Republic of the Philippines

POLYTECHNIC UNIVERSITY OF THE PHILIPPINES

COLLEGE OF ENGINEERING
COMPUTER ENGINEERING DEPARTMENT

CMPE 30193

Methods of Research

THE DEVELOPMENT OF A CROSS-PLATFORM ASSISTIVE LEARNING GAME FOR CHILDREN WITH DYSLEXIA

Proponents

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Title:

THE DEVELOPMENT OF A CROSS-PLATFORM ASSISTIVE LEARNING GAME FOR CHILDREN WITH DYSLEXIA

Rationale:

About 10% of children in modern society have dyslexia, a neurodevelopmental disorder characterized by difficulties in a person's ability to read, spell, and comprehend. According to recent studies, playing video games can be a useful educational technique for dyslexic children to enhance their reading skills through involvement and participation. Educational games have received some attention from the academic community in recent years. Educational games are frequently credited with a variety of improvements to the learning process, the most common of which is their ability to raise students' motivation. Hence, games have the advantage of maintaining high motivation and can be utilized to help dyslexic children learn. However, the proponents of this study recognized the lack of exploration of devices that can potentially provide assistive learning to dyslexic children.

In line with this, this research is of great importance because a game, named “Dis Letra”, will be developed to explore the potential of gamification in aiding dyslexic children's reading skills. This game will be designed to be compatible with most devices available nowadays, namely, personal computers, tablets, and mobile phones. The game's objective is to assist dyslexic children with alphabet recognition, which is a common problem among them, such that they are encouraged to study and can recall knowledge in a fun and engaging way. Dis Letra is

a cross-platform game in the Filipino language that adopts a multisensory approach, and it is an appropriate and suitable learning ecosystem for dyslexic children. This will be developed using Unity, a cross-platform game engine that is used in developing video games for various devices including computers and mobile devices.

Statement of the Problem:

Children with developmental dyslexia have problems comprehending while having the intelligence, motivation, and schooling required for correct and fluent reading. This research, therefore, aims to create a cross-platform game that will assist dyslexic children in their challenges and the following are the specified problems that the study seeks to answer:

1. What aspects cause dyslexic children to struggle reading on their electronic devices?
2. What are the factors that help dyslexic children in reading more effectively?
3. How effective is the cross-platform game in terms of:
    3.1. Alphabet recognition;
    3.2. Educational value; and
    3.3. Entertainment
4. What features of the game contribute the most to providing assistive learning among dyslexic children?
5. How user-friendly is the interface of the game for dyslexic children?
6. What significant findings can be concluded from this study?

Scope and Limitations:

The scope of this study is to develop a game application focusing on alphabet recognition. The game will consist of different levels that will help dyslexic children to improve their ability to recognize letters and words. Moreover, the game will be based on traditional games that are commonly used by dyslexic learners. It will be available for Android, iOS, and Windows. The users of the game will get skills that will help them learn to read and gradually aid symptoms of dyslexia as a result of their participation. Furthermore, the focus of this study is limited to children ages 5 to 12 years old who are clinically diagnosed with dyslexia.

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RECOMMENDATION SHEET

Title: THE DEVELOPMENT OF A CROSS-PLATFORM ASSISTIVE LEARNING GAME FOR CHILDREN WITH DYSLEXIA

Group Code Name: 3605

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