TABLET TECHNOLOGY TO ENHANCE LEARNING MOTIVATION FOR SLOW LEARNERS

BY

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ABSTRACT

The use of tablet technology has presented a new ambience in a way of learning for children including the learning disabilities and slow learners. The research has been conducted to achieve the objective as to enhance the motivation learning for the slow learners with the use of tablet technology. Apparently, the slow learners have challenges and difficulties to understand complex instructions and taken longer time to catching up in learning. Therefore, the learning for slow learners needs to be different from the traditional learning which practices for the normal main-streams children. The research has foreseen as the learning for slow learners need to include the features such as the animations, audio, graphics and colours. Basically, tablet technology is embedded with these features. Thus, the research has undergone six weeks of observations with a group of ten slow learners in a sub-urban school in Southern Malaysia which consist of the Special Education Integrated Program. During the observations, each slow learner was given the experience of using the tablet technology after the session of traditional learning. The slow learners were required to perform tasks based on the topics learned during the traditional learning. The slow learners were observed by the researcher through the note taking during the traditional learning and with the use of tablet technology sessions. Three of the slow learners' teachers were also involved to observe and evaluate the slow learners especially on the motivation aspects. Interviewed sessions were conducted with the teachers to grasp their perspectives and to support the use of tablet technology as part of the learning tools for the slow learners. The findings of the research has identified as the audio, graphics and the ability to touch and swipe the screen of the tablet device enhanced the motivation of the slow learners in their learning. The research has resulted as the use of tablet technology has increased the attention of the slow learners and they were more focused during their learning. They seemed to enjoy and excited to perform tasks with the tablet technology. The used of the tablet technology has developed the confidence level and the slow learners became fearless with their learning. The research has suggested as the use of tablet technology as the educational and complimentary tool in order to assist the teachers for the slow learners' learning. The research has also followed to recommend several lists of features and guidelines recommendations to assist the apps developer to develop the apps in the tablet technology specifically for the slow learners' users. These contributions and recommendations could benefit the teachers, the apps developer and the policy maker for reducing the digital gap among the slow learners.

خلاصةالبحث

إن استخدام تكنولوجياالأجهزة اللوحية و التي تسمى بال (Tablets)في مجال التعليم قد فتح الابواب لمشاريع طموحة وبشكل خاص تعليم التلاميذ ذوي الأعاقة والتلاميذ ذو القدرات الاستيعابية البطيئة. هذه الدراسة استقصت الفرص المتاحة لاستخدام هذه التكنولوجيا مع التلاميذ ذوي القدرات الأستيعابية البطيئة. الطلاب بطيئ التعلم قد يحتاجوا استخدام اساليب اخرى مختلفة عن التلاميذ الطبيعين. هذه الدراسة تنبئت ان اضافة تطبيقات صوتية ورسومية وغنية بالالوان مع التلاميذ بطيئ الاستيعاب سوف تساعدهم لحد ما. ومن أجل هذا, هذه الدراسة قامت بتجربة استخدام تكنولوجيا الأجهزة اللوحية (Tablets)التي هي غنية بالتطبيقات الرسومية والصوتية المفيدة لعملية التعلم مع التلاميذ ذوي الأستيعاب البطيء. من أجل هذا قامت هذه الدراسة بعملية ملاحظة لمدة ستة اسابيع مع عشرة اطفال باحد المدارس في ضواحي جنوب مملكة ماليزيا, أختيار هذه المدرسة جاء لانها تقوم بتنفيذ برنامج تعليمي يهتم بالتلاميذ بطيئ التعلم. كل تلميذ حصل على دهاز لوحي (Tablet) بعد تدريبه عليه لفترة. بعدها التلميذ يقوم بتنفيذ المهام المطلوبة. التلاميذ كانوا تحت ملاحظات الباحث وثلاثة مدرسين طوال مدة عملهم للمهام التقليدية وباستخدام الجهاز اللوحي. بالأضافة الى ذلك قام الباحث بمقابلة هؤلاء المدرسين من اجل التعرف على وجهة نظرهم باستخدام الجهاز اللوحي في عملية تدريس التلاميذ ذوي التعلم البطيئ.
النتائج اظهرت ان الطلاب اظهروا حماساً كبيراً لإستخدام الجهاز اللوحي في التعلم بسبب وجود الأدوات السمعية والبصرية والرسومية. النتائج اظهرت زيادة ايجابية في انتباه التلاميذ ذوي التعلم البطيء مع زيادة واضحة بمتعة التعلم. بالأضافه الى تحسن واضح بالثقة وقلة الخوف من التعلم. من التوصيات التي يمكن تقدمها هذه الدراسة هو انه هناك تأثير أيجابي لأستخدام الجهاز اللوحي في مجال تعليم التلاميذ البطيئ التعلم. توصية اخرى من هذه الدراسة موجهة لمطوري برامج و تطبيقات الجهاز اللوحي متعلقة بأهم الصفات والمؤثرات والمحتوى الذي قد يكون مهم جداً للتلاميذ ذوي التعلم البطيئ. هذه الدراسة تشمل نتائج مهمة لمعلمي التلاميذ ذوي التعلم البطيء وصانعي السياسة التعليمية وايضاً مطوري البرامج التعليمية.

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DECLARATION

I hereby declare that this thesis is the result of my own investigations, except where otherwise stated. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at IIUM or other institutions.

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Al-Fatihah
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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF STUDY

Information and communications technology (ICT) is ubiquitously present in educational settings. Today's technology has undoubtedly invaded the education field. The expansion of technology has given a great impact to learning for the normal children and the children with special needs. The integration of technology into learning has undeniably enhanced the students' motivation in learning.

Use of technology devices in learning has evolved from interactive whiteboards to desktop computers and laptops, and until recently, the new era of tablets. It is a small operational technological device, which contains a massive knowledge base. With an intuitive touch screen capability and natural interface, students are able to navigate tremendous amounts of information and applications available across the world. Technology has enabled the creation of learning applications by developers to augment the learning applications for all including specific groups such as children with learning problems or learning disabilities (LD). The technology and applications motivate the children with learning disabilities to rise and participate in learning and retain their knowledge.

The National Joint Committee for Learning Disabilities (NJCLD), which the committee has been formed by the representatives of eight USA national organizations whom has major interest in Specific Learning Disabilities (SLD), has the most precise definition of learning disabilities. It has obtained high level of acceptance in various national associations in the United States (Hamill, 1990; Hammond 1996). According to NJCLD, learning disabilities are defined as a heterogeneous group of disorders that are intrinsic to the individual who have difficulties in the acquisition and use of listening, speaking, reading, writing, reasoning or mathematical abilities (S. Adelman & Taylor, 1993), (*National Center for Learning Disabilities*, 1990), (*LD Online: National Joint Committee on Learning Disabilities*, 1990).

The learning disabilities are also defined as children whom having varies of disorders in several areas such as in listening, speaking, reading skills and comprehension, written expression, mathematical calculation and reasoning (Smith & Strick (2010); Lee (2005). Children with learning disabilities have limitations in being able to interpret the things they see and hear. Their part of the brain may function differently, causing such disabilities that are generally linked to certain biological, genetic, or environmental factors.

In Malaysia, the Ministry of Women, Family and Community Development (MWFCD) specified the learning disabilities by mean of intellectual capabilities that do not conform to biological age. The specification is for the purposes for registering the Person with Disabilities (PWD) in Malaysia which governed within the ministry. In 2017, the registered Person with Disabilities (PWD) at the Department of Social Welfare, Malaysia were 453, 258 persons. From the registered number, 34.8% were under the category of learning disability.

Whilst, the Ministry of Education in Malaysia refers the learning disabilities through the Special Education Division, to a group of students with special needs who has learning problem in school (Special Education Division, 2012). This group of students is unable to learn in the normal mainstreams education classroom settings.

According to the National Report on the provision of inclusive quality primary and secondary education on 2009, the special needs students in Malaysia are categorized into three main disabilities; the hearing impaired, the visually impaired and the learning difficulties. Students with Down syndrome, Autism, ADHD, Minimal Retardation, and Specific Learning Difficulties such as Dyslexia, Dysgraphia and Slow Learner are in the Learning Difficulties (LD) group. (*National Report on the provision of inclusive quality primary and secondary education*, 2009).

The Kiwanis Disability Information and Support Centre (KDISC), a centre for disability services and a centralized body in the Malaysian Disability Network defined Learning Disability as a term that refers to a group of disorders (*Kiwanis Disability Information and Support Centre*, n.d.). It is the neurological disorders that affect the brain's ability to receive, process, store and respond to information. The term 'learning disability' is used to describe the seemingly unexplained difficulty a person of at least average intelligence has in acquiring basic academic skills. These skills are essential for success in school and work, and for managing with life in general.

A learning disability is a lifelong situation, which may impact the person daily routine in school, work and social life. Their developments and abilities are slower compared to the normal people. This could be a barrier for them to lead their life normally. However, the learning disabilities can be assisted to become successful in life. The meaning of success for learning disabilities is to make them be able to be inclusive among the community and motivate them to learn. The research is ambitious

to encourage the learning disabilities, specifically for the slow learner to learn and enhance their motivation in learning.

1.2 PROBLEM STATEMENTS

Literally, the need to encourage the learning disabilities on learning is necessary and essential. In this research is subject to the slow learners. The slow learners are children of below average intelligence, whose thinking skills have developed significantly more slowly than the norm for his or her age. Their development is significantly slower rate compared to the normal basic children. One of their characteristic is difficult to understand specific steps of task which lead to discouragement in learning. Thus, the research has objective to enhance their motivation to learn with the encouragement of using technology which specific to tablet technology.

Chen (2010) who was a senior fellow from the George Lucas Educational Foundation has mentioned, if the technology is able to motivate students, and then use them. He alluded that technology has a broader platform such as images, multimedia, games, videos and simulations which could be applied to teaching and learning (Chen, 2010). This is a remark towards the traditional world of learning with black text on white pages and white chalks on the blackboards.

Apparently, some researchers discovered that the technology may be able to assist in enhancing the learners' learning (Li et al., 2009; Patchan & Puranik, 2016; Sung et al., 2016; Urdan & Schoenfelder, 2006). However, there is little research focusing on the slow learners specifically and the learning disabilities generally. In addition, most of the researches are unable to scrutinize the empirical side of the use of tablet technology in learning. It is essential for every teacher who is involved in technology integration in school to develop their teaching. As effective teaching is a

complex process, the teachers' readiness in applying tablet technology is definitely important (Monroe-Ossi, H., Ohlson, T., Wehry, S. & Fountain, 2013).

In the study of Binu (2015) Dasaradhi et al. (2016) and B. S. R. Shaw (2010), to overcome the academic motivation scarcity and self-concept issues for slow learners, a close relationship with educators is necessary for them to continue to develop study skills. It is vital to encourage the students to try out different skills, which could significantly contribute to the slow learners' motivation. It is suggested as with a well-organized classroom using computer-assisted instructions generate learning skills more automatically. Apparently, it is crucial in attaining the attention of the slow learners and obtains the fluency in learning.

In the recent research on the usage of tablets and computers for various disabilities; Arthanat, Curtin, & Kontak (2013) have discovered as both technology devices increases attention towards learning. Observation has been made to the selected students with developmental disabilities, which includes children with autism. Through the study, it is observed that the technology assisted in obtaining new experiences for the children and could improve their motivation in some ways. The more attentions have been given to the task while using the devices especially the tablet. This has proven the technology is able to facilitate learning for students having various disabilities. The teachers need to be familiarized on the methods to integrate technology and its application in learning.

Falloon (2013) identified several researches in exploring factors of behaviour of students and engaging tablet technology to improve and upgrade their traditional learning methods. The studies provide broad learning values through tablet technology or mobile learning which are generally able to deliver 'anytime, anywhere' (Martin & Ertzberger, 2013). Some research explored the engagement of tablet technology in

learning and improving learning system by applying technology in general learning (Binu, 2015; Enriquez, 2010a; Andrea Alessandro Gasparini, Gasparini, & Culén, 2011; Hutchison, Beschorner, & Schmidt-Crawford, 2012; Ifenthaler & Schweinbenz, 2013;).

Through the research stated above it is clearly essential to identify the learning uses for the slow learners. It is also crucial to observe on the technology can be apply for the slow learners to use in their learning. It has been mentioned in the literature as the need of technology is able to improve the learning method for students with learning disabilities**.** Therefore, the research is determined to perceive the use of tablet technology in the learning for the slow learners in Malaysia.

The Malaysian Education Act 1996 has been reviewed with the enforcement of the Education Rules (Special Education) 1997 that creates suitable options in the national education system for special needs students. The Education Rules (Special Education) 1997 ratified that suitable intervention may be embedded in the teaching and learning of the special needs students, as elaborated in Peraturan Peraturan Pendidikan Khas (1997, n.d.); (*Dasar Pendidikan Kebangsaan*, 2012),

"... teachers are allowed to modify method and approaches in teaching and learning, time provisions in daily scheduled activities, subjects matter, and the teaching aids that are more appropriate and suited the individual needs of these special needs students for more quality education."(*Peraturan Peraturan Pendidikan Khas 1997*, n.d.)

Consequent to the Education Rules for the special education in Malaysia, the research has proceeded for preliminary study to realize the research objectives and research questions.

During the pre-study of this research, two schools were visited to have a clear view on the problems which has shown in the learning method for the slow learners. From informal interviews and observations, the classroom for the slow learners currently uses traditional methods such as using white boards, flash cards and educational charts.

There is a lack of technology embedment in the learning. Based on information received from the teachers, the motivation of the slow learner students was relatively poor, as they get easily bored with the teaching methods applied by the teachers. The researcher had made an attempt to introduce the tablet technology and randomly selected application (apps) for the slow learners on the visited school. Based on vaguely observation, the students are able to retain their attention towards the application (apps) on the tablet and they feel excited to perform more tasks.

Therefore, the learning methods for the slow learners would require improvement to be able to enhance motivation and obtain attention in classroom learning. The challenge in this research is how the ability of the tablet technology and available applications (apps) can assist and enhance the motivation to the slow learners. Identifying the available apps that meet the needs of the slow learners is essential to perceive the impact of learning for the slow learners in the classroom.

It is vital to incorporate usage of the right apps to motivate the slow learners to learn. Thus, this study presents the approach of evaluation of the apps, the use of the evaluated apps for the slow learners and observing the criteria of the design that motivates the slow learners to learn. The apps are evaluated by ensuring suitable app content with teacher's review and determining the motivation elements to be implied in the apps to engage the slow learners to use the apps in their learning.

1.3 RESEARCH OBJECTIVES

The objective of the research is to evaluate on how the tablet technology (the device) and its applications (apps) are able to enhance the learning motivation of the slow learners. The effectiveness of the apps in the tablet technology may be sufficient to improve the learning of the slow learners. Therefore, the research objectives are as below:

a. To identify the suitable methods of learning for the slow learners
b. To develop the conceptual framework for the slow learners learning methods
c. To evaluate the use of tablet technology for the slow learners in learning
d. To introduce the list of suitable features for tablet technology use in slow learners in learning

1.4 RESEARCH QUESTIONS

Through the research objectives, the study attempts to find out;

1. What are the methods uses for slow learners in their learning?
2. What framework could be proposed for slow learners in learning?
3. How is the use of tablet technology able to enhance the slow learners' motivation in learning?
4. What are the features able to inspire slow learners in using tablet technology in their learning?