2 MyLexics: an assistive courseware for Dyslexic children to learn basic Malay language 13
2.4.3 Dyslexia Baca Mobile Application 14
2.4.4 QR Code in Education 14
2.4.5 Fun Evaluation Smiley Scale 15
2.5 Summary 15

4.5.5 Kuiz 38
4.5.6 Video 38
4.5.7 Learning Using Alphabet Blocks 39
4.1 Summary 40
CHAPTER 5 RESULT AND FINDINGS 41
5.1 Heuristic Evaluation 41
5.1.1 Content Criteria 42
5.1.2 Findings of Application 43
5.2 Usability Testing Using Smiley Scale 46
5.3 Summary 48
CHAPTER 6 CONCLUSION AND RECOMMENDATION 49
6.1 Advantages of the project 49
6.2 Limitations 49
6.3 Recommendation 50
6.4 Conclusion 50
REFERENCES 51
APPENDIX A: (Questionnaire) 55
APPENDIX B: (Heuristic Evaluation) 56
APPENDIX C: (Fun Evaluation: Smiley Scale) 57