



# E-PROCEEDINGS

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

"Fostering a Culture of Innovation and Entrepreneurial Excellence"



e ISBN 978-967-0033-34-1



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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  
<https://tieg-uitmpg.wixsite.com/tieg>

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of International Tinker Innovation & Entrepreneurship  
Challenge (i-TIEC 2025)**



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**23<sup>rd</sup> JANUARY 2025  
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**e ISBN: 978-967-0033-34-1**

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Published in Malaysia by  
Universiti Teknologi MARA (UiTM) Cawangan Johor  
Kampus Pasir Gudang, 81750 Masai





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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-SS123: EDUCATIONAL DOLLS OF TRADITIONAL CLOTHING FOR INDONESIAN CHILDREN, THROUGH THE USE OF PATCHWORK FABRIC WITH HAND SEWING TECHNIQUES**

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### **ABSTRACT**

Educational Dolls of Traditional Clothing for Indonesian Children is an innovative learning media that introduces the diversity of Indonesian culture through traditional clothing from various regions. Using patchwork as the main material, this product not only supports environmental sustainability but also provides added value by creating unique dolls through hand-sewing techniques. This doll functions as an educational tool that teaches children about Indonesian culture while training creativity and fine motor skills. In addition, this doll plays a role in introducing the concept of sustainability, by utilizing textile waste materials and providing economics opportunities for local craftsmen. With the educational, social, and environmental values contained, this product has great potential in the educational and cultural toy market. The uniqueness of the use of patchwork and hand sewing techniques makes it a different product and attracts consumer interest, both in the domestic and international markets. This innovation also encourages social entrepreneurship that can provide benefits to the community and cultural preservation.

**Keywords:** Educational Dolls, Patchwork, Traditional Clothing

### **1. Product Description**

Educational Dolls of Traditional Clothing for Indonesian Children are innovative learning media designed to introduce the diversity of Indonesian culture to children through traditional clothing from various regions. These dolls are made using patchwork, which are pieces of leftover fabric that are reused as the main material. The use of patchwork not only supports sustainability and the reduction of textile waste, but also makes each doll unique with variations in color and motif. The traditional clothing worn by the dolls is made using hand-sewing techniques, providing fine detail, safety, and a personal touch. These dolls function as educational tools to introduce the uniqueness of Indonesian culture while teaching the importance of respecting the environment. Children can also train their fine motor skills and creativity by playing and changing the dolls' clothes. With a combination of educational value and creativity, these dolls are suitable for use in schools, homes, or learning communities to instill a love of culture and environmental awareness.

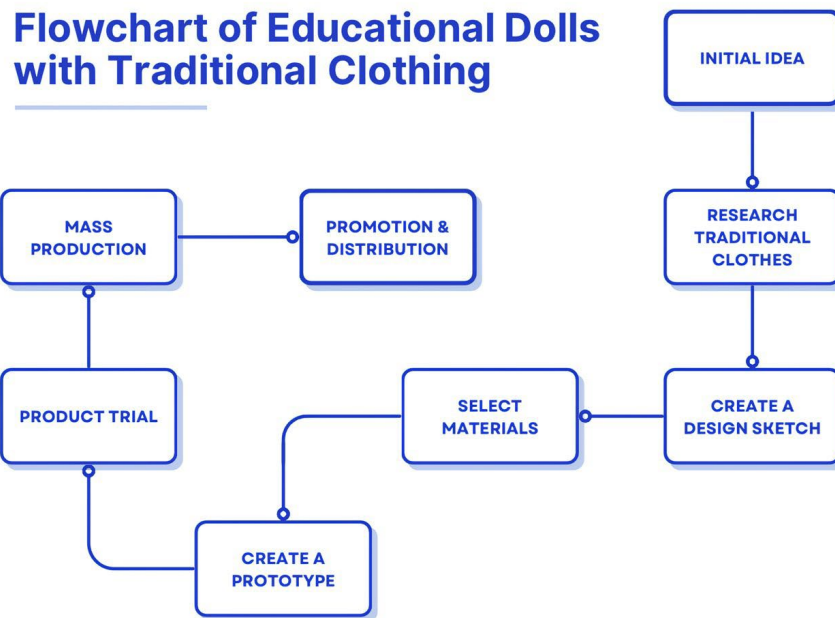
## 2. Pictures and Flow Charts



**Figure 1.** Design of product



**Figure 2.** MTQ exhibition



**Figure 3.** Flowchart

**Table 1.** Steps to develop innovation of Barbie doll using traditional clothes

No.	Steps	Description
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1	Identify Innovation Objectives	Determine the main reason this innovation was created, such as: <ul style="list-style-type: none"> <li>• Introducing Indonesian culture.</li> <li>• Providing educational value to children.</li> <li>• Increasing a sense of pride in local culture.</li> </ul>
2	Local Culture Research	Conduct research on traditional clothes from various regions in Indonesia, for example: <ul style="list-style-type: none"> <li>• Using cultural reference books.</li> <li>• Accessing online source (articles, videos, or virtual museums).</li> <li>• Visiting certain areas to understand the details of traditional clothes.</li> </ul> Choose traditional clothes that are representative of each region.
3	Doll and Clothing Design Planning	Adaptation of traditional clothing design: <ul style="list-style-type: none"> <li>• Make sure the design matches the shape of the Barbie doll</li> <li>• Pay attention to details, such as fabric motifs, typical accessories, and colors.</li> </ul> Materials: <ul style="list-style-type: none"> <li>• Use lightweight and safe fabrics for children's toys.</li> <li>• Choose materials that reflect the authenticity of traditional clothes.</li> </ul>
4	Prototyping	<ul style="list-style-type: none"> <li>• Create a prototype of traditional clothes in doll size.</li> <li>• Conduct a trial run to ensure the clothes fit and are comfortable for the doll.</li> <li>• Fix design flaws (if any) to improve quality.</li> </ul>
5	Mass Production	Collaboration with doll factories: <ul style="list-style-type: none"> <li>• Choose a production partner who understands Barbie quality.</li> <li>• Ensure that Barbie dolls continue to meet international toy safety standards.</li> </ul> Production scale: <ul style="list-style-type: none"> <li>• Determine the initial production quantity based on the target market.</li> <li>• Prepare attractive and informative packaging (include a description of the traditional clothes).</li> </ul>
6	Marketing and Promotion	Promotion strategy: <ul style="list-style-type: none"> <li>• Use social media, digital advertising, or cultural events to introduce the product.</li> <li>• Collaborate with relevant public figures to promote the dolls.</li> </ul> Target market: <ul style="list-style-type: none"> <li>• Local market (Indonesia) for cultural education.</li> <li>• International market to introduce Indonesian culture to the world.</li> </ul>

7	Evaluation and Development	<p>Collect feedback:</p> <ul style="list-style-type: none"> <li>• From customers, children, and parents.</li> </ul> <p>Product development:</p> <ul style="list-style-type: none"> <li>• Add a collection of traditional clothes from other regions in Indonesia.</li> <li>• Create special editions for certain cultural events.</li> </ul>
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### 3. Novelty and uniqueness

Educational dolls in traditional clothing have a uniqueness that distinguishes them from other educational toys. First, these dolls utilize patchwork, textile waste materials that are transformed into traditional clothing, thus supporting the principle of sustainability and reducing waste. Each garment is sewn using hand-sewing techniques, resulting in unique details and personal touches that make each doll different from one another. These dolls also represent the diversity of Indonesian culture through traditional clothing such as kebaya, baju bodo, or ulos, which are carefully designed. In addition, these dolls combine educational and creative values, where children not only learn to recognize Indonesian culture but also train their creativity by playing and changing the doll's clothes. With an environmentally friendly, economical, and exclusive approach to each doll, this product is a unique, functional educational tool, while supporting a love of culture and environmental awareness from an early age.

### 4. Benefit to mankind

Educational dolls in traditional clothing provide significant benefits for the community and children. For children, these dolls are a fun learning medium to learn about the diversity of Indonesian culture through traditional clothing. They can develop a love for local culture, train their creativity, and improve their fine motor skills by playing and changing the doll's clothes. For the community, these dolls encourage awareness of the importance of sustainability through the use of patchwork, while also providing new economic opportunities, especially for local craftsmen who make doll using hand-sewing techniques. These dolls also support multicultural education which is important of educational, environmental, and social values, these dolls contribute to the formation of a younger generation that is more creative, cares about culture, and is aware of the importance of sustainability.

### 5. Innovation and Entrepreneurial Impact

Educational dolls in traditional clothing utilize patchwork, a material often considered textile waste, to create high-value products. Using hand-sewing techniques, each doll is unique, appealing to consumers looking for unique items. This initiative not only reduces textile waste but also empowers local artisans, such as housewives and community groups, to produce quality products. These dolls also serve as an educational medium, introducing children to Indonesia's cultural diversity through traditional clothing from various regions while training their creativity. The combination of design innovation, the use of environmentally friendly materials, and the concept of social entrepreneurship makes this

product have a positive impact on society. These dolls are an example of how businesses can support cultural preservation, education, and sustainability, while creating new economic opportunities for local communities.

## 6. Potential commercialization

Educational dolls in traditional clothing have great commercial potential, especially in the educational toy and cultural product market. With increasing public awareness of the importance of sustainability and cultural preservation, this product can attract the interest of the market that cares about the environment and culture. The market potential includes educational toy stores, schools, and learning centers that want to introduce Indonesian culture to children. In addition, this doll can be marketed as a unique product that attracts the interest of consumers who want toys that are not only fun but also educational. The uniqueness of the use of patchwork, hand-sewing techniques, and various traditional clothing designs provide additional appeal that distinguishes it from similar products. By prioritizing the values of sustainability and education, this doll has the opportunity to develop in both domestic and international markets.

## 7. Acknowledgment

Our deepest gratitude goes to Mr. Dr. Tibrani, S.E., M.M., and Mrs. Mira Yona, for their extraordinary guidance, knowledge, and direction throughout this process. The support and guidance provided greatly helped us in understanding and completing this assignment well. We would also like to thank the i-TIEC 2025 Team for their cooperation and valuable contributions in every stage. Thank you also to our friend in Group 1, for their hard work, dedication, and enthusiasm that are always present in every discussion and challenge that we face together. We also thanks for all our friends in the UNRIKA Human Resource Management Study Program, for their togetherness, support, and enthusiasm that inspires each other to continue to develop. May all the goodness that has been given be rewarded accordingly. Thank you for all your support.

## 8. Authors' Biography



Davina Ayudia Anjani is a Management student at the Faculty of Economics and Business. She has an interest in various managerial fields, both related to Human Resource Management (*SDM*), Finance, and Marketing Strategy. In her academic journey, Davina has shown high dedication to her studies and actively participated in various activities that support her skills, knowledge, leadership, and teamwork skills. With the spirit to continue learning and developing, Davina is ambitious to become a professional in the business world, who can have a positive impact on society and the organization where she works in the future.



Sri Idayu is a Management student at the Faculty of Economics and Business. Currently, Sri Idayu is studying in the Management department. With an educational background in the Faculty of Economics and Business, Sri Idayu is ambitious to apply her knowledge and skills in the world of work, especially in the field of management, to make a positive contribution to the development of organizations and society.



Mukminun is a Management student at the Faculty of Economics and Business. Since starting his studies, he has shown a high commitment to the field of study he is pursuing. Through his education at Faculty of Economics and Business, he strives to develop the analytical, managerial, and leadership skills needed for a career in various business and industrial sectors. In the future, Mukminun aspires to work in a well-known company or start his own business, with the aim of helping to create jobs and encourage sustainable economic growth.



Dr. Tibrani, S.E., M.M. earned a doctorate in Economics with a concentration in Marketing Management from the University of 17 August 1945 Surabaya in 2021. Previously, he earned a Masters in Management in Marketing from STIE “KBP” Padang in 2011. Dr. Tibrani, S.E., M.M. has been a Lecturer at the Faculty of Economics and Business since 1997, has experience as Election organizer, namely as the Chairperson of the Batam City KPU in 2004-2008 and a Member of the Riau Islands Province KPU in 2008-2013 and is active in political research and political consultant. As a senior researcher at the Kepri Research and Consulting Institute (KRC – Institute). Other Books: “Election Winning Strategy from a Political Marketing Perspective”, “Marketing Principles Efforts to Understand Marketing Management”, “Entrepreneurship” and “Regional Head Elections in the Perspective of Studies and Empirics (Flashback of the First Pilkada Regime).