

DESIGN AND EVALUATION OF DIGITAL BOARD
GAME FOR ENHANCING KNOWLEDGE OF ENGLISH
GRAMMAR

BY

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ABSTRACT

This is a case study on the use of Throw Back Time (TBT), an interactive digital board game aimed at teaching tenses and aspect of grammar via the Mobile Assisted Language Learning (MALL). The game exclusively designed according to the Theory of Variation by Marton & Booth, emphasizes that learners understand, experience and think differently on a specific aspect of the world. As variations in the learning outcome are necessary, the game provides a variety of combinations and structures of grammar to expose learners to different aspects of learning. The application of a strategy in using the interactive digital game as part of a major research aims at presenting empirical evidence of an innovative way to teach grammar via mobile application. The study employed a qualitative content analysis in illuminating the principles of the Theory of Variation in the design of the grammar exercises in the game. A quantitative pre-test-post-test single group design was also utilized to investigate the efficacy of the game in improving the learners' understanding and knowledge of tenses and aspect. Finally, a survey questionnaire and a semi-structured interview were administered to gauge the learners' perception towards learning grammar using the game. The results generally show that the digital board game which matches the learners' level of English has somewhat improved their knowledge of grammar tenses and aspect. Hence, the study suggests that the elements in the Theory of Variation governing the exercises in the game delivers positive outcomes as the learners' performance in the series of tests improved. They considered the game to be an intriguing practice as learning of grammar used to be a daunting experience.

خلاصة البحث

يستعرض هذا البحث نتائج دراسة حالة عن استخدام تقنية "زمن العودة إلى الوراء" (TBT)، وهي لعبة رقمية متكاملة تهدف إلى تدريس موضوع الأزمنة النحوية ومتعلقاتها عن طريق استخدام الهاتف الجوال في عملية تعلم اللغة (MALL)، وقد اعتمد البحث أداتين لجمع المعلومات؛ إحداهما أنموذج الاختبار القبلي والبعدي الكمي ذو المجموعة الواحدة، والأخرى الاستبانة للإجابة عما إذا كانت اللعبة قادرة على تحسين فهم المتعلمين ومعرفتهم موضوع الأزمنة والجوانب النحوية، علاوة على قياس تصورات المتعلمين إزاء كفاءة توظيف استخدام الهاتف الجوال في عملية تعلم اللغة (MALL)، كما اعتمد البحث أسلوب تحليل المحتوى من فروع مناهج البحث الكيفي؛ لتوضيح كيفية استخدام نظرية التباين بغرض التحكم في تصميم أسئلة اللعبة، وقد صُممت اللعبة وفق نظرية التباين (Marton & Both 1997) التي تؤكد أن الطلاب يُظهرون فهمًا وتجريبًا وتفكيرًا مختلفًا حين تناولهم القضية نفسها، وإذا إن التنوع في نواتج التعلم يُعدُّ ضروريًا؛ تعمل تلك اللعبة على توفير مجموعة متنوعة من التراكيب النحوية التي من شأنها أن تُعَرِّض الطلاب لروايات مختلفة من موضوع التعلم نفسه، وإستراتيجية تلك اللعبة الرقمية التي هي جزء من بحث رئيس؛ تهدف إلى تقديم دليل تجريبي على طريقة مبتكرة لتعليم القواعد النحوية، وتناسب مستوى الطلاب في الإنجليزية إذ توفر لهم عنصر التشويق في أثناء عملية التعلم، ولا سيما عندما يكون موضوع التعلم هو القواعد النحوية التي تتصف عادة بأنها تجربة محبطة لكل من المعلمين والمتعلمين، ومن ثم؛ يتحتم على أساليب التعلم التقليدية أن تواكب التقانة لاستكمال العناصر اللازمة لعملية تعليم القواعد النحوية، وتعزيز تنمية معرفة الطلاب بها، وقد توصلت البحث إلى نتائج إيجابية في مخرجات التعلم في أثناء استخدام اللعبة الرقمية عبر توظيف استخدام الهاتف الجوال في عملية تعلم اللغة (MALL)، ومن الواضح أن تصميم الألعاب الرقمية المبتكرة قد يوفر عددًا من المقترحات لكل من المعلمين والباحثين وصناع السياسات؛ في الاستخدام الواعد للمنهج التعليمي القائم على الألعاب في المؤسسات التعليمية، وكذلك تقديم اقتراحات لدمج التقانة في عملية تعليم القواعد النحوية وتعلمها، ومن ثم تحسين جودة التعليم، وقد كشف هذا البحث عددًا من السلبيات والإيجابيات لاستخدام الألعاب الرقمية المتكاملة في التعليم والتعلم.

APPROVAL PAGE

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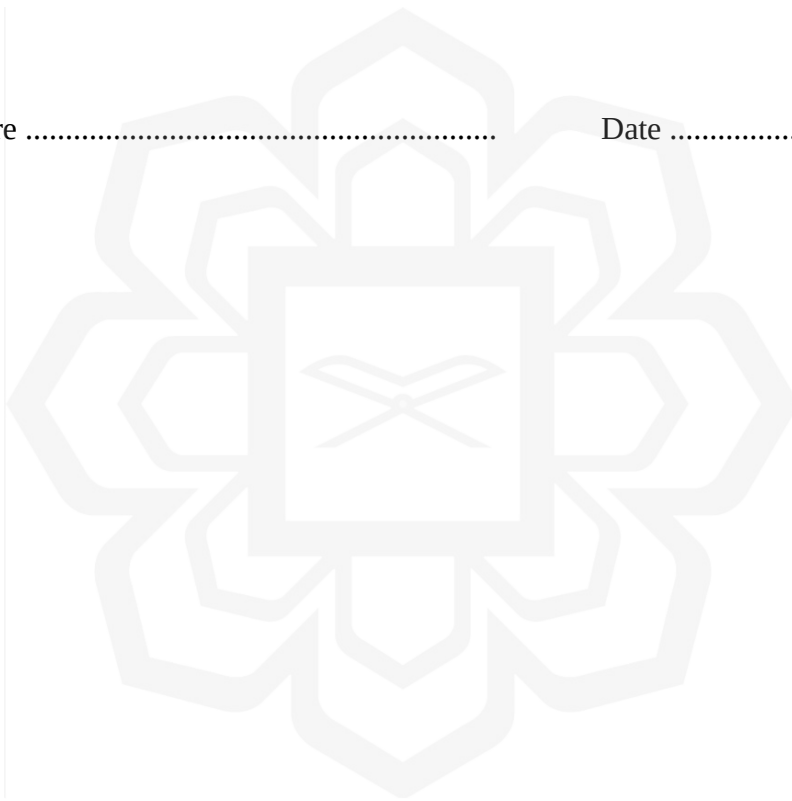
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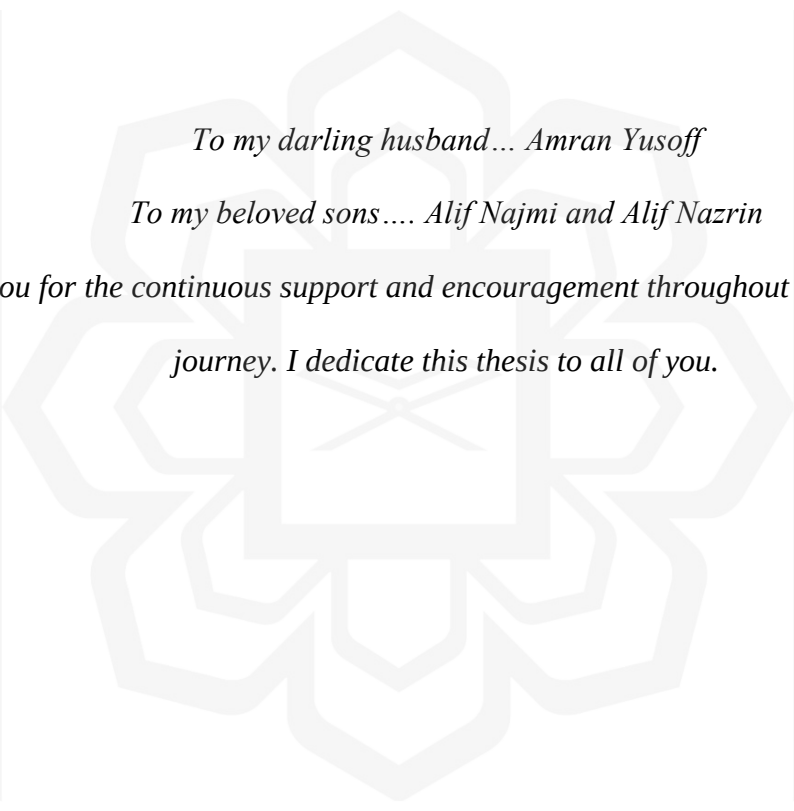
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To my darling husband... Amran Yusoff

To my beloved sons.... Alif Najmi and Alif Nazrin

Thank you for the continuous support and encouragement throughout the challenging journey. I dedicate this thesis to all of you.

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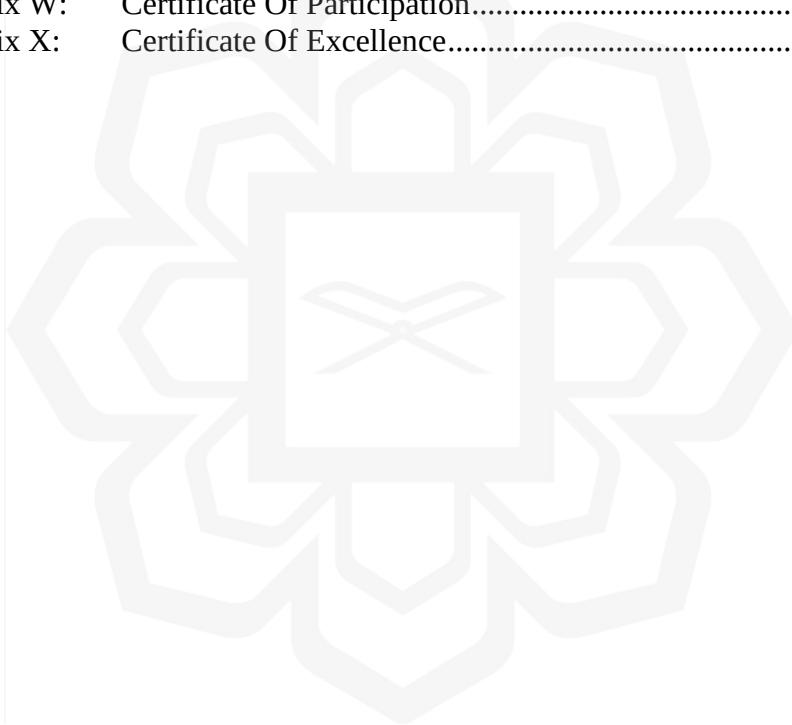
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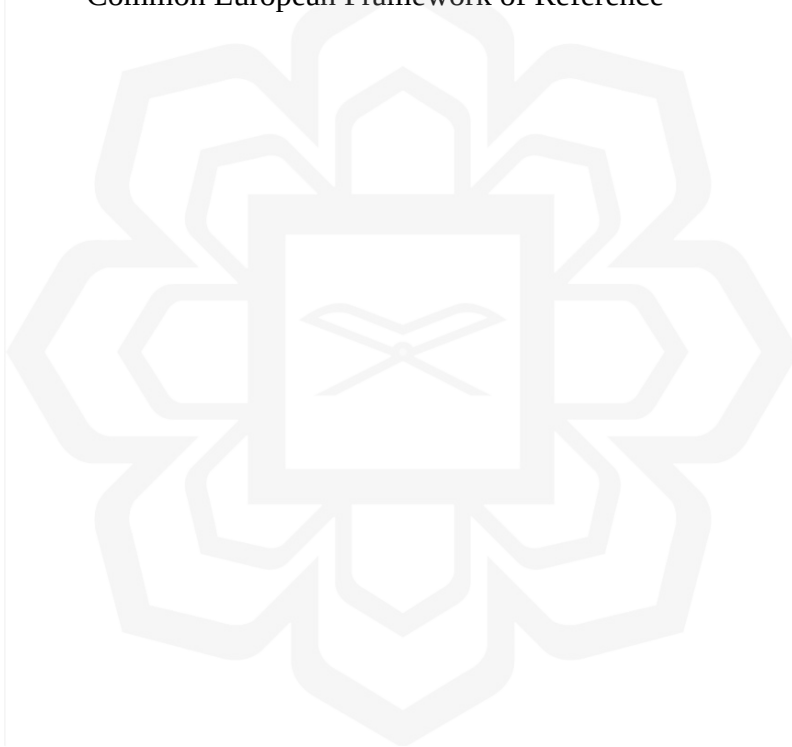
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LIST OF ABBREVIATIONS

MALL	Mobile-Assisted Language Learning
CALL	Computer-Assisted Language Learning
TBT	Throw Back Time Digital Board Game
TOV	Theory of Variation
TAM	Technology Acceptance Model
UPSR	Ujian Penilaian Sekolah Rendah (Primary School Exam)
PT3	Pentaksiran Tingkatan Tiga (Lower Secondary School Exam)
SPM	Sijil Pelajaran Malaysia (Upper Secondary School Exam)
ESL	English as a Second Language
ELSQ	English Language Standard and Quality Council
CEFR	Common European Framework of Reference



CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

English language is the most significant second language and also the medium of instruction and communication in many non-English speaking countries. In Malaysia, English is spoken and used as a second language after the British colonial era. It is also made compulsory in Primary School Standard Curriculum (KSSR) and Secondary School Standard Curriculum (KSSM). However, not all learners are capable of being operationally proficient in English and there has been a decline in the standard of English language among learners over the years (Ganapathy, Shuib, & Azizan, 2016; Mahalingam & Embi, 2017; Munir, Abdullah, Issham, & Siti Nur Afifah, 2013; Munir, Amelia, Siti Norbaya, & Thenmolli, 2015; Rozina, Tengku Nazatul Shima, Mohamed Ismail, Rahmah, & Hafiza, 2017). Poor language proficiency also affects the tertiary level learners in Malaysian universities where graduates are unable to express themselves accurately and fluently. To meet the demands of a challenging workforce, tertiary level learners need to be proficient in the English language as it is the prime business language and the lingua franca of the world today (Ganapathy, 2014; Hsiao, Cheung, Jiang, & Yu, 2016; Hussein & Shah, 2015).

The decline in English language proficiency in Malaysia led to the establishment of English Language Standard and Quality Council (ELSQC) in 2013. ELSQC provides a comprehensive and holistic plan for English Language Education Reform in Malaysia, The Roadmap 2015-2025. Adopting the Common European Framework of Reference (CEFR) as a benchmark, the roadmap produces a more conclusive plan upholding an

international education standard. The mechanism of reformation is based on quality practice in English language programme, quality in delivery system and quality in learning outcomes. In order to produce quality practice, a competent teaching workforce is highlighted in the reformation where three major success factors are necessary including getting the right teachers to teach, training them into effective instructors and ensuring that the education system is able to impart the best possible instruction for learners to be proficient users of English.

Proficiency in English entails having the knowledge of grammar rules, a crucial requirement in mastering the language (Bikowski, 2018; Chomsky & Halle, 1991; Harmer, 1991; Hussein & Shah, 2015; Larsen-Freeman, 1991, 2015; Matsumoto & Dobs, 2017; Mystkowska-Wiertelak & Pawlak, 2012; Suwantarathip & Orawiwatnakul, 2015; Tengku Nazatul Shima & Rahmah, 2012; Ur, 1996).

To achieve this mastery is unfortunately not an easy feat as grammar is often found to be a difficult component for learners of English as second or foreign language to acquire (Embi & Amin, 2010; Matsumoto & Dobs, 2017). Grammar is full of rules that can be overwhelming for learners to learn and memorise while teachers often take the conventional approach in explaining the detailed rules to the learners. Consequently, learners with different learning styles might be disillusioned as the traditional method can be rather mundane and obsolete. The most vital commitment of research demands that educators be innovative, analytical and creative with new methods of teaching and for them to be confident in promoting the new methods (Borg, 2010; Krasniuk & Kryvykh, 2016; Larsen-Freeman, 2015; Pedrazinni & Nava, 2012; Vilbar & Ferrer-Malague, 2013). Thus, educators should rise to challenge their creativity in designing their own teaching materials, experimenting and improvising them in ensuring the success of grammar teaching.

In order to deliver the best possible instruction for learners, the Education Blueprint has been established for 2015-2025 and one of the aims is to incorporate technology into the teaching and learning environment. This transformation focuses on three aspects that include ICT-enabled learning, the blended learning model and online learning which are mainly designed to prepare learners for the new challenges in the 21st century. Technology is greatly emphasized here due to its promising value in teaching and learning (Bazzaza, Alzubaidi, Zemerly, Weruga, & Ng, 2016; Garrido, Miraz, Luque Ruiz, & Gómez-Nieto, 2011; Klopfer, Sheldon, Perry, & Chen, 2011; Krasniuk & Kryvykh, 2016; Sanchez & Olivares, 2011; Schmitz, Klemke, Walhout, & Specht, 2015; Vilbar & Ferrer-Malague, 2013).

The need for a more intriguing approach to the teaching of language where content can be acquired naturally and enjoyably has led to the use of Computer-Assisted Language Learning (CALL). CALL has successfully been used in the teaching and learning of all language skills as it provides an alternative approach to meet the learners' diverse needs (Franciosi, 2017; Shehab & Zeki, 2014; Uzun, 2012; Warschauer & Healey, 1998). Technology could enhance learners' English language proficiency as it brings forth an array of opportunities and resources that could be used in the classroom or independently at the learners' own time and pace of learning.

Still, despite the many advantages of CALL, it is not readily accessible thus the Mobile-Assisted Language Learning (MALL) came into the education scene. Many studies have found that mobile devices could empower learning and serve as a powerful approach to enhance learners' language skills (Alowayr & McCrindle, 2016; Kukulska-Hulme, Norris, & Donohue, 2015; van Dijk, Witteloostuijn, Vasic, Avrutin, & Blom, 2016; Wu et al., 2012). MALL offers a more enriching independent learning experience to learners as devices like smart phones and tablets allow language learning to

conveniently occur any time and any where. This autonomous learning potential could captivate learners and optimise learning as they could self-edit their work and chart their own progress (Baleghizadeh & Oladrostam, 2010; Jin, 2015; Li, 2013; Luís, 2016; Ni & Yu, 2015). With all these potentials, MALL has prompted the development of mobile educational games that consist of audio, animation, interactive images and projections which could definitely enhance interactivity and collaboration between educators and learners, hence making learning more fun, interesting and effective.

One mobile educational game that is intriguing is the digital game (Ganapathy et al., 2016; Ongoro & Mwangoka, 2014; Virvou & Papadimitriou, 2014). Digital games trigger a certain thrill as learners are not pressured and are somewhat unconscious of the process of learning that takes place. This happens when the hidden factor that brings success in gamification is enjoyment (Largo et al., 2016). The excitement is due to certain elements that target our cognitive behaviour and position our body systems for certain surroundings. The positive feelings should be taken into consideration in any learning environment.

To elevate the learning potential, a game should be educational and stimulating. These can be achieved if such a game is developed based on an appropriate teaching methodology and an effective game theory (Elorriaga, Antunez, & Nicolino, 2016; Jantke & Hume, 2015; Marklund & Taylor, 2016). Hence, the call to develop a carefully designed game that could stimulate learners' learning potential serves as the motivation for this particular study. A game (Throw Back Time – TBT) has been developed by the researcher according to the theory that governs the development of the game which is the Theory of Variation (Marton & Booth, 1997). According to Marton and Booth (1997), the fundamental aspect of learning is for students to notice the critical aspect through variation and not sameness. This principle is the essence of the Theory of

Variation that acts as a guiding principle in the design of activities/grammar exercises in the game that was used as a teaching aid in this study. TBT is a digital board game where players have to correct errors of grammar tenses and aspect. Elements of challenge, competition, motivation and reward are included in the game to create fun and engaging learning environment.

The motivation to design a game specifically to teach tenses and aspect stems from the researcher's success in previous studies (Tengku Nazatul Shima & Rahmah, 2012, 2013) which were based on teaching English grammar using the traditional board game named "Time Trap". The outcome shows that the use of this board game is beneficial to learners in learning grammar. The board game developed by the researcher has received four merit awards, one at the national level and three at the international level. The awards are:

1. Invention and Innovation Design & Expo IIDEX 2013 – Gold Medal (see Appendix K)
2. International Innovation, Design and Articulation, IIDEA 2013 – Gold Medal (see Appendix J)
3. International Invention and Innovation & Design, IIDEX, 2014 – Gold Medal. (see Appendix I)
4. International Invention, Innovation & Design, IID Johor 2014 – Gold Medal. (see Appendix H)

For the purpose of this study, the board game has been digitalized and renamed Throw Back Time (TBT); some changes and improvements have been made for the purpose of using the game to teach English grammar to TESL Foundation students of UiTM Dengkil. The design of the game is the core of this study that aims to present empirical evidence of an innovative and interactive way to teach grammar. It ultimately