

SUPERVISOR'S APPROVAL

**Teach speech skill to children with mild autism using randomization technique in
mobile application**

By

Mohammd Khairi bin Ali

2013420928

This report was prepared under the supervision of the project supervisor, Madam Nurazian Binti Mior Dahalan. It was submitted to the Faculty of Computer and Mathematical Sciences and was accepted in partial fulfillment of the requirement for the degree of Bachelor of Computer Science (Hons).

Approved by

.....

Nurazian Binti Mior Dahalan

Project Supervisor

JULY 2015

STUDENT'S DECLARATION

I certify that this report 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.

.....

MOHAMMAD KHAIRI BIN ALI

2013420928

JULY 2015

]ABSTRACT

Children with autism usually live in their own world. Thus they does not communicate or social with others. Children with autism may find difficulties to develop their social skills and communication skills. They also may loose their social skills in their few month as infant. “Speech Generating Device” is a technique use to overcome this problem. This technique focus on generating a sound based on the button pressed by the user. To make it teachable for the child, a video showing a lips motion of the spoken word is shown. Thus the care-taker can guide the child to mimic the lips motion. Based on the result from the test conducted in Annahlu Therakids for two weeks, the result were gathered through questionnaire and testing for both autism children and speech therapist. Speech therapist were test on usability testing through questionnaire while the functionality testing, design testing were conducted on the children. Videos are recorded as proof.

Keyword : *Child, Autism , Mobile Application, Speech Generating Device , Knuth-Yates*

TABLE OF CONTENTS

CONTENTS	PAGE
SUPERVISOR APPROVAL.....	ii
STUDENT DECLARATION.....	iii
ACKNOWLEDGEMENT.....	iv
ABSTRACT.....	v
TABLE OF CONTENT.....	vi
LIST OF FIGURES	x
LIST OF TABLES	xi
LIST OF ABBREVIATIONS	xii

CHAPTER 1 : INTRODUCTION

1.1 Background Study.....	1
1.2 Problem Statement.....	2
1.3 Possible Solution.....	2
1.4 Objective	3
1.5 Scope.....	3
1.6 Stakeholder.....	3
1.7 Project Significant.....	3

CHAPTER 2 : LITERATURE REVIEW

2.1 Autism Spectrum Disorder.....	4
2.2 Autism interest and attention.....	5
2.3 Augmented Alternative Communication (AAC).....	5
2.3.1 Techniques Used in Augmented Alternative Communication.....	6
2.3.2 Low-Tech Picture Cards / Visual Symbol.....	6

2.3.3	Speech Generating Device.....	9
2.4	Current Application using Augmented Alternative Communication.....	11
2.4.1	Teaching Language Concepts (Visual Symbols).....	11
2.4.2	Find Me (Speech Generating Device).....	12
2.5	Randomization Algorithm.....	15
2.6	Summary.....	16

CHAPTER THREE : METHODOLOGY

3.1	Project Framework	17
3.2	Project Methodology	17
3.2.1	Requirement Analysis.....	19
3.2.2	Design Document and Prototype.....	20
3.2.3	Iteration, Demo and Feedback.....	20
3.2.4	Identify, Defects and Resolve bug.....	20
3.2.5	Production and Technical Support.....	20
3.3	Application Design.....	21
3.3.1	Use Case Diagram.....	21
3.3.2	Flow Chart.....	22
3.3.3	Interface Design.....	23
3.4	Hardware and Software Requirement.....	26
3.5	Conclusion.....	27

CHAPTER FOUR : DATA COLLECTION

4.1	Type of data collected.....	28
4.2	Technique to collect the data.....	29
4.2.1	List of Subject.....	28
4.2.2	Image.....	29