

Dyslexics Are Different

Prepared by: Hadeel Mohammed Al-Dawsari, hma776@cs.bham.ac.uk

Supervised by: Mr. Bob Hendley and Dr. Rowanne Fleck

Abstract

Dyslexia is a universal reading difficulty. It can be found in all countries, cultures and languages: Arabian, European, Chinese, etc. However, everybody is different. Dyslexic individuals are different too. They face different problems while reading. Some of them may not understand what is written, while others may omit, transpose or alter letters while reading a word. And the same at the word level.

The aim of this research is to overcome these problems by providing each dyslexic individual with the appropriate learning to improve his/her reading. This may also result in improving other aspects of their difficulties: such as spelling, self-esteem, etc. To do this, the research will follow three stages: (1) Diagnosing a dyslexic child to identify their dyslexic type, (2) developing a training system to provide a series of learning exercises tailored to the needs of the individual dyslexic child and (3) evaluating the proposed system in terms of learning and satisfaction.

1 Introduction

Reading is one of the most important basic linguistic skills that should be learned. It can be considered as the gate to learning other concepts. A majority of readers are able to understand the information in a written text automatically and without any effort. Conversely, a proportion of readers face difficulty and being exhausted in reading, leading them to be excluded socially and educationally especially in classrooms. Such readers are known as dyslexics.

Many researchers provide different interventions to improve a dyslexic's reading. However, most previous approaches tend to treat all dyslexic individuals as if they are the same, though previous research points out that they are different.

Therefore, the aim of this research is to provide each dyslexic individual with the appropriate training intervention that suits his/her needs to improve his/her reading.

2 Problem Definition

- This research is seeking to answer this question:

Does adaptation based on dyslexic individuals' needs improve their skills?!

- Taking into consideration these issues:

Issue	Details
Language	Different languages affect the interventions differently due to the different properties that each language has.
Age	The age of dyslexic individuals has an important impact on the intervention. Dealing with 5 years old dyslexics, for instance, is not the same as dealing with high educational ones.
Intervention Type	Whether is the intervention intended to improve dyslexics in reading or helping them to cope with their disability?
Experimental Domain	Which skill(s) does the intervention will prefer to deal with?

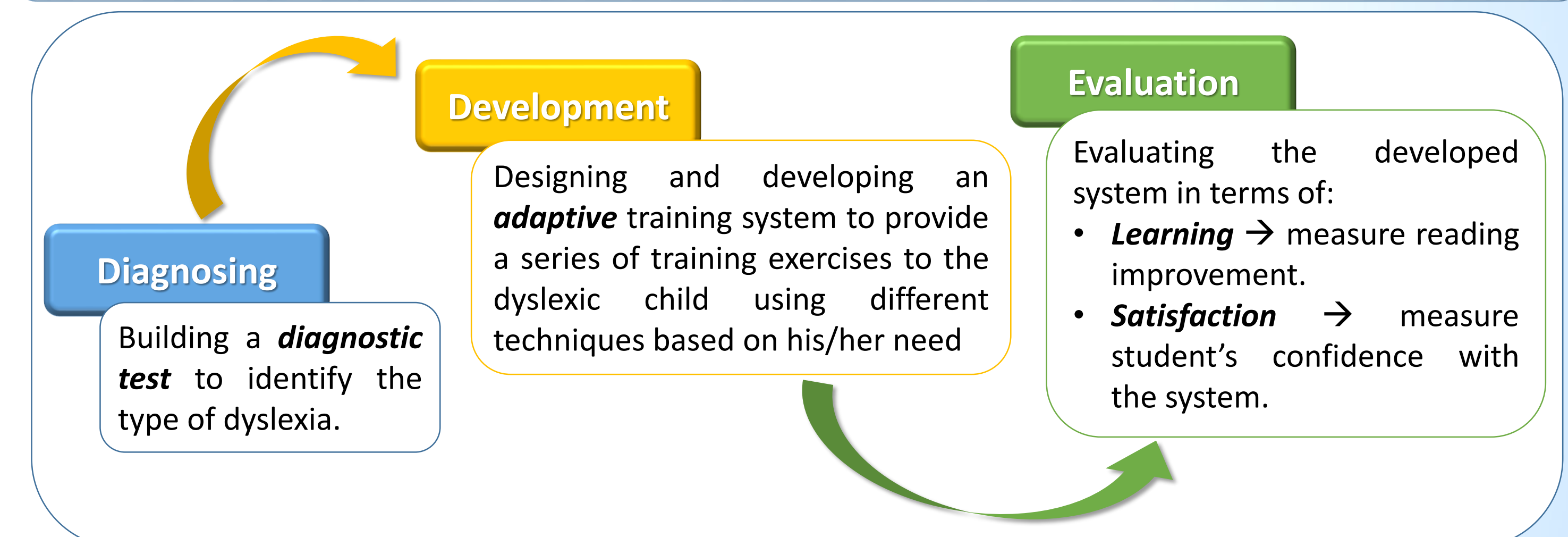
References

[1] <https://bit.ly/2G1mBcc>

[2] N. Friedmann and M. Haddad-Hanna, "Types of developmental dyslexia in Arabic", In Handbook of Arabic Literacy, Springer, Dordrecht, vol. 9, no. pp. 119-151. 2014.

3 Methodology

- The aim of this research is to improve the reading skill of an Arabic dyslexic student by offering a range of reading exercises through an adaptive training system.
- To achieve this aim, the research will follow three major phases:



4 Results

- A first study has been conducted to reflect the first phase of the previous methodology "Diagnosing".
- Data has been collected and analysis is in progress.

5 Conclusion

Dyslexia is a universal reading difficulty. Many research provided dyslexic individuals with several interventions to improved their reading. These interventions have treated them the same while they are different. Therefore, this research aimed to provide them with an adaptive training system based on their needs to improve their reading.

Acknowledgement

I would like to express my special thanks of gratitude to Princess Nourah Bint Abdulrahman University in the Kingdom of Saudi Arabia for giving me the opportunity to study at the University of Birmingham under its sponsorship and funding.