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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-SS037: SPEAKIN3: BRIDGING ESL FLUENCY GAPS WITH AI CONVERSATIONS

Dr Nurul Ajleaa Haji Abdul Rahman and Nur Ain Nasuha Nasran
Academy of Language Studies, Universiti Teknologi MARA, Terengganu Branch,
Dungun Campus, Terengganu, Malaysia

Corresponding author: Dr Nurul Ajleaa Haji Abdul Rahman, ajleaa@uitm.edu.my

ABSTRACT

Effective English communication is essential for success in today's globalized world. Despite advancements in language-learning technologies, ESL learners face challenges such as limited conversational practice, inadequate feedback on fluency and pronunciation, and high communication anxiety. The 3-Minute Challenge (3MC) is a technique, copyrighted by the research team, in which students present ideas in three minutes with a single static slide, promoting concise and effective communication. However, there is a need for tools that offer interactive conversational practice. To address these challenges, SpeakIn3 integrates 3MC with innovative AI tools like Voki and TalkPal AI. SpeakIn3 transitions students from structured presentations to immersive conversational practice. After their 3MC presentations using Voki avatar, students engage with TalkPal AI to simulate real-life dialogues, enhancing fluency, pronunciation, and confidence. This multi-tool system bridges the gap between structured tasks and dynamic communication. SpeakIn3's AI-driven avatars, text-to-speech technology, and real-time feedback provide comprehensive skill-building, benefiting students, educators, and society. Its scalability and commercialization potential ensure long-term impact in the EdTech and professional development sectors.

Keywords: ESL Communication, AI-Powered Learning, 3-Minute Challenge, Conversational AI, Fluency Enhancement

1. Introduction

In the digital era, effective communication in English is indispensable for academic, professional, and personal success. Recognizing this need, the 3-Minute Challenge (3MC) was developed as a concise, effective approach to help ESL learners organize ideas and deliver speeches confidently within a limited timeframe. Its structured methodology has already transformed ESL education by enabling students to develop essential speaking skills.

To expand its impact, the innovation SpeakIn3 was introduced, combining the foundational elements of 3MC with the creativity of AI tools like Murf.AI and Voki. The name "SpeakIn3" reflects the fusion of the 3MC framework with advanced conversational practices, emphasizing quick, impactful language mastery. While 3MC hones presentation skills, a critical gap persists in providing learners with continuous conversational practice post-presentation.

To address this, TalkPal AI is seamlessly integrated into the system, offering immersive, real-world dialogue simulations. This multi-tool approach bridges the gap between structured speech tasks and spontaneous communication, creating a comprehensive learning environment. The innovation fosters fluency, confidence, and adaptability, preparing learners to meet the demands of dynamic communication scenarios in academic, professional, and global contexts.

2. Product Description

3MC is a technique that the students need to give a speech or deliver their presentation in just 3 minutes with 1 single static slide only. 3MC technique is fast, effective, deliverable, and understandable. **Figure 1** shows the template to create one single static slide.

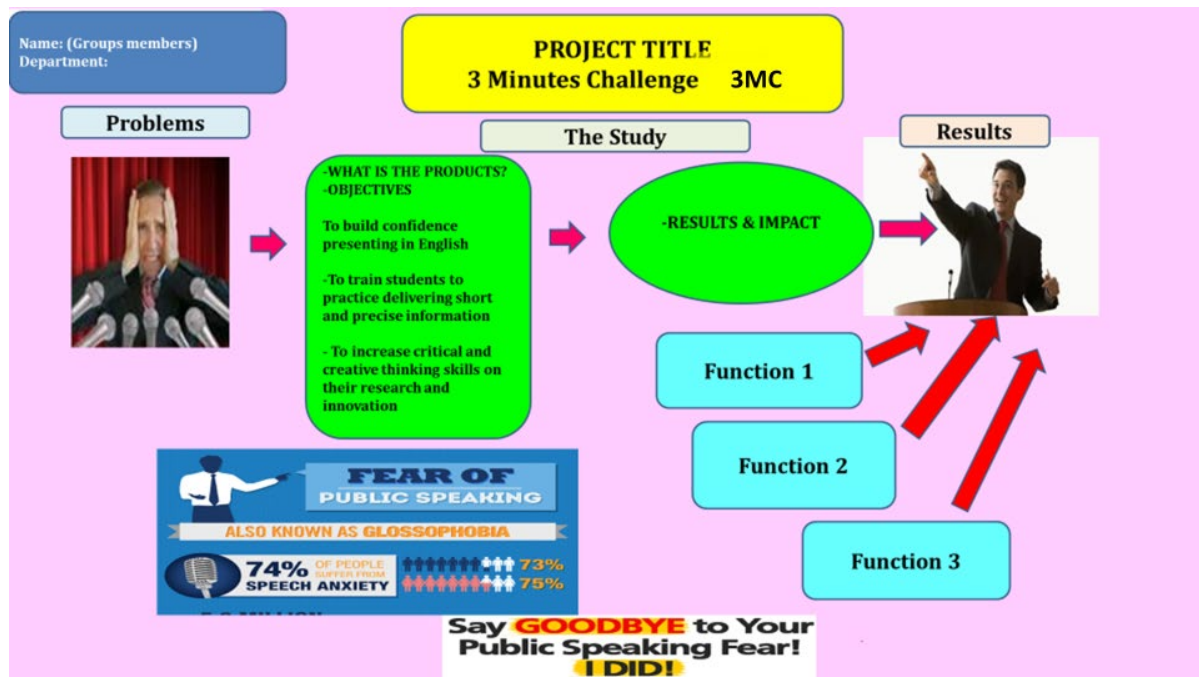


Figure 1. 3MC Template

Figure 2 shows a bar plots that illustrates the pre-test and post-test performance for both the SpeakIn3 Technique Group and the Traditional Activities Group. Each group's performance is categorized into High, Average, and Low percentages (refer **Figure 2**). For the SpeakIn3 Technique Group, you can observe a notable shift from the pre-test to the post-test, particularly in the "High" and "Low" categories. Similarly, for the Traditional Activities Group, while the changes are less dramatic, there are still some variations in the percentages across the High, Average, and Low categories between the pre-test and post-test.

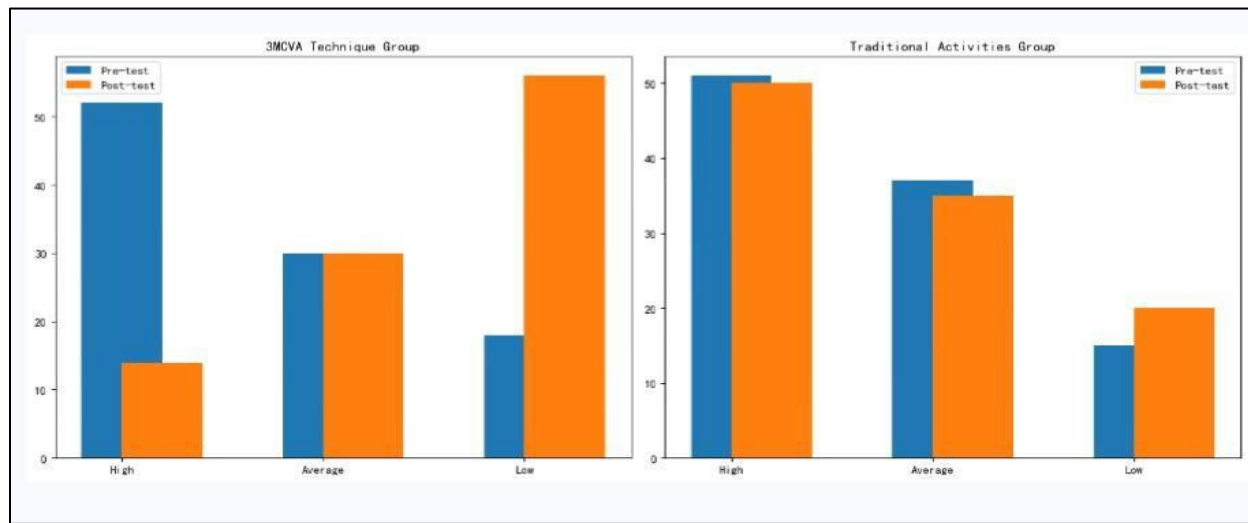


Figure 2. Plots of Comparison

TalkPal AI is a GPT-powered AI language tutor designed to provide an immersive and efficient language learning experience. It allows users to engage in conversational practice on unlimited topics through writing or speaking while receiving realistic voice feedback. With features that enhance listening, speaking, reading, and writing skills, TalkPal AI offers a comprehensive solution for ESL learners to simulate real-world communication scenarios. Figure 3 displays the user interface of TalkPal AI, showcasing its ability to facilitate interactive dialogues through a mobile-friendly design. This tool complements the SpeakIn3 system by enabling students to transition seamlessly from structured 3MC presentations to interactive, conversational practice, enhancing their fluency, pronunciation, and confidence in English communication.

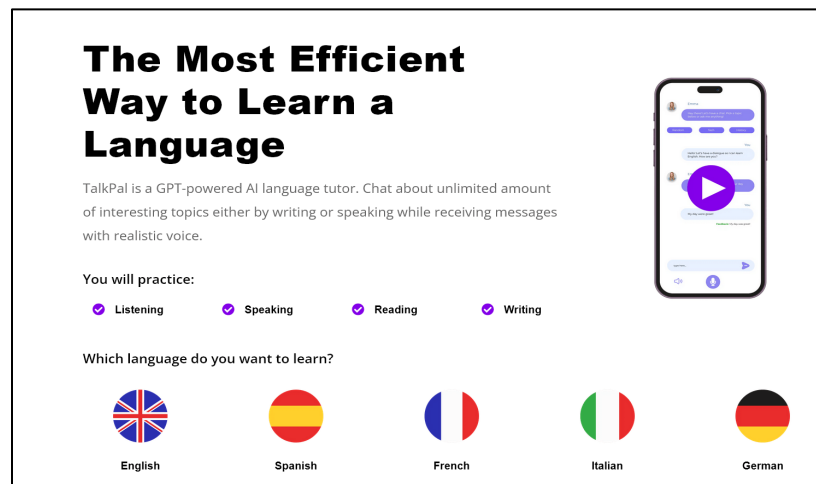


Figure 3. TalkPal AI interface

3. Novelty and uniqueness

This innovation leverages 3MC as a launchpad, building on its proven effectiveness to transition students seamlessly into conversational practice with TalkPal AI. By incorporating interactive AI conversations, the system simulates real-life dialogues and scenarios, including interviews, casual chats, and professional discussions, helping students gain practical language skills. The multi-tool integration of 3MC, Voki, and TalkPal AI creates a unified learning system that strikes a balance between structured presentations and spontaneous speaking practice, offering a comprehensive and engaging approach to mastering English communication.

4. Benefit to mankind

This innovation benefits multiple stakeholders. For students, it boosts confidence in delivering presentations and engaging in real-world conversations while improving pronunciation, grammar, and fluency through AI-driven feedback. These skills enhance their employability by equipping them with practical communication abilities. For educators, the system offers innovative tools to create engaging lesson plans and reduces preparation time with AI-generated voiceovers and avatars, making teaching more efficient and effective. On a societal level, the innovation addresses the global demand for proficient English speakers in professional and social contexts and promotes inclusivity by making English learning accessible to diverse groups of learners, fostering a more connected and capable global community.

5. Innovation and Entrepreneurial Impact

This project exemplifies innovation by integrating cutting-edge AI tools, such as TalkPal AI, into the established 3-Minute Challenge (3MC) framework, which is protected under copyright from IPO. By merging structured presentation techniques with dynamic conversational practice, the project addresses long-standing gaps in ESL education, such as limited real-world speaking opportunities and high communication anxiety. The innovation fosters a culture of entrepreneurship within educational institutions and industries by equipping learners with 21st-century skills, including public speaking, critical thinking, and technological proficiency. Educators are empowered to adopt efficient, AI-enhanced teaching methods, driving the modernization of pedagogical practices. Commercially, the system opens avenues for EdTech partnerships, licensing, and professional development programs, creating sustainable revenue streams. The project's emphasis on accessibility and inclusivity ensures broad community impact, fostering a global culture of language proficiency and entrepreneurial excellence in the education sector.

6. Potential commercialization

The commercialization potential of this innovation lies in multiple avenues. The integrated system (3MC + TalkPal AI) can be licensed to universities and schools globally, enabling widespread adoption in educational institutions. Partnerships with EdTech platforms offer opportunities to embed the innovation into their services, expanding its reach. Professional development programs can train educators to implement the tools effectively, ensuring sustainable usage while generating revenue. Additionally, workshops and language

bootcamps can be conducted to provide learners with immersive training, further monetizing the system through event-based offerings. A subscription model for TalkPal AI, featuring premium conversational features and data tracking for continuous practice, ensures long-term engagement and scalability in diverse learning environments.

7. Acknowledgment

The authors would like to acknowledge the support from the Ministry of Higher Education Malaysia under the Fundamental Research Grant (FRGS/1/2022/SSI07/UITM/02/16).

8. Authors' Biography



Dr. Nurul Ajleaa Abdul Rahman is the Head of the Centre of Studies at the Academy of Language Studies, Universiti Teknologi MARA (Terengganu). She earned her Ph.D. in TESL from Universiti Kebangsaan Malaysia in 2017 and has over 15 years of teaching experience. Specializing in ESL writing and oral communication, Dr. Nurul integrates technology into education to enhance learning outcomes. She has pioneered innovations like "SpeakIn3" and received multiple gold awards for her contributions to educational innovation. Her work focuses on advancing technology-driven teaching and learning, bridging academic research and practical applications in ESL education.



Nur Ain Nasuha Nasran is a part-time lecturer at the Academy of Language Studies, Universiti Teknologi MARA (Terengganu). She holds a Diploma in TESL and a Bachelor of English with Communication from Universiti Sultan Zainal Abidin (UniSZA). During her studies, she gained extensive knowledge in communicative English and applied linguistics, which have equipped her with the expertise to contribute meaningfully to language education research. Currently, she collaborates with Dr. Nurul Ajleaa Abdul Rahman on innovative projects that integrate technology into ESL teaching and learning. As an assistant researcher, she plays a pivotal role in advancing and implementing innovations aimed at enhancing English proficiency among learners through creative, tech-driven methodologies.