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E-PROCEEDINGS

INTERNATIONAL TINKER INNOVATION & ENTREPRENEURSHIP CHALLENGE (i-TIEC 2025)

"Fostering a Culture of Innovation and Entrepreneurial Excellence"



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23 January 2025
PTDI, UiTM Cawangan Johor
Kampus Pasir Gudang

ORGANIZED BY:

Electrical Engineering Studies, College of Engineering
Universiti Teknologi MARA (UiTM) Cawangan Johor
Kampus Pasir Gudang

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Editors

Aznilinda Zainuddin
Maisarah Noorezam

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PREFACE

It is with great pleasure that we present the e-proceedings of International Tinker Innovation & Entrepreneurship Challenge (i-TIEC 2025), which compiles the extended abstracts submitted to the International Tinker Innovation & Entrepreneurship Challenge (i-TIEC 2025), held on 23 January 2025 at **PTDI, Universiti Teknologi MARA (UiTM) Cawangan Johor, Kampus Pasir Gudang**. This publication serves as a valuable resource, showcasing the intellectual contributions on the invention and innovation among students, academics, researchers, and professionals.

The International Tinker Innovation & Entrepreneurship Challenge (i-TIEC 2025), organized under the theme "Fostering a Culture of Innovation and Entrepreneurial Excellence," is designed to inspire participants at various academic levels, from secondary students to higher education students and professionals. The competition emphasizes both innovation and entrepreneurship, encouraging the development of product prototypes that address real-world problems and have clear commercialization potential. By focusing on technological and social innovations, i-TIEC 2025 highlights the importance of turning creative ideas into viable, market-ready solutions that can benefit users and society. The extended abstracts in this e-proceedings book showcase the diverse perspectives and depth of research presented during the event, reflecting the strong entrepreneurial element at its core.

We extend our sincere gratitude to the contributors for their dedication in sharing their innovation and the organizing committee for their hard work in ensuring the success of the event and this publication. We also appreciate the support of our collaborators; Mass Rapid Transit Corporation Sdn. Bhd. (MRT Corp), Universitas Labuhanbatu, Indonesia (ULB), Universitas Riau Kepulauan, Indonesia (UNRIKA) and IEEE Young Professionals Malaysia, whose contributions have been instrumental in making this event and publication possible.

We hope that this e-proceedings book will serve as a valuable reference for researchers, educators, and practitioners, inspiring further studies and collaborations in both innovation and entrepreneurship. May the knowledge shared here continue to spark new ideas and market-ready solutions, advancing our collective expertise and fostering the growth of entrepreneurial ventures.

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B-SS107: THE VERB ODYSSEY (TBT)

Tengku Nazatul Shima Tengku Paris¹, Syedda Fareeha Hussain¹, Pauline Georgina Priya A/P Hebert Sundram¹ and Mohamad Nasrul Hakim Roslan²

¹Akademi Pengajian Bahasa, Universiti Teknologi MARA Cawangan Pahang
Kampus Raub, 27600 Raub, Pahang, Malaysia

²Akademi Pengajian Islam dan Kontemporari, Universiti Teknologi MARA
Cawangan Pahang Kampus Raub, 27600 Raub, Pahang, Malaysia

Corresponding author: Tengku Nazatul Shima Tengku Paris, tnshima@uitm.edu.my

ABSTRACT

Two primary factors contribute to limited proficiency in English verb tenses: learners' concerns about tenses and the inherent difficulty of understanding them. Therefore, it is crucial to alleviate these concerns and spark learners' enthusiasm for mastering verb tenses. The Verb Odyssey is a digital game developed to teach verb tenses, guided by the Theory of Variation. This theory directs the creation of the game's exercises. Digital games can evoke excitement and make the learning process relaxing. For a game to enhance learning, it must have educational qualities and provide cognitive stimulation. The game's design is based on three key elements: engagement, meaningfulness, and social interaction, all contributing to a positive learning experience. Researchers administered a survey to assess learners' perceptions of the game. The exercises in the game have increased learners' awareness of key aspects of verb tenses, improving their ability to understand and use them. The Verb Odyssey serves as an example of an instructional tool that aids learners in grasping verb tenses and reduces their anxiety about this linguistic area. Therefore, it is essential to rigorously develop instructional materials based on theoretical concepts that incorporate cognitive processes and learning preferences to enhance learners' understanding and application of knowledge.

Keywords: Verb Tenses, Digital Games, Gamification, The Theory of Variation

1. Product Description

The Verb Odyssey is an innovative digital game designed to transform the learning of English verb tenses into an exciting and engaging journey. Developed based on the Theory of Variation, the game strategically introduces exercises that highlight critical aspects of verb tenses, enhancing learners' awareness and proficiency. By addressing common challenges such as anxiety and confusion surrounding tenses, The Verb Odyssey promotes a relaxed and enjoyable learning environment. Built on three core elements—engagement, meaningfulness, and social interaction—the game ensures a positive and immersive learning experience. Each exercise is thoughtfully crafted to stimulate cognitive processes, encouraging players to explore and practice verb tenses in diverse contexts. Whether navigating the simple present or mastering complex progressive forms, learners are guided through an interactive and supportive framework that fosters confidence and mastery.

The Verb Odyssey has demonstrated its effectiveness in improving learners' understanding and usage of verb tenses. Survey results reveal a significant reduction in learners' apprehension and an increase in their enthusiasm for mastering this essential aspect of English grammar. Perfect for educators and students alike, The Verb Odyssey is not just a game—it is a powerful instructional tool that makes grammar learning both accessible and fun.

2. Findings

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	PRETEST - POSTTEST1	-5.89362	5.00536	.73011	-7.36325	-4.42399	-8.072	46	.000
Pair 2	POSTTEST1 - POSTTEST2	-1.61702	3.78529	.55214	-2.72842	-.50562	-2.929	46	.005
Pair 3	POSTTEST2 - POSTTEST3	-4.48936	5.24559	.76515	-6.02952	-2.94920	-5.867	46	.000
Pair 4	POSTTEST3 - POSTTEST4	-2.53191	2.60310	.37970	-3.29621	-1.76762	-6.668	46	.000

Table 1.1: Learners' Pre- and Post-Test Scores

The results of the paired pre- and post-test suggest that the students' understanding/knowledge of tenses and aspect has improved after doing the grammar activities using The Verb Odyssey. The results also suggest that The Verb Odyssey is effective to help learners to learn grammar and the success of applying the elements from the Theory of Variation in designing the questions in the game enables learners to discern the critical values of each tense and aspect.

3. Novelty and uniqueness

The Verb Odyssey stands out as a groundbreaking digital game that redefines the way English verb tenses are taught and learned. Unlike traditional methods, the game is rooted in the Theory of Variation, a pedagogical approach that systematically highlights the critical features of verb tenses. This enables learners to discern patterns, contrasts, and connections, making the learning process both meaningful and effective. The game's novelty lies in its unique combination of cognitive stimulation, engaging gameplay, and targeted language practice. By integrating elements of engagement, meaningfulness, and social interaction, The Verb Odyssey goes beyond rote memorization to foster active learning and sustained

interest. Each exercise is meticulously designed to reduce learners' anxiety about verb tenses while building confidence in their application. Moreover, The Verb Odyssey leverages digital interactivity to create a relaxed and immersive environment, unlike the often rigid and stress-inducing traditional classroom approaches. Through its innovative design, learners are empowered to explore verb tenses at their own pace, with immediate feedback reinforcing their progress. This innovative approach enhances proficiency and addresses the emotional barriers learners face, making The Verb Odyssey a pioneering tool for revolutionizing grammar education. Its proven effectiveness ensures it is a valuable addition to modern language learning.

4. Benefit to mankind

The Verb Odyssey revolutionizes the teaching and learning of English grammar, addressing a universal challenge faced by millions worldwide—mastering verb tenses. By leveraging the power of digital interactivity and the Theory of Variation, the game enhances learners' understanding and usage of verb tenses in an engaging and accessible way. The innovation benefits humanity by breaking down language barriers, which are essential for global communication, education, and career opportunities. By reducing the anxiety often associated with learning grammar, The Verb Odyssey empowers individuals to approach language acquisition with confidence and enthusiasm. Its interactive and flexible design ensures that learners from diverse backgrounds and age groups can access quality educational experiences. This fosters inclusivity and bridges educational gaps, particularly for underserved communities. Ultimately, The Verb Odyssey promotes personal growth, cross-cultural communication, and lifelong learning, making it a valuable contribution to education and global connectivity.

5. Innovation and Entrepreneurial Impact

The Verb Odyssey exemplifies innovation by integrating the Theory of Variation into a digital game format, transforming how English verb tenses are taught and learned. Its unique design combines cognitive stimulation, interactive gameplay, and targeted language practice to address the challenges of mastering grammar effectively. Unlike conventional methods, the game fosters engagement, reduces anxiety, and promotes deeper learning, setting a new benchmark in educational technology. Entrepreneurially, The Verb Odyssey has demonstrated tangible market success, with 53 units sold to date. Its accessibility across digital platforms makes it a versatile tool for educators, students, and language learners worldwide. The game's scalability ensures adaptability for various educational levels and contexts, including schools, universities, and language centers. By addressing a critical need in language education and offering a proven, user-friendly solution, The Verb Odyssey positions itself as a high-impact product. It generates sustainable revenue while making a meaningful contribution to global education.

6. Potential commercialization

The Verb Odyssey holds significant potential for commercialization as a transformative educational tool for mastering English verb tenses. With its innovative design rooted in the Theory of Variation, the game addresses universal challenges in grammar learning, making it a valuable product for global markets. Its proven success, with 53 units sold, highlights its demand and market viability. The game's digital format ensures scalability, enabling easy distribution across diverse platforms such as mobile apps, online learning portals, and desktop software. It appeals to a wide audience, including schools, universities, language centers, and individual learners. Customizable features can be developed to cater to different age groups, proficiency levels, and educational needs, further broadening its reach. The Verb Odyssey is well-positioned to become a market leader. Its potential for subscription models, licensing, and partnerships with educational institutions ensures a sustainable revenue stream while advancing global language education.

7. Acknowledgment

We extend our heartfelt gratitude to everyone who contributed to the development and success of *The Verb Odyssey*. This project would not have been possible without the support and guidance of our dedicated team members, educators, and language experts who provided valuable insights and feedback throughout the development process.

8. Authors' Biography



Dr. Tengku Nazatul Shima Tengku Paris, PhD, holds the position of Senior Lecturer at Universiti Teknologi MARA, Cawangan Pahang Kampus Raub. She earned her degree in English Language Teaching from the University of Stirling, Scotland, United Kingdom, followed by a Master of TESOL from Universiti Putra Malaysia (UPM). Her academic journey led her to complete a PhD in English Language Studies at the International Islamic University (IIUM) Gombak. She specializes in and is deeply interested in two primary domains: Game Development for Language Learning and Mobile- Assisted Language Learning (MALL).



Syedda Fareeha Hussain is a lecturer at Akademi Pengajian Bahasa, Universiti Teknologi MARA, Cawangan Pahang Kampus Raub. She obtained her bachelor's and master's degrees with specialization in English Literary Studies from International Islamic University Malaysia (IIUM). She has the experience of teaching English language courses to both Foundation and Diploma students. Her fields of interest include women's writings and language learning using literature.



Pauline Georgina Priya a/p Hebert Sundram, lecturer at Universiti Teknologi MARA, Cawangan Pahang Kampus Raub. She earned a Bachelor Degree in Teaching English as a Second Language (TESL) from Universiti Selangor (UNISEL) followed by a Master of English as a Second Language (ESL) from Universiti Malaya (UM). Her areas of interest are Language Acquisition and Mobile Technology in Language Learning.



Mohamad Nasrul Hakim Roslan is a lecturer in Akademi Pengajian Islam Kontemporari, UiTM Cawangan Pahang Kampus Raub. His areas of interests are Islamic Banking and Economics.