



A Systematic Review of Literature on Learning Application for Dyslexia Children

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Research Highlights

This study emphasizes on the analysis of article review which was categorized under three themes, namely overview of learning applications, evaluation of usability application and effect of the application towards dyslexic's performance. The results indicated that only five learning applications in English Language for children with dyslexia. Learning application can attract interest of children with dyslexia and keep their focus in learning. The meta-analysis results revealed that the mobile learning application is able to improve the dyslexics' performance in reading, writing, spelling and Mathematics.

Research Objectives

This meta-analysis was done to synthesize the existing studies related to learning applications for children with dyslexia. The study focused on three aspects - overview of learning applications, evaluation of usability application and effect of the application towards dyslexic's performance.



Methodology

The research papers published between year 2012 to 2018 were searched and downloaded by using electronic databases, such as Google Scholar, SpringerLink, ScienceDirect, ACM Digital Library, IEEE Xplore Digital Library, Science Publications and ERIC. There are 20 articles which fulfilled the criteria adopted and were analyzed according to the three themes.

Results

The results of this systematic review were classified into three main themes which covered the learning application, evaluation of usability application and effect of the application towards dyslexic's performance. From the twenty papers which were reviewed, seventeen of them were related to the new development learning applications for children with dyslexia. one of review article discussed the effect of the existing application towards dyslexic's performance, while the rest focused on doing research field works before starting the development of learning applications. There were only five learning applications developed in English Language - (Borhan et al., 2018; Mohamad & Samsudin, 2016; Tariq & Latif, 2016 ; Balakrishnan et al., 2015; Skiada, Soroniati, Gardeli, & Zissis, 2013). Evaluation of usability aspect revealed that the children were eager to explore and continue to play the game in the mobile application if credit or score was used (Madeira, Silva, Marcelino, & Ferreira, 2015; Ahmad, Jinon, & Rosmani, 2013). Children with dyslexia were attracted by smooth animation and nice graphic in learning application as well. (Madeira et al., 2015; Saputra & Risqi, 2015). The review also discovered that most of these studies revealed significant improvement in performance on reading, spelling or writing after using the learning application.

Findings

From the result of meta analysis, development of learning application particularly in English Language for children with dyslexia is limited. These children enjoy their learning when using application as a learning gadget and they requested for more content while using the learning application. They prefer practice and complete the tasks using mobile device rather than on paper. Findings from this study revealed that learning application has an impact on improving writing skills of children with dyslexia as compared to traditional training method. Students with dyslexia were able to sound out the words accurately and have better spelling after using the mobile application. Besides the improvement in language, there were positive improvements in addition operation and subtraction operation question (Mathematics) after using the mobile application.



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