DEVELOPMENT OF INTERACTIVE BOOK ILLUSTRATION FOR DYSLEXIA-FRIENDLY TEACHER TOOLKIT

Bachelor in Creative Multimedia
Faculty of Information Sciences and Engineering
Management and Science University
University Drive, Off Persiaran Olahraga,
40100 Shah Alam, Selangor,

saidahm337@gmail.com

ABSTRACT

Interactive books are one suitable learning media for early childhood because teachers can convey material with the concept of playing, having fun, and attracting children's interest. However, the choice of educational tools for teachers to help educate dyslexic students is not sufficient and the rise of digital games has reduced children's interest in reading books. This study aims to understand how an appropriate learning method for dyslexic children and how to foster interest in reading in dyslexic students by using interactive books. The data was collected by distributing research questionnaires and interviews because the method used was mixed methods. Developing interactive book illustrations for dyslexia-friendly teacher kits involves creating easy-to-use and attractive designs that are tailored to the needs of dyslexic students. This requires dyslexia research and analysis, concept development, design and prototyping, user testing, final design and development, and deployment and maintenance. Illustrations should be adapted to the needs of dyslexic students and enhance their reading experience through easy-to-use strategies and interactive features. Continuous maintenance and updates must be provided to ensure the effectiveness of this tool. The tool should include interactive features that enhance the reading experience and be updated regularly to ensure effectiveness.

Keyword: Interactive books, Dyslexia, Learning method

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ABSTRAK

Buku interaktif merupakan salah satu media pembelajaran yang sesuai untuk kanak-kanak awal kerana guru dapat menyampaikan bahan berkonsepkan bermain, berseronok, dan menarik minat kanak-kanak. Bagaimanapun, pilihan alat pendidikan untuk guru membantu mendidik pelajar disleksia tidak mencukupi dan kebangkitan permainan digital telah mengurangkan minat kanak-kanak membaca buku. Kajian ini bertujuan untuk memahami bagaimana kaedah pembelajaran yang sesuai untuk kanak-kanak disleksia dan bagaimana untuk memupuk minat membaca dalam kalangan pelajar disleksia dengan menggunakan buku interaktif. Data dikumpul dengan mengedarkan borang soal selidik kajian dan temu bual kerana kaedah yang digunakan adalah kaedah campuran. Membangunkan ilustrasi buku interaktif untuk kit guru mesra disleksia melibatkan penciptaan reka bentuk yang mudah digunakan dan menarik yang disesuaikan dengan keperluan pelajar disleksia. Ini memerlukan penyelidikan dan analisis disleksia, pembangunan konsep, reka bentuk dan prototaip, ujian pengguna, reka bentuk dan pembangunan akhir, serta penggunaan dan penyelenggaraan. Ilustrasi harus disesuaikan dengan keperluan pelajar disleksia dan meningkatkan pengalaman membaca mereka melalui strategi yang mudah digunakan dan ciri interaktif. Penyelenggaraan dan kemas kini berterusan mesti disediakan untuk memastikan keberkesanan alat ini. Alat ini harus mengandungi ciri interaktif yang meningkatkan pengalaman membaca dan dikemas kini secara berkala untuk memastikan keberkesanan.

Keyword: Interactive books, Dyslexia, Learning method

CHAPTER I

INTRODUCTION

1.1 Project Background

Dyslexia is a unique learning condition characterized by difficulties in expressing or receiving spoken or written work. These difficulties might manifest in reading, speaking, listening, and writing (Michael. R. Clement, in Weiner, 2003). Dyslexia denotes language difficulties in the Greek language (*dys* = difficult; *Lexia* = language). Dyslexia occurs in persons with ordinary intelligence potential; nevertheless, many dyslexia's have intelligence levels much above average. Most average people understand dyslexia as a disorder in which a child has trouble learning to read, is lazy to write, if he writes many letters lost, is unable to count, etc. However, dyslexia is not at all simple.

Reading, writing, and arithmetic impairments are the first school-age manifestations of dyslexia. His ability in this field is typically inferior to that of his classmates. Children struggle to recognize letter forms, letter names, and letter sounds and to read and write words. When writing or copying from the chalkboard to the book, it is not uncommon to lose several letters or even a few words. Therefore, the capacity to communicate spoken language is a clear sign of dyslexia in preschoolers. Typically, children with dyslexia are stated to be late talkers, whereas what is meant is a youngster with age-appropriate comprehension of numerous instructions but a restricted vocabulary when speaking.

In addition, children appear frustrated and disorganized in their daily activities, as many books are left behind, homework is forgotten, the contents of the backpack are falling, pencils or food containers are always missing, and it is difficult for them to focus their attention for an age-appropriate amount of time. This child also has difficulties performing things in the correct order and structure; all of his actions appear disorganized, and he lacks the motor coordination skills necessary to perform tasks such as tying his shoes, opening the lid of his food container, and changing his uniform.

Many guidelines govern the instruction of dyslexia youngsters. Teachers in both general and special education conduct research on modifications that enhance the learning and classroom management of students with dyslexia. The initial step is to develop dyslexia-friendly classrooms where teachers are aware of the disorder (Reid, G. 2009). The more a teacher knows about dyslexia, the more effectively he or she can assist students with dyslexia. The dyslexia-friendly approach is based on the assumption that what is beneficial for children with dyslexia is beneficial for all children. In addition, schools must commit to recognizing, respecting, and supporting dyslexia children by employing at least one person with training in learning disorders who will guide or assist other staff members in determining what is appropriate for children with dyslexia.

This study aims to assist teachers in adding a variety of interesting and fun learning methods to improve reading, spelling, and writing skills for dyslexia students by using interactive books. Interactive books are bound sheets of paper that can carry out actions, and interrelationships, and be mutually active.

1.2 Problem Statement

In several cases that can be found related to learning methods for dyslexia children, some teachers still generalize teaching methods between dyslexia students and general students, which of course this method is not appropriate for dyslexia students and makes them lag behind the others and results in social inequalities that make dyslexia children insecure. In addition, there are still several interactive books available for dyslexia children. Parents also cannot arbitrarily assign teachers to teach their children. This can make children experience an unpleasant experience.

In that case, the researcher found at least 3 problems related to the current situation, namely:

a.   Inadequate means of interactive learning media for dyslexia students.
b.   Lack of variety of learning methods in teaching dyslexia students.
c.   Many interactive games make children lose interest in reading books

1.3 Objectives of the Project

Research studies designed to assist teachers in improving the learning process for dyslexia students have specific objectives, namely:

a.   increasing learning media facilities for dyslexia students, namely by having interactive books.
b.   Assist teachers in adding a variety of interesting and fun learning methods to improve reading, spelling, and writing skills for dyslexia students by using interactive books.
c.   Fostering interest in reading in dyslexia students by using interactive books

1.4 Scope of the Project

1.4.1 Project

This research project will develop an interactive dyslexia-friendly book, which aims to assist teachers in teaching dyslexia students.

1.4.2 Target audience

The target audience for this project is teachers with dyslexia students aged 4-6 years or kindergarten school students. because at that age, the symptoms or characteristics of children who have dyslexia are already visible. so that it is expected that teachers can apply appropriate methods in teaching dyslexia students.

1.4.3 Demographic

This project will focus on kindergarten school teachers and/or tutors for dyslexia students. The data collection itself will be carried out in Shah Alam, Malaysia by distributing questionnaires

1.4.4 Physiographic

Numerous studies indicate that genetic factors play a significant role in the development of dyslexia. There is a 40% probability that a dyslexia parent may pass on his condition to his son. 50% of the offspring of dyslexia parents are also dyslexia. According to a study, if one child is dyslexia, 50% of their siblings are also dyslexia. Numerous genetic studies have proven the existence of a "dyslexia gene" situated mainly on chromosome 6, the chromosome responsible for various autoimmune disorders.

1.4.5 Geographic

This project will be executed in Shah Alam, Malaysia.

1.5 Significance of the Project

People with dyslexia have difficulty identifying spoken words and converting them into letters or sentences. Dyslexia is a neurological disorder in the part of the brain that processes language.

Teachers can use the Fernald method, often known as the multisensory or VAKT (visual, auditory, kinesthetic, and tactile). The teacher can write the word to be learned on paper or a book with crayons or the like. Then, the child can trace the writing with his finger (tactile and kinesthetic). Here the child also sees the report visually and the child is asked to say it aloud. This learning can be repeated with the help of interactive books so that children recognize letters and remember them, and children can write the word correctly without looking at examples.

The significance of this project is theoretically expected to contributed to developing learning methods for dyslexia children, especially in the school environment. In practical terms, the result of this project is expected to make it easier for teachers to teach dyslexia students.

1.6 Definition of Terms

1.6.1 Children

According to the legal definition of a child, which stipulates that the age limit for a child is someone who has not yet turned 18 (eighteen) years old, a child is someone who is still tiny, whether male or female, who has not yet noticed the physical indicators of an adult.

1.6.2 Dyslexia

Reading, writing, and spelling issues are brought on by dyslexia, a learning disability. The brainstem experiences a neurological breakdown due to this learning deficit. This area of the brain handles language processing. As long as it was handled correctly, however, this issue had nothing to do with a person's IQ. Average IQ and typical vision are also characteristics of people with dyslexia. With tutoring or special education programs, most dyslexia children perform well in school. The closest family and friends' emotional support is crucial.

1.6.3 Book

according to *Kamus Besar Bahasa Indonesia*, a book is a paper that has been bound, has writing on it, or is blank and is called Balai Pustaka. A book written or printed with the pages bound on one side or in the position it was designed for publication, according to the Oxford Dictionary. A book is considered adequate if it can attract the attention of the intended readers to learn more about the subject matter. The success of a book depends on its design, which must be able to convey those aims and objectives.

1.6.4 Illustration

According to Rohidi (1984:87), illustration is the depiction of something using visual elements to better explain, clarify, or embellish a text so that the reader can experience directly the motion qualities and the feeling of the offered story.

1.6.5 Illustration Book

The term "illustrated books" refers to books that provide visuals of an article through the use of drawing, photography, or other art techniques. Through the process of drawing, thoughts are transformed from verbal to visual. The concept was then communicated via media in the form of paper sheets. (Ars, Journal of Fine Arts, Volume 4, Number 4, 2007: 10).
Therefore, it can be concluded that a children's illustration book is a collection of paper pages bound and protected by a thicker cover that contains or carries a certain theme by relying on collaboration between verbal language, namely text, and visual language, namely images. with children as the main audience of readers of the book.

1.6.6 Interactive Book

Interactive books are an effective medium for teaching lessons to children since they not only include messages but also have an interactive component that allows kids to use their imagination while also serving as a plaything. Children not only study but also have a fun component. Children can be amused by reading books. Since it can help kids understand the story's substance effectively, the usage of illustrations in this situation is crucial. Children can be inspired to read books all the way through by engaging in interactive roles.

1.6.7 Student

Along with the factors, objectives, and instructional strategies of the teacher, students or learners are one of the elements of teaching. The student is the most essential member of the group, according to one of the components.

1.6.8 Teacher

A teacher has committed their life to instruct, guiding, and preparing their students to comprehend the science they are learning. In this situation, the instructor can serve as an example for his students by teaching outside formal education.

1.6.9 School

School is more than just a place to increase understanding and knowledge. The fact that teachers and students can study and observe their surroundings together in schools, as well as where pupils can develop their identities, is what matters most. Schools have the power to mold students' personalities and teach them how to treat others and the environment with respect.

1.6.10 Learning Method

A learning method is a methodical approach to working that makes it easier to integrate learning in the form of concrete stages that are specifically implemented so that an effective learning process takes place to accomplish a specific goal, such as positive improvements in students.

1.7 Assumptions and Limitations

1.7.1 Assumptions

Several assumptions after this project were completed were that it could add variations to teaching methods and assist teachers in teaching dyslexia children. interest in reading in dyslexia children. with interactive books, dyslexia students can learn while playing with their teachers so that learning becomes more effective.

1.7.2 Limitations

Researchers have never studied the behaviour of dyslexia children directly, therefore there may be limited knowledge about the behaviour of dyslexia children. researchers come from different countries so there are cultural differences that allow research results to depend on the sample area studied. the researcher will carry out a cultural understanding of the samples studied first to adjust the desired results. besides that, interactive book references about teaching methods for dyslexia children are still rare to find.

CHAPTER II

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Summary

Dyslexia students are individuals with a learning disorder that affects their ability to read, write and spell accurately. with the proper support and accommodations, they can overcome these challenges and excel in other areas such as problem-solving and critical thinking. with the right interventions, dyslexia students can succeed academically and reach their full potential.

Unfortunately, for now, the learning methods given to dyslexia students are still limited and most of the existing methods are conventional methods. Conventional learning methods are indeed very helpful and cannot be replaced. Even though in this digital era, the use of technology is very helpful for all human problems, as well as for the teaching and learning process.

This study aims to find new learning methods for dyslexia students that are easy and fun by using interactive books and existing technology, namely Augmented Reality. That way, dyslexia students can more easily understand learning to read, write, and spell in a fun and educational way.

This study uses a mixed methodology to obtain a new interactive book learning method. In this study, the instruments used were interviews and questionnaires to obtain more complete data to support research.

5.2 Conclusion

After seeing the results of the questionnaire, it can be concluded that:
a.   Overall, the interactive book is quite satisfying and well conveyed
b.   The interactive book is sufficient to meet expectations in dealing with challenges related to dyslexia students
c.   tutorials on using AR are still lacking, but they are quite easy to understand.
d.   illustrations, alphabet, AR, 3D objects, animations, and sounds need to be fixed or improved
e.   interactive books can help the learning process of dyslexia students

5.3 Recommendations

Based on the results of the questionnaire and year-end assignments, there are several things that can be added to make the interactive book more effective. the first is to provide additional instructions on how to use AR, such as video tutorials. secondly, add animation to the 3D object. and the last is to add learning all the letters of the alphabet.