



# EXTENDED ABSTRACT



**InViCCAD 2025**  
1<sup>ST</sup> INTERNATIONAL VIRTUAL COMPETITION OF CREATIVE  
ARTS & INNOVATIVE DESIGN IN TEACHING & LEARNING



# Design Innovation Academic Show 2025



Organized by



Fakulti  
Seni Lukis & Seni Reka  
Cawangan Kedah



اوسها تقوى موليا

Collaboration with



#perubahanluarbiasa  
#ADpilihanpertama



**EXTENDED  
ABSTRACT**

**Design  
Innovation  
Academic  
Show 2025**





DIAS 2025 (Design Innovation Academic Show) is all about "Transcending the Boundaries of Creativity: Innovation in Art & Design for 21st Century Education." This vibrant program shines a spotlight on how creativity and innovation are reshaping modern education.

It consists of three key components. First up is the Mindareka Design Show, an exhibition that showcases students' final year projects and creative designs, giving them a chance to connect with industry professionals and the wider community. Next, we have the Northern Innovation Academic Tour (NIAT), which takes participants on an academic adventure to select institutions and innovation centers in the northern region, aimed at promoting knowledge sharing and building strong academic and professional networks.

Finally, there's the 1st International Virtual Competition of Creative Arts & Innovative Design in Teaching & Learning (InViCCAID), a global competition that recognizes outstanding practices in teaching and learning by blending art, technology, and innovative design. But DIAS 2025 is more than just a talent showcase; it's a powerful platform for empowering both students and educators, while also strengthening collaborations between universities, creative industries, and global communities. With its inclusive and interdisciplinary approach, this initiative strives to spark relevant, competitive, and impactful ideas and innovations that truly benefit society and push the future of education forward.



**Publisher**

Universiti Teknologi MARA Kedah Branch,  
Sungai Petani Campus,  
08400 Merbok,  
Sungai Petani,  
Kedah,  
Malaysia.

Copyright 2025 Faculty of Arts and Design,  
Universiti Teknologi MARA Kedah Branch.

Copyright © is held by the owners/authors. The extended abstract is published in all rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form of any means electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher or author.

Perpustakaan Negara Malaysia  
Cataloguing – in- Publication Data

Editor : Syahrini Shawalludin, Juaini Jamaludin, Normaziana Hassan, Fadila Mohd Yusof

Co-Editor : Shafilla Subri, Mohd Syazrul Hafizi Husin, Abu Hanifa Ab Hamid, Norarifah Ali, Zaidi Yusoff, Mohd Taufik Zulkefli, Mohd Hamidi Adha Mohd Amin, Ahmad Fazlan Ahmad Zamri, Abdullah Kula Ismail, , Suhaiza Hanim Suroya, Mohamad Hazmi Shoroin, Mohd Zamri Azizan, Mohamat Najib Mat Noor, Asrol Hasan, Azhari Md Hashim, Azmir Mamat Nawawi, Dinah Rakhim, Hasnul Azwan Azizan@ Mahdzir, Nazri Abu Bakar, Muhammad Aiman Afiq Mohd Noor, Nizar Nazrin, Nazirul Mubin Awang Besar, Qatrunnisa Shariff, Mohd Rozman Mohd Nasir, Wan Noor Faaizah Wan Omar

Design & Layout Editor: Syahrini Shawalludin, Nazirul Mubin Awang Besar, Mohd Rozman Mohd Nasir & Qatrunnisa Shariff

Language Editor : Normaziana Hassan & Juaini Jamaludin

DIAS 2025 : Extended Abstract

Perpustakaan Sultan Badlishah  
e ISBN: 9 789 672 948 780

Printed By :  
Universiti Teknologi MARA Kedah Branch,  
Sungai Petani Campus,  
08400 Merbok,  
Sungai Petani,  
Kedah,  
Malaysia.





# CONTENTS

**Rector's Message**  
**Head of College's Message**

## EXTENDED ABSTRACT

**Diploma in Art & Design**  
(Graphic Design & Digital Media)

**Page**

**1 - 174**

**Diploma in Art & Design**  
(Industrial Design)

**175 - 575**

**Bachelor in Art & Design**  
(Industrial Design)

**576 - 760**

**D**esign  
*Innovation*  
**A**cademic  
**S**how 2025



**Prof. Dr. Roshima Haji Said**  
Acting Rector  
UiTM Kedah Branch

# Rector's Message

I am delighted to extend my heartfelt congratulations to the College of Creative Arts, UiTM Kedah Branch, for bringing MINDAREKA 2024 - Unleashing Your Visual Creativity to fruition. The triumphs of past MINDAREKA editions undoubtedly fueled the organization of this year's event, making MINDAREKA 2024 a reality.

MINDAREKA 2024 - Unleashing Your Visual Creativity stands as a testament to the dedication of students at the College of Creative Arts, UiTM Kedah Branch, providing them with a platform to showcase their final art projects. Beyond serving as a space for the exploration of fresh, innovative, and entrepreneurial concepts, this exhibition is poised to connect aspiring talents with potential clients and employers.

I extend my sincere gratitude to all participants whose enthusiasm and support have contributed to the success of MINDAREKA 2024 - Unleashing Your Visual Creativity. Their unwavering belief and commitment have truly brought this event to life, marking it as a resounding triumph!





# Head of Faculty Message

It is an honour to introduce DIAS 2025 – Design Innovation Academic Show, held under the theme “Transcending the Boundaries of Creativity: Innovation in Art & Design for 21st-Century Education.” This significant event reflects the faculty’s ongoing commitment to fostering a culture of innovation, critical thinking, and creative exploration among our students and academic community. As we navigate the complexities of the 21st century, it becomes increasingly clear that education must go beyond traditional boundaries to embrace multidisciplinary approaches that are both relevant and future-forward.

The three core components of DIAS 2025, Mindareka Design Show, Northern Innovation Academic Tour (NIAT), and the 1st International Virtual Competition of Creative Arts & Innovative Design in Teaching & Learning (InViCCAID) which is serve as vital platforms to highlight the convergence of design, technology, and pedagogy. These initiatives not only empower our students to showcase their talents and ideas, but also create opportunities for engagement with industry leaders, academic peers, and global collaborators. The Mindareka Design Show celebrates student creativity and innovation through compelling final year projects. NIAT fosters knowledge sharing and institutional partnerships through academic visits and exchanges, while InViCCAID offers international recognition for excellence in integrating art and design into teaching and learning.

I would like to express my deepest appreciation to the organising committee, faculty members, students, and strategic partners who have worked tirelessly to bring this programme to life. Your dedication and collaborative spirit have made DIAS 2025 a reality and a reflection of our shared vision for transformative education. It is my hope that this platform will continue to inspire meaningful dialogue, cultivate groundbreaking ideas, and spark a new wave of innovation that enriches both education and society.



**Mohamat Najib Mat Noor**  
Head of Faculty  
Faculty of Arts & Design  
UiTM Kedah Branch





***Industrial  
Design  
(Diploma)***





## EDU-GARDEN: INNOVATIVE DESIGN OF GARDEN-BASED EDUCATIONAL MATH TOYS TO SUPPORT CHILDREN'S MATHEMATICAL LEARNING

Nur Fatahiah Dania Binti Mustaffa, Azmir Bin Mamat Nawi

Industrial design Department  
Faculty Of Art and design  
Universiti Teknologi mara (UiTM)

### ABSTRACT

The Edu-Garden project was inspired by issues shared during interviews with EduKids staff and observations at children's events. Staff frequently reported problems with the durability of electronic toys used in public play areas, noting that these often break under the stress of frequent handling. To address this, Edu-Garden introduces a non-electronic, modular toy that supports children's early math learning. Designed for children aged 5 to 6, the toy incorporates a garden theme, featuring a perforated board base and soft 3D components such as flowers, bugs, and mushrooms made from pool sponge. This hands-on, tactile learning experience enhances counting, sorting, and number recognition while promoting safety, durability, and ease of maintenance. The project employs a human-centred design approach through observations, interviews, and iterative prototyping, resulting in a solution well-suited for community play environments.

**Keywords:** Garden-themed Toy, Math Education, Modular Play, Perforated Plate, Pool Sponge, Human-Centered Design

### INTRODUCTION

Edu-Garden is a creative, garden-themed educational toy that aims to boost children's math skills through fun, interactive play. Tailored for little learners aged 5 to 6, this product turns abstract math ideas into hands-on activities, featuring nature-inspired elements like mushrooms, flowers, and ladybirds. Its modular and plug-in parts are crafted to help kids with number recognition, counting, pattern-making, and problem-solving.

Made from lightweight, durable plastic, Edu-Garden is designed for safe play, boasting rounded edges, washable surfaces, and a sturdy freestanding structure. The eye-catching tree design encourages kids to explore and learn, whether on their own or in groups. With an easy-to-navigate layout and clearly defined interaction zones, it fosters meaningful engagement in both classrooms and at home. By blending educational benefits with imaginative garden play, Edu-Garden provides a sustainable, reusable, and enriching learning experience that aligns perfectly with early childhood development goals.

## MATERIALS AND METHODS



Figure 1.1 The picture of final body structure

The goal of this research was to explore the need and significance of the Edu-Garden toy as a garden-themed educational math tool for young kids. We gathered data through interviews with parents and teachers, as well as by observing how children interacted with early prototypes and sketch concepts. Our main focus was to assess the design's appeal, perceived educational benefits, safety, and usability from the viewpoint of adults who make decisions and observe the children.

The findings showed that the toy's visual appeal, the safety of its materials, and the interactive nature of its plug-in garden elements like mushrooms, flowers, and ladybirds were all well-received. Most respondents felt that the toy had great potential to enhance mathematical learning through activities like counting, matching, and hands-on engagement. The use of soft-edged plastic and sponge protection was highlighted as a particularly safe feature for the intended age group.

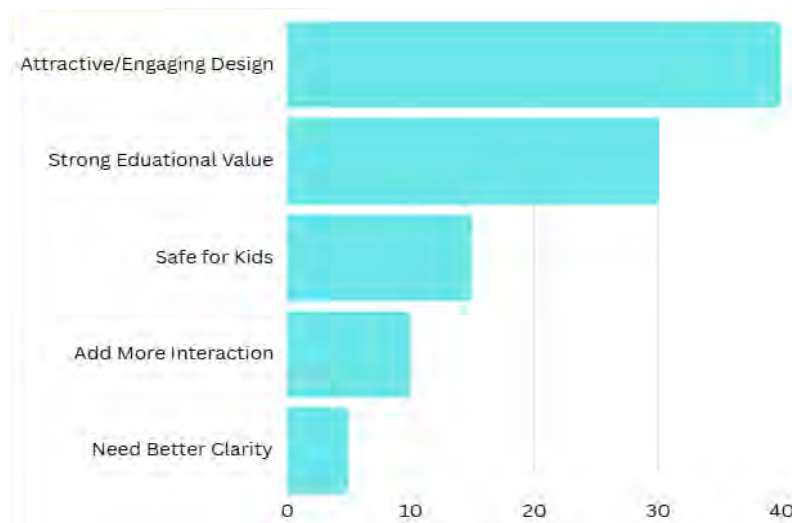


Figure 1.2 Respondents' Feedback on Edu-Garden Concept

The row chart provides a clear overview of the key feedback gathered from interviews and observations. A significant portion of respondents, about 70%, found the toy visually appealing and believed it had great educational value. Additionally, 15% of participants recognised the safety features, indicating that the design aligns with early childhood safety standards. On the flip side, some respondents (10%) suggested incorporating more interactive elements, while a small group (5%) mentioned that the toy's purpose might not be immediately obvious without some explanation. These insights highlight the need for further development of the Edu-Garden toy to improve clarity and boost engagement.



Figure 1.3 The picture of environment (Edu-Garden)

## REFERENCES

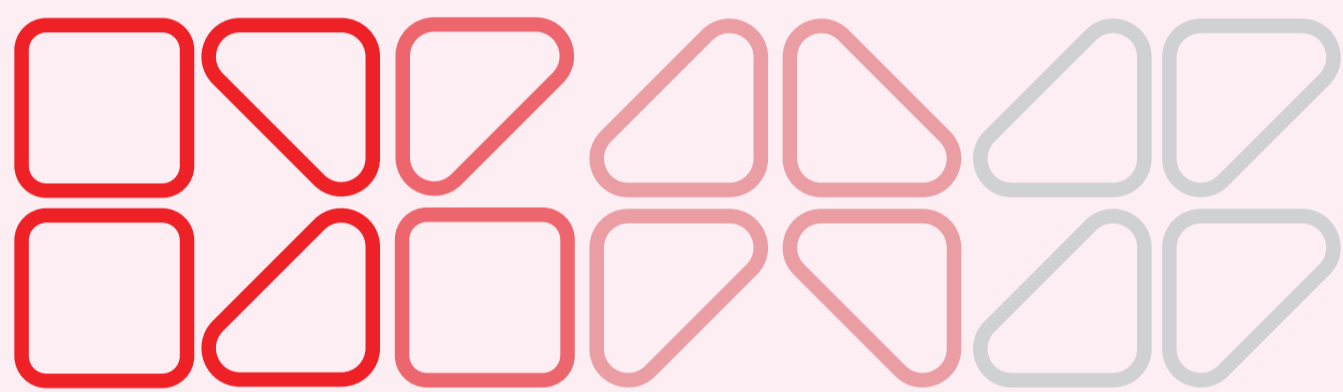
Civil, M., & Khan, C. (2001). *Mathematics instruction developed from a garden theme*. [https://www.researchgate.net/publication/234696847\\_Mathematics\\_Instruction\\_Developed\\_from\\_a\\_Garden\\_Theme](https://www.researchgate.net/publication/234696847_Mathematics_Instruction_Developed_from_a_Garden_Theme)

Hewitt, D. (2001). *An observational study of preschoolers' math and science learning in a garden*. ERIC. <https://files.eric.ed.gov/fulltext/EJ1108468.pdf>

Lucero, L. (2021). *Growing young mathematicians: Engaging young learners with mathematics through designing and planting a garden*. [https://www.researchgate.net/publication/356221907\\_Growing\\_Young\\_Mathematicians\\_Engaging\\_Young\\_Learners\\_with\\_Mathematics\\_through\\_Designing\\_and\\_Planting\\_a\\_Garden](https://www.researchgate.net/publication/356221907_Growing_Young_Mathematicians_Engaging_Young_Learners_with_Mathematics_through_Designing_and_Planting_a_Garden)

Wikipedia contributors. (2023, July). *Embodied design*. In Wikipedia. [https://en.wikipedia.org/wiki/Embodied\\_design](https://en.wikipedia.org/wiki/Embodied_design)

Wikipedia contributors. (2023, July). *Garden-based learning*. In Wikipedia. [https://en.wikipedia.org/wiki/Garden-based\\_learning](https://en.wikipedia.org/wiki/Garden-based_learning)



# DMS



اَوْنِيُوْ تِيكْنُوْلُوْجِي مَارَا  
UNIVERSITI  
TEKNOLOGI  
MARA



9 789672 948780

