1 Chapter 1: Introduction

CHAPTER 1

INTRODUCTION

1.1 Background

Babies are truly smarter than we do know. Recent researchers have shown that babies learn so much within their first year, so much more than we could ever imagine. According to researchers quoted from [1], “babies learn languages using all parts of the brain, it is only later then this shifts to only the left part of the brain”. As babies grow older, their capability to absorb languages decreases bit by bit. This is because they no longer use all parts of their brain as reasoning, memorizing and all sorts of thinking starts developing in the brain as well.

By three or four years old, babies would have matured into toddlers in kindergarten level. They no longer use their whole brain to learn languages but only use the left side of it. They start to learn to write and sound letters joined together (Yel-low). Soon, they no longer read words by its letters one by one, but read words as a whole, [2] recognising its first and last letter only, its shape and even guessing what would come next after a certain word. [3]

During this time, reading and memorizing shapes of words usually takes quite a while for kindergarten children. The time varies according to each individual’s brain capability, but it still takes quite some time compared to other

subjects in kindergarten. It is so because combinations of 26 letters that produced different sounds as well as different meanings really do require quite a work of the brain as well as some space for memory in the brain. An additional complaint could be that learning a language is not as fun as learning about math, science or sports.

Therefore, it would be marvellous to give a little bit push for our toddlers to learn a language by doing things they love to do; such as playing a game. The idea is to increase absorption to the maximum by stimulating more than just the left part of the brain. By using more parts of the brain, children would be able to learn better and by making education in the form of a game or in a multimedia form; children would be able to withstand learning longer.

The game, along with its vision still needs to be proven as to whether it would be capable to work and help achieve the aim of the project. This thesis is expected to assist toddlers in reading.

1.2 Scope

The scope of the thesis covers development and documentation of game-based educational software for assisting toddlers in early stages of reading. The scope includes a working game; a document covering brief research of kindergarten children's learning capabilities and responds towards the proposed game. Experiments and game try-outs would be done to gather data of comparison which would further support the thesis project to its statement; how the proposed game could help shorten the time needed by toddlers to be able to recognize sight

words faster and finally read. Writing will not be covered by the thesis, it is considered to be yet un-teachable by computer games.

1.3 Assumptions

The assumptions are as follows.

- Tests run on children's responses to the game represent other children in other countries.
- Data gathered would be counted as percentage and subjective preferences would be noted since some kids may respond differently.
- Experiments are done during the day, a time when toddlers' brains are not so active, therefore this should be taken into account in the thesis.
- Tested children have no hearing problems, speech problems and any other brain disorder problems such as autism, down syndrome or other brain disorder problem.
- Teachers play a big part in explaining how certain words are used for sentences.

1.4 Aimed benefits

The aimed benefit of this thesis is to create an educational game for the purpose of teaching children new words in a fun and easy way. A way that could prolong children's concentration on the subject taught because it is done in a very interesting multimedia interactive game that invites all part of the brain to be used. This thesis also aimed to bring teachers into cooperation with the game to achieve

its goals. Thus, children would find it even more stimulating and fun since the whole class as well as the teachers are involved.

The thesis could be used as an analysis report on brain development of children in response to the IT world today as well.

1.5 Structure

This thesis structures will comprises 7 chapters, as described in [4]. The description of each chapter in the thesis is listed as follows.

Chapter 1 Introduction	An introduction of the thesis topic which consist of background and objectives of the thesis, along with scopes and explanation of the reason in choosing this topic.
Chapter 2: Theoretical Foundation	Explanation of the theoretical foundation that will support the thesis making. It would include research to children responses to games compared to classroom tutorials, explanation of brain functions related to games, samples of various simple structure of game stories that draws children and psychological helps in educational of children and games.
Chapter 3 Analysis	The requirement analysis of the final game. Brief explanation of final game play, outlay and steps (levels of game) according to the requirement analysis.
Chapter 4 Design	The comparative analysis based on game made and other games in market by interviews and tests.

	Detailed explanation of the game design, plots, lay outs, characters, etc. Conceptual design and game design are laid out in this thesis chapter.
Chapter 5 Test & Implementation	The discussion, explanations and images obtained from the result of the analysis and designs discussed in Chapter 4.
Chapter 6 Evaluation	Evaluation and discussion on the result achieved based on analysis conducted on the preceding chapter.
Chapter 7 Summary & Conclusion	The conclusion of the thesis.

Table 1 – Thesis structure