



UNIVERSITI
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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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CONTENTS

PREFACE	i
FOREWORD RECTOR	ii
FOREWORD ASSISTANT RECTOR	iii
PREFACE PROGRAM DIRECTOR	iv
ORGANIZING COMMITTEE	v
EXTENDED ABSTRACTS SCIENCE & TECHNOLOGY	1 - 618
EXTENDED ABSTRACTS SOCIAL SCIENCES	619 - 806

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.

A-SS004 - A-SS121

A-SS004: SMART APPLICATION FOR STUDENT'S DAILY LEARNING MANAGEMENT	623
A-SS011: REVOLUTIONIZING FASHION RETAIL THROUGH VIRTUAL TRY-ON TECHNOLOGY	628
A-SS020 THE IDEATION OF MODEBORO UPCYCLING OUTFIT ON BORO SASHIKO TECHNIQUE FOR ECO-FRIENDLY PRODUCTION	634
A-SS053: THE ENLIGHTENMENT EXPERIENCE: INTERPRETATION PLAN DEVELOPMENT FOR TELUK INTAN HERITAGE GETAWAY.....	641
A-SS071: CPI2E: AN INTERACTIVE SIMULATION GAME.....	646
A-SS086: FRUITFUL DELIGHTS: PREMIUM BASKETS FOR HEALTH AND OCCASION	649
A-SS095 PLANET HERO: UNCOVERING HOW TO SAVE OUR EARTH	654
A-SS099: SPARK AND SENSE: ENGAGING DO IT YOURSELF (DIY) SENSORY PLAY CONTENT	661
A-SS101: INNOVATION IN STEM EDUCATION: INTEGRATING MATHEMATICS AND ENTREPRENEURSHIP.....	667
A-SS104: NURTIPULSE PROTAINER: TRANSFORMING FITNESS WITH PERSONALISED TRACKING AND SUPPLEMENTATION INSIGHTS	672
A-SS119: SOLV.IT.....	677
A-SS121: APPLICATION: LADYLINE	683

A-SS099: SPARK AND SENSE: ENGAGING DO IT YOURSELF (DIY) SENSORY PLAY CONTENT

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ABSTRACT

Early childhood education plays a crucial role in shaping a child's development, offering countless benefits that support their growth in many ways. Sensory play is one of the most impactful aspects of this process. It's not just about keeping kids entertained, it actively helps improve their cognitive and critical thinking skills, language and communication abilities, and supports their social and emotional development. Dugan Laird's research found that 75% of what adults learn comes from visual input, 13% from hearing, and the remaining 12% through touch, smell, and taste combined. This makes it clear how powerful sensory experiences are, especially for children. Giving them opportunities to engage in visual and multi-sensory activities can really enhance their learning. The main goal of this project is to help parents feel confident about introducing sensory play into their kids' daily lives. The project aims to educate parents and provide them with easy DIY sensory play ideas they can try at home. It's all about making sensory play simple, affordable, and enjoyable. By raising awareness and creating accessible resources, this project hopes to build a supportive community where parents can share ideas and encourage each other in fostering their children's development through playful exploration.

Keywords: Sensory Play, Child's Development, Parents, Knowledge, Patreon

1. Product Description

DIY sensory play content is designed to empower parents, caregivers, and child educators with simple, cost-effective ways to incorporate sensory play into children's daily routines. The project provides easy-to-follow tutorials on creating sensory play activities using everyday materials, making it accessible for all families. These activities aim to enhance children's cognitive, motor, emotional, and social development by engaging them in hands-on, multi-sensory experiences. The content will be shared on TikTok, offering short, engaging previews of the full videos available on Patreon. Users can subscribe to Patreon for exclusive access to detailed, step-by-step guides on creating and engaging with sensory play activities. Patreon offers three affordable subscription tiers, each with different benefits, such as early access, personalised content, and additional resources. For those who prefer one-time donations, Ko-fi provides a flexible option to contribute without the need for a subscription. This project aims to build a supportive community where parents and educators can share ideas, ask questions, and learn together. By offering accessible and budget-friendly sensory play options, the project helps families foster children's development in fun, meaningful, and interactive ways.

2. Data Analysis

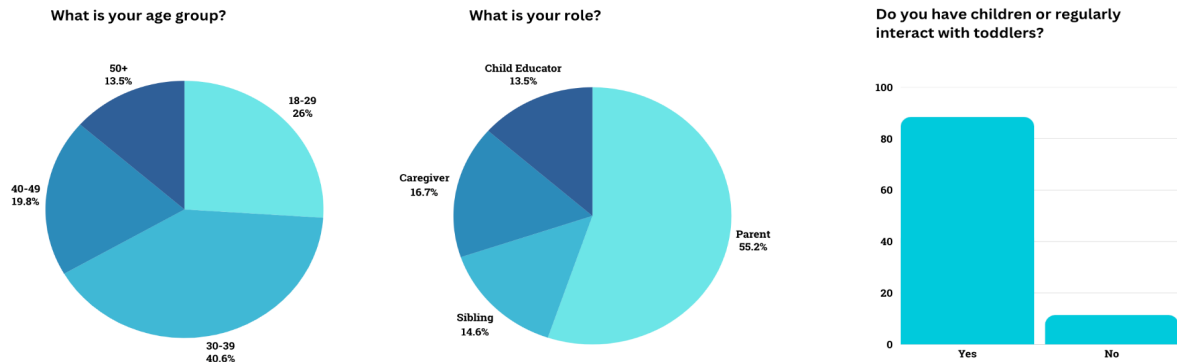


Figure 1, 2 & 3. Respondents' age, role and interaction with toddlers.

Figure 1 shows that 40.6% of respondents are between the ages of 30 to 39, which possibly are parents who are engaged in their caregiving roles. Additionally, 26% of respondents aged 18 to 29 are likely new parents or older siblings who are actively interacting with toddlers. In **Figure 2**, it's clear that parents make up the largest group at 55.2%, followed by caregivers at 16.7%, siblings at 14.6%, and child educators at 13.5%. This mix of figures shows the diverse community of individuals who are dedicated to early childhood development, perfectly aligning with the project's mission to support and educate those involved in this important phase of life. Moreover, **Figure 3** shows that 88.5% of respondents regularly interact with toddlers. This tells just how interested they are in participating in sensory play activities that benefit both children and them.

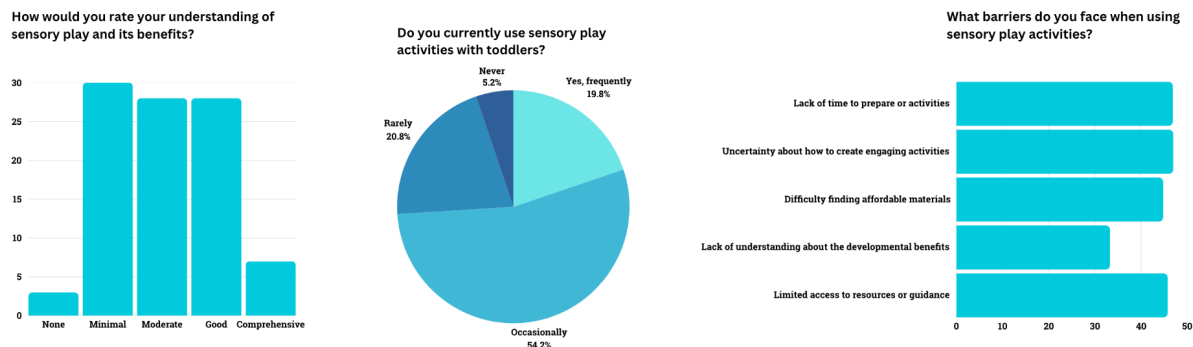


Figure 4,5 & 6. Respondents awareness and current practices of sensory play.

In **Figure 4**, 28% of the respondents feel that their understanding of sensory play is "good," and only 7% consider it "comprehensive." However, the majority of the respondents, 61%, feel that they have either "minimal" or "moderate" knowledge about it. This shows a clear need for educational resources that can help close the gap and show how beneficial sensory play can be for toddler's development. In **Figure 5**, only 19.8% of respondents frequently engage in sensory play activities and about 54.2%, participate occasionally. This indicates that even if they are aware of the value of sensory play, they still face some problems that make it hard to incorporate sensory play into their routine consistently. Hence, in **Figure 6**,

46.8% of respondents say that they struggle with finding the time to plan or prepare the activities. 46.9% of the respondents too feel unsure how to create engaging sensory play. Additionally, 44.8% find it hard to find affordable materials to create the activities, and 45.8% don't fully understand the developmental benefits of sensory play. This shows a strong need for resources that are not only easy to access but also practical and informative.

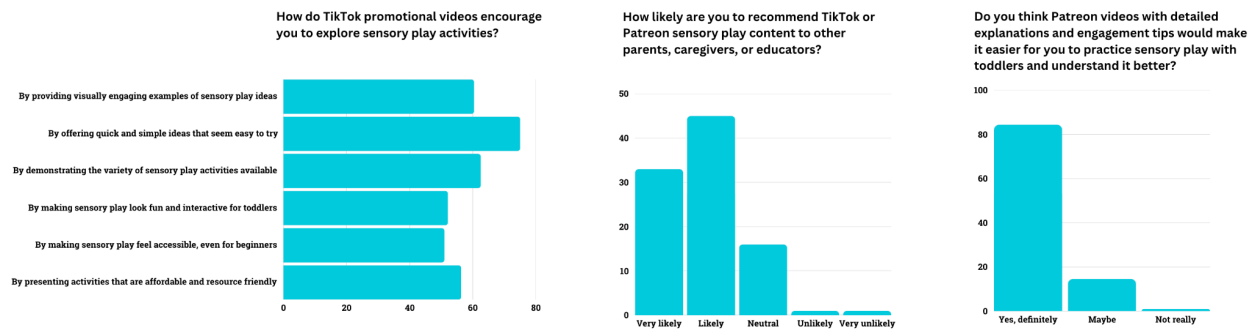


Figure 7, 8 & 9. Respondents' potential interests in the content/project.

In **Figure 7**, 75% of respondents are drawn to TikTok promotional videos that showcase quick and simple ideas of sensory play. This indicates that the respondents are likely more interested in easy-to-do activities. Additionally, 60.4% are attracted to visually engaging examples and 62.5% are attracted by the offered variety of sensory play activities. This aligns perfectly with the project's goal of creating content that is both accessible and visually appealing. Moreover, 56.3% of respondents highlighted that they prefer activities that are budget-friendly. This also aligned with the project's target to only make sensory play activities with budget-friendly materials. In **Figure 8**, 78% of respondents would likely recommend TikTok or Patreon sensory play content to others. This suggests there's a strong potential for personal sharing and a broad interest in these resources. Finally, **Figure 9** reveals that 84.4% of respondents believe that detailed Patreon videos with explanations and engagement tips, would make it easier for them to practice and understand sensory play.

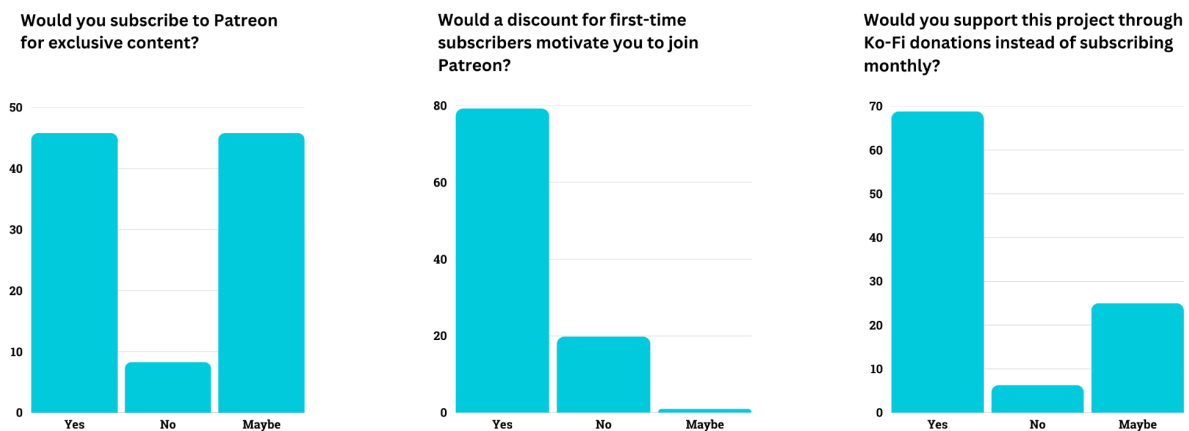


Figure 10, 11 & 12. Respondents' interest in Supporting the project.

Figure 10 reveals that 45.8% of respondents would definitely subscribe to Patreon for exclusive content, while an additional 45.8% are undecided, suggesting a solid base of potential subscribers if the right incentives are provided. This reflects a strong interest in gaining access to the sensory play content, especially if it aligns with their needs and preferences. **Figure 11** further supports this, with a significant 79.2% of respondents indicating that a discount for first-time subscribers would motivate them to join Patreon. This highlights the effectiveness of offering incentives to encourage initial sign-ups and engagement, which can help boost the subscriber base and create momentum for the project. Additionally, **Figure 12** shows that 68.8% of respondents are open to supporting the project through Ko-Fi donation instead of a monthly subscription, providing an alternative support model for those who may prefer one-time contributions.

3. Novelty and uniqueness

This project takes a fresh and practical approach to sensory play, focusing on affordability and accessibility for parents and caregivers. Unlike pricey Montessori toys or pre-packaged sensory kits, it highlights easy, DIY sensory activities using everyday materials that most families already have at home. What makes this project stand out is the way it combines these simple ideas with clear explanations of how each activity supports a child's development. Instead of just showing ideas of sensory play activities, it dives into the "why," helping parents better understand their child's cognitive, emotional, and social growth. By sharing free content on TikTok and offering exclusive, more detailed resources on Patreon, the project not only reaches a wider audience but also creates a space for parents and educators to connect. This dual approach makes sensory play more approachable while fostering a sense of community among people passionate about early childhood development.

4. Benefit to mankind

This project aims to support the overall development of young children by promoting sensory play, which plays a key role in developing cognitive, emotional, and social skills. By providing content that teaches parents, caregivers, and educators how to create simple DIY sensory activities, along with explaining their benefits and how to integrate them into daily routines, the project helps families engage in meaningful learning experiences with their children. The activities encourage creativity, improve motor skills, and support language development, all while making the learning process fun. By raising awareness about the importance of sensory play, this project aims to help parents make informed choices that support their children's development. Ultimately, the project benefits society by promoting the healthy growth of children and lowering the barriers to effective early childhood education.

5. Innovation and Entrepreneurial Impact

The project promotes innovation by offering affordable, easily accessible DIY sensory play resources that can be implemented at home. It also encourages entrepreneurship by using digital platforms like TikTok, Patreon, and Ko-fi to create a business model that combines content creation, community-building, and revenue generation. The project fosters a culture of entrepreneurship by demonstrating how digital content can be used to solve real-world

problems while generating income. This approach not only benefits parents and children but also opens doors for future entrepreneurs in the educational content space.

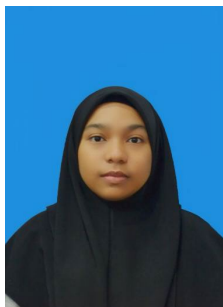
6. Potential commercialization

The project has great potential for commercialization by tapping into platforms like Patreon, TikTok, and Ko-fi to generate income. With the growing interest in sensory play and affordable DIY educational resources, there's also an opportunity to collaborate with sensory toy brands. These collaborations could provide sponsorships, including product vouchers for followers, encouraging them to explore quality sensory toys while supporting the project. Additionally, partnerships with child-focused brands or organisations could further increase visibility and impact. As the project gains attention, working with educational institutions, parenting blogs, or even government programs aimed at early childhood development could help reach a wider audience while ensuring long-term success. This combination of content creation, strategic collaborations, and brand sponsorships makes the project sustainable and allows it to grow into something even more meaningful for families and educators alike.

7. Acknowledgment

I would like to express my heartfelt appreciation to the co-researcher, Derwina Daud, for her guidance and unwavering support throughout this project. Her patience in addressing my questions and her kindness in taking the time to explain things, even when I struggled to understand, have been invaluable. She provided thorough guidance and support throughout this project, assisting me step by step in every phase. Her encouragement and understanding made a significant difference in helping me complete this project. I would also like to extend my gratitude to my parents, family, and friends for their invaluable help in participating as respondents for this project. Their contributions played a crucial role in helping me gather insights from my target audience, which greatly enhanced the findings of this research.

8. Authors' Biography



Wan Alisa Maisarah Ja'afar Harisa is a dedicated Diploma in English Professional Communication student at UiTM Johor Branch, Segamat Campus, with a keen interest in childhood education and content creation. Her passion for these fields drives her to create fun, educational content aimed at engaging parents and promoting sensory play. Her project, Spark and Sense: Engaging Do It Yourself (DIY) Sensory Play Content, reflects her commitment to both her academic journey and her goal of educating parents on the benefits of sensory play. Through this project, Maisarah demonstrates her creativity and enthusiasm, offering parents innovative ideas for fostering their children's development through sensory play activities.



Derwina Daud, is a senior lecturer in the Akademi Pengajian Bahasa, UiTM Johor, Segamat Campus. With over 15 years of experience in teaching English to both undergraduates and graduates students, she has great interest in sociolinguistics, media linguistic and creative writing. She is currently pursuing PhD in applied linguistic, at the Akademi Pengajian Bahasa, UiTM Shah Alam. Her dissertation title is *Multimodal Critical Discourse Analysis (MCDA) of Internet Memes on Malaysian Movement Control Order (MCO) 2.0 during COVID-19*.