CHAPTER 11

KidDylex : Learning Tool for Dyslexic Children

Rafizah Ab Rahman[*], Rafidah Ab Rahman, Nur Fatin Aqilah Zainudin & Nurwahida Abdul Manaf

Politeknik Muadzam Shah, Lebuhraya Tun Abdul Razak, 26700 Muadzam Shah Pahang, Malaysia

Abstract

Low awareness of dyslexia in the society has been a major problem. Dyslexic children normally encountered learning difficulties and often classified as slow learners and considered disruptive in a classroom. In addition, learning tools for dyslexic children that they can use to encourage learning in the fun way remain limited in terms of resources. In order to overcome this problem, an android based application which specially designed for the dyslexic children called KidDylex was introduced. The objective of KidDylex was to provide a simple learning tool and to assist alphabets recognition among dyslexic children that is fun and interesting using mobile application. Addressing the major problems in learning for children with dyslexia in phonemic, phonics, and rapid word recognition, KidDylex was based on a multi-sensory approach to learning, hearing, speaking and imagination technique of letters and numbers by using the object around them. The KidDylex offered 5 modules consist of Alphabets, Numbers, Exercise, Quiz and For Fun.The Alphabets and Numbers modules enables children to practice writing letters and number using guided images. Meanwhile, the Exercise module help dyslexic children to recognize and distinguish specific letters by associating the shapes of the letters to common objects around them They can then test their skill and knowledge in the Quiz module and have fun playing games in the For Fun module. KidDylex has been published in the Google Play and can be downloaded free of charge. This innovation is expected to enhance level of learning activities among dyslexia children.

Keywords: KidDylex; dyslexia learning tool; dyslexia children; innovation

Introduction

In Malaysia, the Ministry of Education uses the term 'specific learning difficulties' as it is a more functional definition for dyslexia which refers to children who have significant difficulties in reading, writing, spelling or manipulating numbers, which are not typical of their general level of performance. Dyslexic children typically experience problems with reading and spelling despite adequate classroom instruction, and they often find it challenging to "sound out" and identify printed words.

Smythe (2010) suggested that dyslexia is caused by lower efficiencies in some areas of cognitive processing needed for reading and writing compared to non-dyslexic individuals. Due to these specific cognitive difficulties, he suggested intervention using Information Technology. This is supported by Spafford and Grosser (1996, p.17) that stated that for student with dyslexia, repeated readings, retellings and so on would be needed to reinforce presented materials. Structured learning that incorporated a multi-sensory interactive approach to be used for the full benefit of enrichment for dyslexic students is highly recommended.

Problem Statement

In Malaysia, it has been reported that in year 2013, there are as many as 400,000 children with dyslexia. It is about 24.7% increment compared to the number children with dyslexia around 314,000 in year 2010 (Thanasayan, 2013).

While research and awareness on dyslexia is growing in Malaysia with more funding and training has been provided by the Ministry of Education, Malaysia to build a checklist to detect dyslexic children, this has in fact put an even heavier workload for teachers significantly. Although more teachers are being trained to teach dyslexia children, an effective mechanism that can equip teachers or even their parents to teach children with dyslexia is very much in need.

Mobile learning has become the dominant learning mode, especially for learners with special educational needs (Aron & Loprest, 2012) such as dyslexia. Therefore, appropriate educational support and overall awareness are required to address this category of specific learning difficulties to help the community of dyslexic children. This has inspired the idea to develop KidDylex, a learning tool using android based mobile application.

Objectives

The objectives of KidDylex application are :
1) To provide a simple teaching techniques for teachers or parents in dealing with dyslexic children.
2) To create an attractive environment for dyslexic children in their learning process.
3) To ensure that dyslexic children receive the same knowledge as others normal children.

Content

KidDylex consists of 5 modules activities that incorporated multi-sensory approach using audio, visual and kinesthetic learning process.

1. Alphabets
   This module has 5 sets of letters that are group with similar letters often mistaken by children. Audio sound of each letter is provided to help dyslexic children associated the sound to the shape of letters.

2. Numbers
   This module use visual representations of animals that correspond with number 0 – 9.

3. Exercises
   The alphabet is best recognised and understood for many people with dyslexia, in terms of similarities of shapes. In this module, for each letters and numbers, dyslexic children will be taught on how to remember the letter or number by imagining it as a real object around them such as imagining letter 'm' as a camel hump. These images allow dyslexic children to recognize the meaning of those visual representations without the need of additional support.

4. Quiz
   In this module, dyslexic children can relate the sounds and images to the correct spelling. Children can enhance their auditory and visual memory when answering the quiz.

For Fun

This is module consists of puzzle games that is enjoyable and fun where player can set their own level of hardness and are free to use any picture as the subject of the game. Fig. 1 shows part of KidDylex application Interface which consists of main interface, main menu and 5 modules activities.

Fig. 1 KidDylex User Interface

Conclusion

In summary, through the use of Information Technology more learning tools can be developed and contributed to the increasing awareness of the difficulties faced not only by children but also to the parents and teachers. Thus, the purpose of KidDylex development using android based mobile application was to provide a learning tools that can improve the quality of learning experiences for dyslexic children. The KidDylex application includes the use of different objects for each letters to help children imagine the shape of the letters. Furthermore, use of animation can be incorporated to engage the attention of dyslexic children. Finally, it hope that the application will help the community of dyslexic and can improve level of education.

References

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