EXPLORING TEACHERS' AND STUDENTS' ACCEPTANCE OF AUGMENTED REALITY AS A TEACHING/ LEARNING OBJECT IN THE ESL CLASSROOM IN SELECTED PRIMARY SCHOOLS IN KUWAIT

BY

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ABSTRACT

One of the main barriers that hinder effective ESL teaching and learning process is lack of motivation among teachers and students. The present study was carried out to explore the potentials of Augmented Reality (AR) applications on teaching and learning ESL. The main purpose of this study was to examine the AR acceptance of teachers and students in the ESL primary school setting. The acceptance was examined in relation to perceived usefulness and ease of use among teachers based on the Theory of Acceptance Model (TAM) framework. Secondly, the investigation has also gained insights into the motivation from both teachers and students based on the framework of ARCS model and engagement. The third purpose was to comprehend how teachers could implement their teaching while implementing AR in the ESL primary classrooms. The researcher has also attempted to propose a model of teaching and learning experience from the process of integrating AR-based tools into ESL learning. Other theories such as the Constructivist Learning Theory (CLT), Situated Learning Theory (SLT), and the aspect of Inner Speech via al-Mahdi's and Vygotsky's approach were adopted to underpin the research. Prior to the study, the researcher created a module by providing a training for the teachers using Gagné's nine events of instructions as the guidelines. The study was designed from a standpoint of a case study via qualitative approach through individual face to face interviews with two ESL teachers and 8 students from two selected primary schools in Kuwait. Two observations for each school were also carried out. The results revealed the following: (1) teachers and students of AR classroom context have perceived acceptance not only from usefulness and ease of use but also the willingness to use AR in the future; (2) students' engagement has been materialised from their enjoyment and interest; (3) the efficacy and practicality of the AR model framework incorporating the TAM, CLT, SLT, ARCS, and inner speech were materialised. This study has contributed to TAM with effectiveness as an additional factor. The study has also contributed to the practical importance of the designed module with strategic pedagogical approach which was used to ensure the success of the AR lessons. Finally, the Vygotskian and al-Mahdi's Islamic views on the functionality of inner speech in student learning were discussed.

خلاصة البحث

أحد العوائق الرئيسية التي تعيق عملية التعليم والتعلم الفعالة للغة الإنجليزية باعتبارها لغة ثانية هي ضعف الدافع لدى المعلمين والطلاب. وقد أجريت هذه الدراسة بهدف استكشاف إمكانات تطبيقات الواقع المعزز (AR) على التعليم والتعلم في مجال اللغة الإنجليزية. الغرض الرئيس من هذا البحث دراسة مدى قبول الواقع المعزز للمعلمين والطلاب في تعلم اللغة الإنجليزية في مدارس المرحلة الابتدائية. ولقد استند قياس القبول على عاملي الفائدة المدركة، وسهولة الاستخدام بين المعلمين في إطار نظرية نموذج القبول (TAM). وكذلك دراسة مستوى عنصر التحفيز لكل من المعلمين والطلاب في إطار نموذج ARCS ومستوى مشاركة الطلاب. بالإضافة إلى محاولة فهم استراتيجية المعلمين لدمج الواقع المعزز في تدريسهم اللغة الانجليزية بالمرحلة الابتدائية. لذا فقد قام الباحث بتقديم نموذج لتجربة التعليم والتعلم عند دمج تطبيقات الواقع المعزز في تعلم اللغة الإنجليزية باعتبارها لغة ثانية من خلال تبني نظريات متعددة لدعم النموذج مثل نظرية التعلم البنائي (CLT)، نظرية التعلم القائم (SLT) إضافة الى عنصر الكلام الداخلي، حسب نظريتي محمد المهدي وفيجوتسكي. قام الباحث قبل الدراسة بتصميم وحدة دراسية مع تدريب للمعلمين على تطبيقها، تضمنت استخدام إطار جانيي Gagné للتدريس ذي التسعة مراحل. وقد اعتمد الباحث أسلوب دراسة الحالة باعتبارها منهجية لعمل الدراسة يقوم على النهج النوعي من خلال المقابلات الفردية وجها لوجه مع اثنين من معلمي اللغة الإنجليزية، وثمانية طلاب من مدرستين مختارتين من المرحلة الابتدائية في الكويت. إضافة إلى القيام بزيارتين لكل مدرسة لملاحظة ورصد العمل الصفي. هذا وقد أسفرت نتائج الدراسة عن تحقق قبول المعلمين والطلاب لاستخدام الواقع المعزز في سياق الفصل الدراسي، ليس فقط عن طريق إدراكهم لعاملي فائدة وسهولة الاستخدام ولكن أيضًا من حيث تأكيد رغبتهم في استخدام تطبيقات الواقع المعزز في العملية التعليمية مستقبلا، ومن النتائج أيضا ارتفاع مشاركة الطلاب من خلال زيادة عاملي المتعة والاهتمام، وكذلك تحقيق الفعالية والتطبيق العملي لإطار نموذج دمج الواقع المعزز والذي يتضمن نماذج ونظريات TAM وCLT وSLT وARCS. إضافة إلى عنصر الكلام الداخلي. هذا وقد ساهمت هذه الدراسة في تحسين نموذج قبول استخدام التقنية TAM مع خلال تقديم عنصر الفعالية باعتبارها عاملا إضافيا. كما ساهمت الدراسة في عرض التطبيق العملي للوحدة المصممة بنهج تربوي استراتيجي والذي تم استخدامه لضمان نجاح دروس اللغة الإنجليزية باستخدام الواقع المعزز. تمت أيضًا مناقشة وجهة نظر فيجوتسكي، ووجهة نظر محمد المهدي الإسلامية حول وظيفة الكلام الداخلي في تطوير مهارة اللغة الانجليزية للطلاب.

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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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CHAPTER ONE

INTRODUCTION

"Do not raise your children the way [your] parents raised you; they were born for a different time". Ali Ibn Abi Talib (RA), (Moruzzi & Paterson, 2016, p. 2)

1.1 BACKGROUND OF THE STUDY

Attending to the learning demands of children with up-to-date knowledge and powerful experiences are likely to help learners undergo a happy and successful life and become good citizens for the future. It is simply meaningless to plan and teach the new generation in today's schools with the same outlook and strategies that have constantly been used over the past decades. Neither the students nor their teachers may feel motivated and satisfied while being involved in poor educational settings. Therefore, it becomes pertinent for educationists to revisit content knowledge, skills and strategies affecting both teaching and learning by making them compatible with the contemporary learning styles of the new generation in today's schools.

Life is consistently and rapidly experiencing technological changes and development in a way that no one has ever imagined. Technology has become available everywhere and entwined in almost every part of our daily routines. It has a great impact on how we live, communicate, work and most prominently learn. This increasing change has brought many effects in the area of education and language learning. A number of changes in the educational process involve the increased demand for integrating new technological resources in teaching to support teachers' work and accommodate students' learning styles. It is important to remember that upgrading the educational environment can open new horizons of creativity for teachers and students. It is also essential for reaching effective, sustainable development in language teaching and learning in order to understand, plan and relate to current and future life issues.

In recent years, children have been highly exposed to various electronic devices and technology use from the early age. Thus, children learning styles and learning needs have changed tremendously as a result of the technology evolution. Due to the advent of new interactive technologies, it has become much easier to create diverse learning environments in which children can learn by doing rather than by only copying and memorising. Since the new generation students are born in the technology era, they admire the speedy learning process, and varying and attractive technology gadgets with all the innovative applications and tools. Most traditional teaching methods such as teacher-centered lectures, reading from textbooks, and classical discussions no longer accommodate the new generation of learning English language. That is to say, with the advent of new technology, more challenges are encountered in the process of educating the new generation in terms of developing a comprehensive, understanding and competent applications to keep up with what is changing and what is not.

Based on the *Digital Natives and Immigrants theory* by Prensky (2001), two metaphoric terms are coined to identify generations in terms of technology literacy and utilisation. "Digital Immigrants" are people who live in two cultures: the pre-digital and the digital; while "Digital Natives" have been exposed only to the digital culture. This simple explanation has been developed to focus more on factors of age and technology familiarity as formed by Kennedy, Judd, Churchward, Gray and Krause (2008) who state that a 'Digital Native' is young, technologically avid and literate, while the 'Digital Immigrant' is older, less familiar and comfortable with technology. However, White, Connaway, Lanclos, Le Cornu and Hood (2012), argue that through using technology tools consistently, individuals are likely to become digitally efficient and skillful users regardless of the age factor. Despite the difference in defining each generation, the key point is that for these 'digital natives' technology has become seamlessly enclosed firmly into their lives to the point where it has become a pivotal part in their daily routine. This high involvement in technology-driven lifestyle has caused the new generation to think, communicate, behave and learn differently from the previous generations.

1.1.1 Teachers' and Students' Acceptance in Technology Use: The Perspectives of X, Y and Z Generations

Acceptance of technology use is coined from the perspectives of Theory of Acceptance by Davis (1993). Acceptance relates to the users to accept and use technology in daily lives. Despite the theory explains the acceptance from the standpoint of perceived usefulness and ease of use, other factors may affect the behaviour of an individual to use and explore the technology. In this section, the researcher attempts to comprehend the social behaviour that moulds the attitude of an individual towards technology from the different generations they were born.

Studying about different generations and the distinctive features of each generation could help educationists efficiently understand and plan to improve the learning outcomes of students nowadays. Discussing and deriving a conclusion about generation differences is not an easy task because of the discrepancies in social psychology among various scholars to explain social behaviours. Nevertheless, each generation has abundance of values, attributes, special learning preferences, as well as certain factors that differentiate generations. An important question for educators and teachers is: "Do those factors influence how people learn?" Nickie Carstarphen (2016), a trainer at North Gate Arsinio, states that the most common educational trends during a student's education considerably influence his/her learning preference. Thus, reviewing the last three generations in terms of the learning style and attitudes is likely to guide the current educational researchers in order to comprehend the technology acceptance and learning styles.

According to Jones and Shao (2011), Generation X, born between 1965 and 1980, are called "latch-key kids" because they spend longer time of the day alone and unsupervised when parents are away at work. They grow up to become street-smart but socially isolated. They begin their lives listening to and watching music videos, new wave music and electronics. At school, they are taught in units and modules. For research work, they use the index in reference books to find the information needed. They are not interested in thorough book reading from cover-to-cover. They prefer to learn in a structured environment that includes some classes and small group activities. They grow up in a non-technology-supported life and that is why they are referred to as Digital Immigrants.

Next is the Generation Y, born between 1981 and 1997. According to Jordaan and Surujlal (2013), they are also called "Millennials" because they mark the generation age around the turn of the millennium. The Millennials are exposed to simple functions of technology like doing research in a networked structure. They believe that anyone should not consider going to the library to read a but should rather head to the computer lab. Since they initiated a lifestyle marked with a technology touch, they are the first entire generation of digital natives. They receive learning in a more constructivist environment. The Gen Y population has a flexible learning environment in which they possess more developed supply of information than Generation X. Hence, the character of the Millennials is extremely affected by all these environmental factors in a way that has made them very assertive, with strong views.

The last generation is called "Generation Z", born after 1998. According to Sladek and Grabinger (2016), Gen Z individuals are referred to as "Technoholics," because they are entirely immersed in the world of technology. The age of this young generation currently spans from preschoolers to teenagers. Due to the extreme technology integrating into their lives from the early age, they are described as digital integrators or "implementers" (Bursztyn, Walker, Shelton, & Pederson, 2017). Technology dominates almost all areas of their relationships and lifestyle. This superior generation is depicted as globally focused, visually engaged and educationally transformed. It is the generation featured with experimenting Google Glass, Nano-computing, graphene, 3-D printing and driverless cars. Gen Z is incredibly connected to their gadgets which may express some features of their personality; it is a part of who they are. Gen Z is technology savvy that forms their learning style to learn differently through searching various internet resources and generating ideas and knowledge. They are brilliant at handling multitasks easily and enjoy learning through playing. Such huge ability to use technology has empowered and expanded their minds and accommodated their behaviour towards changes in the society.

Upon examining the three generations of X, Y and Z, many substantial differences are observed in terms of the learning format/environment and training focus. Table 1.1 displays the distinctive characteristics of each generation which is adapted from McCrindle's *The Generation Map* (McCrindle, 2014).

Table 1.1 General Characteristics of Generations (Adapted from McCrindle's, 2014)

Criteria	Generation X 1965 – 1980	Generation Y 1981 - 1997	Generation Z 1998 – ongoing
Broad Traits	Self-reliance Skepticism Well grounded Pessimistic	Confidence Assertive Sociable Optimistic	Task-focused Mature beyond their years Sophisticated Serious & realistic
Family Life	"Latch-key kids," Alienated as children	Very close to parents, protected as children	Most educated and provided-for generation
Learning Style	Spontaneous, interactive	Multi-sensory visual	Student-centric, Kinesthetic
Learning Environment	Round-table style, relaxed ambience	Music & Multi-Modal	Lounge room style Multi-stimulus
Defining Technology	VCR, 1976 Walkman, 1979 IBM PC, 1981	Internet, Email, DVD, 1995 PlayStation/ Xbox	Wireless technology mp3 players, plasma and LCD screens Tablet, Smartphone, visual Social Media
Attitude Towards Technology	Digital Immigrants	Digital Natives	"Technoholics"- entirely dependent on IT
Training Focus	Practical Case studies Application	Emotional Stories Participative	Multi-modal e-Learning Interactive

Despite the fact that a new generation of technology-competent students is entering our schools to pursue their learning and which has captured the attention of educational experts and researchers, there is a claim that education is not keeping pace with technology advancement in society which may negatively influence learners' attitude towards schools and education. Groff (2013) believes that emerging technologies in society are stimulating educationists to reconceptualise teaching and learning, as well as serving to enhance the standard of transformation and innovation. Learners of Gen Z (Digital Natives) tend to view Information and Communication Technology (ICT) as the major tool of their learning process because they believe that using ICT in learning makes it more motivating, inspiring, remarkable, and meaningful.

According to Bacca, Baldiris, Fabregat and Graf (2014), it is incumbent upon researchers to exploit technological innovations in hardware and software for mobile devices and cope with their increasing popularity among digital native learners.

To summarise, in terms of the common attributes, the Gen Z students who exist in today's schools are highly distinguished of as being task-focused, empowered and sophisticated who like to learn in student-centric, multi-stimulus, multi-modal and interactive environment. Moreover, the digital natives of Gen Z are extremely immersed in the technologically advanced life that drives them to become realists seeking knowledge by simply googling in more competitive and creative learning settings. All these characteristics do affirm the highly sophisticated, technology-bond mindset of Z generation that necessitates addressing the learning needs of contemporary learners as sophisticated and intelligent as they deserve (Sladek & Grabinger, 2016). Teachers who were born in the 80s may not have difficulties to accept and embrace technology in teaching. They become part of the adjusted digital natives who are sociable and participative. Thus, teachers' and students' acceptance in technology use in daily lives are highly dependent on their generations of learning styles.

1.1.2 Technology Integration in Education

If we agreed that our students have changed radically, and they are no longer fit in our educational system with traditional teaching, a practical solution must be applied. ICT, in all varied forms, can provide a creative, efficient source for supporting learning activities. When we talk about using technology in education, the term "Integration" is often brought up. This simply implies that the idea of having both teachers and learners who are capable of using technology effectively and competently in diverse school activities to enhance the overall learning process which requires a well-planned and properly applied paradigm. Bozkurt (2011) states that "the term technology integration is employed in the sense of using technology in instructional settings for the purpose of teaching a subject to the students" (p. 1). This indicates that technology is an integral part of the student learning activities.

The proper integration of ICT in student learning activities is likely to contribute to more successful improvements in the quality of learning. The appropriate and systematic integration of ICT into the classroom does not only drive curriculum implementation through supportive teaching tools making it more fulfilling and meaningful, but also promotes the learning process by adding hands-on activities and interactive learning opportunities which create more engaging settings and inspiring learners to pursue learning enthusiastically. According to Ghavifekr, Athirah, and Rosdy (2015), using technology in education increases student motivation and assists in better engagement and collaboration. Thus, students' learning quality and outcomes in a technology-supported environment are likely to be revolutionised immensely which consequently could influence the attitude of teachers towards the learning process.

For teachers, the idea of adopting advanced technology in creating daily lesson plans and managing effective and creative instructional practices can construct vivid classroom settings and lead to students learning competently. Previous researches have shown that integrating ICT in teaching would promote the whole educational process, and will have deep impact on the transactions between teachers and learners and maximize the teachers' self-efficacy (Finger & Trinidad, 2002; Groff, 2013; Jorge et al., 2003; Young, 2003; Jamieson-Procter et al., 2013).

Self-efficacy is an outstanding construct in human behaviour that determines and influences how efficiently a person reflects on his/her own capability, emotions and actions. It also indicates the sense of self-esteem (Lunenburg, 2011). The theory of self-efficacy states that people's beliefs on what they can do partially influence their performance and motivation (Bandura, 1982). Teachers' self-efficacy is a key element in controlling personal reaction and decisions in terms of the daily instructional practices. Teachers who perceive higher levels of self-efficacy are less stressful and commonly tend to use innovative teaching strategies and tools that yield increased student autonomy, greater motivation, and better learning outcomes (Nissim & Weissblueth, 2017). Nevertheless, self-efficacy is expected to be achieved since teachers are able to competently integrate technology and are able to be more motivated and self-regulate their teaching practices.

1.1.3 Technology Integration in ESL

The use of technology in English as a Second Language (ESL) classrooms is extremely supportive for learners through various innovative technologies. One of the most prominent technology approaches is Computer Assisted Language Learning (CALL). CALL has made a revolution in ESL pedagogy by providing so many functional teaching/learning tools for second language instruction by utilising abundant software application programmes that effectively improve the main language acquisition skills for learners (listening, reading, speaking, and writing). The use of CALL allows ESL students to feel empowered and validated to learn in and out of the classroom. Besides, students effectively take an active role in the learning process which provides them with continued comprehensible input in the target language and helps them to be immersed socio-linguistically. In addition, technology integration has a key role in students' attainment of knowledge through boosting their collaborative learning and interactivity (Andrade, 2014; Goodwin, 2012; Nomass, 2013; Derakhshan, Salehi, & Rahimzadeh, 2015).

When CALL is addressed to enhance ESL learning, it is so important to stress that CALL functions in conformity with the model of Technological Pedagogical Content Knowledge (TPACK) proposed by Koehler and Mishra (2006). The TPACK framework is designed for teacher knowledge as an interactive combination of three bodies of knowledge: technology, pedagogy, and content knowledge. Both theoretically and in practice TPACK is oriented towards a specific flexible knowledge needed to effectively integrate technology into instructional practices.

According to Pazio (2015), TPACK model implies that the integration of technology in learning and teaching is not context-free and is crucial to realise the connection between pedagogy and content in terms of technology. With regard to technology, CALL provides a wide range of electronic gadgets, software, and website for improving ESL learning/teaching practices. For pedagogy, CALL interactive language drills and exercises effectively help students to get engaged in collaborative, motivating environment that encourages them to think critically and pursue learning through problem-solving methods. It facilitates creating innovative tutorial activities that addresses essential common core standards and competencies of curriculum. CALL also supports the knowledge and cognitive processes as it stimulates students to respond, discuss, and interact seamlessly with the help of highly sophisticated technology tools that allow increased accessibility and ease of use for instructors and learners. Derakhshan et al., (2015) argue that CALL materials help teachers to practise the learning theories efficiently and assist learners through gamification and edutainment.

The idea that different technology has different impact on the ESL learning process is extremely critical in terms of what, when, and how such wide range of tools and applications could be embedded in classroom learning activities. According to

Lazar Stošić (2015), due to its vital role in enhancing the quality of student learning, the application of educational technology demands teachers to acquire knowledge from several areas including pedagogy, psychology, didactics, computer sciences, and informatics. Thus, it is essential to understand the basics and requirements through which different technologies can be utilised effectively and competently for a successful learning process.

Having a thorough understanding of various types of technology is likely to help educationists figure out the best and most efficient strategies to enhance the outcomes of ESL teaching and learning. According to Guri-Rosenblit (2009), technology has three main categories to support student learning and ease the implementation of classroom activities: 1) Mainstream Technology (MT) – that can be purchased from electronics outlets. MT products include laptops, handheld gadgets (iPads, Galaxy tablets, Smartphones), mp3 players, and digital cameras. Computers and laptops can be utilised by teachers to assign class work and homework to students through Microsoft Office applications as well as to illustrate visual-related videos and presentations which help students learn easily. Students can use handheld gadgets with their associated varied Android/iOS applications to learn interactively; 2) Instructional Communication Technology (ICT) – a type of technology that facilitates student knowledge acquisition and enhances learning outcomes through various innovative software and hardware, online tools, and other emerging technologies; and 3) Assistive Technology (AT) – it is a special field that focuses on facilitating physical or cognitive access to a learning content for students with disabilities. Through using these technology tools ESL teachers are able to support their students' learning and make it easy and fun to pursue learning seamlessly. When the students learn easily by using visual images and interactive methods, their teachers become encouraged to integrate more technology in