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**2019** **UTeM**

INTERNATIONAL e-LEARNING  
CARNIVAL & CONFERENCE

2019 INTERNATIONAL e-LEARNING  
CARNIVAL & CONFERENCE  
**CONFERENCE PROCEEDINGS**

26<sup>th</sup> June 2019, UTeM, Melaka



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## WELCOMING MESSAGE BY CHAIR

Assalamualaikum wrt. wbt. and Good Day.

Alhamdulillah.

2019 International Carnival & Conference on e-Learning UTeM (eLCC2019) acts as a platform to promote, explore and share best practices and global expertise in e-learning application at higher learning institutions. The events and activities include competitions, exhibition and conference. The focus of eLCC2019 is on showcasing best practices, innovations, researches and products in e-Learning. eLCC2019 received 71 local & international participants in the categories of Virtual & Augmented Reality, Gamification, Blended Learning, Flipped Learning, Massive Open Online Course (MOOC), e-Assessment, Intelligent Tutoring System (ITS), Virtual Learning Environment (VLE), Learning Management System (LMS), Personalized Learning Environment (PLE), e-Portfolios, Learning Analytic, Global Classroom and Mobile Apps. The eLCC2019 conference is held at Universiti Teknikal Malaysia Melaka on 26th June 2019.

The eLCC2019 was organized by Centre for Instructional Resources & Technology (PSTP), Universiti Teknikal Malaysia Melaka, in collaboration with MIEPTA (Majlis Ketua-Ketua Penyelaras e-Pembelajaran IPTA Malaysia), Pervasive Computing & Educational Tools (PET) Research Group, and sponsors.

On behalf of the organizing committee, I would like to take this opportunity to express our gratitude to all who have worked hard and hence contributed to the success of this event.

Thanks also to the Advisory Committee and last but not least to all the working committee members. Without their tireless effort, hard work and commitment, this event would not be possible.

**Professor Ts. Dr. Sazilah Salam**

eLCC2019 Chair,

Universiti Teknikal Malaysia Melaka (UTeM)

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# Kiddo Disleksia Mobile Application: A Dyslexia Screen Tool in Malay Language

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**Keywords:** Dyslexia, Kiddo Disleksia, Screen Tool, Malay Language.

**ABSTRACT** – Identification of potential dyslexic among Malaysia student is crucial to ensure earlier intervention is given. Current practice in the Malaysian school system, screening test has been given based on teacher's observation and intervention. The low number of student enrol in special education indicate this task is difficult. It is due to untrained and lack of awareness regarding dyslexia among Malaysia teacher. Therefore, the easy, simple and accurate screen test tool are required. Kiddo Disleksia, a dyslexia screening tool based on mobile application has been designed and developed. The application exploits the uses of text, video, audio and graphic in multimedia to screen student with dyslexia based on visual and auditory. Kiddo Disleksia is developed by using Malay language as it's specifically develops for student in earlier learning to recognize and distinguish the alphabet. Besides, this application able to use as learning tool for dyslexia student to identify alphabet letter and phonic (alphabet sound). The mobile gamed based approach is used to screen the student with fun and innovative way. A usability study has been conducted towards 20 dyslexia students and result shows 85% of respondent feel the application able to help them learn easier. They agree that Kiddo Disleksia able to screen the dyslexia student with fun and easy way.

## 1. INTRODUCTION

In Malaysia, Ministry of Education recognized dyslexia as a kind of Specific Learning Disabled (SLD) and the students are included in special education program. Current practice in the Malaysian school system, screening test has been given based on teacher's observation and intervention. Identify dyslexia among student is proved difficult task. Enrollment statistic of SLD student at special education school is 53,617

students in 2016 which represent 1.05% of Malaysian student. The enrollment percentage is smaller than expectation since the expert estimate 5%-10% of population having dyslexia [1]

International Dyslexia Association (IDA) define dyslexia is a specific learning disability that is neurobiological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and by poor spelling and decoding abilities. Dyslexia is not disease and it doesn't have the cure. Earlier intervention is crucial to ensure early intervention program and support are given to them. Past researcher [2] indicate the lack of awareness of dyslexia among Malaysia and unexperienced teacher which may lead to misjudge student even before screen test given. Therefore, the easy, simple and accurate screen test tool are required.

Multimedia is proven as effective learning tool to SLD students. ICT technology like touchscreens, accelerometers, gyroscopes, voice recognition, sound reproduction, powerful processing and wide availability of mobile device are among tools that are very useful [3]. The multisensory approach uses visual, auditory and kinesthetic is very helpful in teaching the learning disabled [4]. The same approach is applied to screen dyslexic student with fun and innovative way.

## 2. METHODOLOGY

At the beginning, it was understandable that for the design of such an mobile application, we needed to use good methodology design for development. Differentiating from the traditional software development methodologies, a combination of Addie Model provide sufficient development methods for software or application development cycle. Figure 1

show Addie model for software development



Figure 1: Addie Model

Based on recurring analysis, design, and evaluation cycles, rather than a linear design processes, we gathered the results which occurred from the final evaluation and we were able to improve various elements of the application during its stages of development

### 3. RESULT AND DISCUSSION

Kiddo Disleksia is a mobile application build as dyslexia screening tool. This application is focusing on earlier learning student as they in process to learn recognize and distinguish the alphabet. Instruction in this application is written in Malay to ensure the students able to understand and react as per instruction. Kiddo Disleksia is suitable for student between age 5-10 years old. The application has following objectives i) to assist alphabet identification and phonic ii) to motivate dyslexic student to learn and read and iii) to screen dyslexic student in easy and fun way.

Letter identification is the first step for dyslexic student before they begin to read and write. The skill requires the children to recognize, memorize and repeat the process again, again and again. Kiddo Disleksia employs multimedia element such text, graphic audio and animation in letter identification and phonic blended with multisensory approach. Gamification Based Learning is used as approach to ensure student able to play without any feel being screening. The students require to play alphabet games to distinguish the alphabet based on screen. With game based approach, student more concentrate and less pressure during the screen test.



Figure 2: Kiddo Disleksia Interface Design

A usability study has been conducted towards 20 dyslexia students at Special Education School Batu Pahat. 85% of respondents feel Kiddo Didleksia able to help them learn easier. They also comment that they feel enjoy play game rather than been screening. Respondents also agree that the application able to give awareness to public about dyslexia.

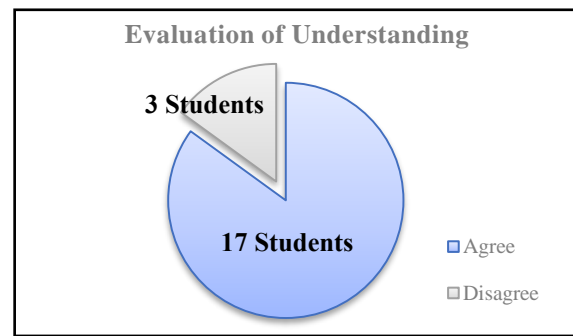


Figure 3: Evaluation of Understanding for Kiddo Disleksia Application

The students with different levels of dyslexia indicated differences in the duration of each test, while the students with mild symptoms of dyslexia completed the tests much faster than the others. Also, the students with mild dyslexia demonstrated higher reading recognition and comprehension compared to the students who showed severe dyslexia symptoms. Those groups of students didn't differ significantly in spelling or listening.

Kiddo Disleksia able to commercialize as teaching tool, earlier learning tool and screen test tool to dyslexic student. It has potential for further research in the teaching and learning for dyslexic student. The innovative features of this application are:

- a) Identification of alphabet and phonic.
- b) Learning can be at anywhere and anytime.
- c) Learning process more enjoyable and interactive.
- d) Screen test are able to done at anywhere and anytime.
- e) Screen test in fun and enjoyable mode.
- f) App able to use to motivate and draw student attention.

### 4. CONCLUSION

Given the possible benefits of a smartphone or mobile application for children with different learning requirements, we dedicated on designing a mobile application which is focused at improving children's fundamental learning skills through the use of unconventional technology advancement (m-learning). We focused on developing a mobile application which could potentially substitute learning and hopefully helping a children with their learning problems by cultivating some of their elementary skills, such as language abilities.

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