UNIVERSITI TEKNOLOGI MARA

EXTENDED ABSTRACT

DKA 2025

InVICCAID 2025
1ST INTERNATIONAL VIRTUAL COMPETITION OF CREATIVE ARTS & INNOVATIVE DESIGN IN TEACHING & LEARNING

MONDARIKA

NIAT
NORTHERN INNOVATION ACADEMIC TOUR

Design Innovation Academic Show 2025

Organized by

Faculty of Art & Design
#perubahanluarbiasa
#ADpilihanpertama

UNIVERSITI TEKNOLOGI MARA
Fakulti Seni Lukis & Seni Reka
Cawangan Kedah

UiTM di hatiku

Collaboration with

PUSAT SAINS NEGARA WILAYAH UTARA

KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI
MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION

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.

Perpustakaan Negara Malaysia
Cataloguing – in- Publication Data

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

	Page
Diploma in Art & Design (Graphic Design & Digital Media)	**1 - 174**
Diploma in Art & Design (Industrial Design)	**175 - 575**
Bachelor in Art & Design (Industrial Design)	**576 - 760**

Design Innovation Academic Show 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

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

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.

Industrial Design (Bachelor)

STRIDEEASE | WALKING STICK WITH SEAT

[1] Mohd Danish Bin Mohd Hafiz, [2]Dr. Hasnul Azwan Bin Azizan @ Mahdzir

Industrial Design Department,
Faculty of Art and Design,
Universiti Teknologi MARA (UiTM)
mohddanishhafiz420@gmail.com

ABSTRACT

With its innovation in mobility aids, **StrideEase**-a walking stick with a seat for the elderly-gives comfort, security, and independence to seniors who seek support while walking or during a break in their daily routine. A walking stick and a folding seat come together in this multifunctional device, thus allowing the user to rest as needed at public places or during long walks. The design of the **StrideEase** focuses on ergonomics, stability, and ease of use. Using lightweight materials such as stainless steel and modified polyethyelene terepthalate gives controllable weight while maintaining strength. It has an ergonomically designed handle that promotes grip and reduces the amount of stress on the wrist. The seat easily folds and locks into place, providing a solidly secure sitting surface. There are also anti-slip rubber tips for extra grip, which make the **StrideEase** appropriate for numerous different indoor and outdoor applications. **StrideEase** is intended for elderly people and those with limited stamina, as well as for caregivers in search of a reliable mobility aid. In its strong yet compact design, **StrideEase** encourages healthy aging by facilitating movement while preventing fatigue and offering convenience. It is a truly thoughtful, inclusive design that endeavors to enhance the quality of life through its functional attributes and ease of use.

Keywords: Mobility Aid, Safety, Foldable Seat, Ergonomics, Durable

INTRODUCTION

As the number of elderly people around the world keeps growing, the demand for practical and mobility aids is becoming more crucial than ever. Aging can bring about challenges like decreased stamina, balance problems, and fatigue while moving, which can hinder independence and outdoor activities. Enter **StrideEase**: a walking stick with a seat specifically designed for seniors. This innovative solution tackles these issues head-on by combining the essential support of a walking stick with the convenience of a foldable seat, allowing users to move with confidence and take a break whenever they need to. It's especially handy in public areas where seating might be scarce or nonexistent. Crafted from lightweight, durable materials and featuring an ergonomic handle, **StrideEase** prioritizes both comfort and stability. Its compact and user-friendly design makes it perfect for older adults who cherish their independence, safety, and ease of use in their daily lives. **StrideEase** not only boosts mobility but also encourages an active and dignified lifestyle for aging individuals.

MATERIALS AND METHODS

Figure 1.1 The picture of process making for final model

The **StrideEase** walking stick with a seat is thoughtfully designed using a blend of strong, lightweight, and user-friendly materials to guarantee safety, durability, and comfort. The main body and legs are made from stainless steel tubes, selected for their exceptional strength, corrosion resistance, and dependable support for body weight. These tubes are shaped using a specialized bending technique to achieve the right structure and angles, ensuring stability, foldability, and ease of use.

The handle is crafted from PETG (polyethylene terephthalate glycol-modified) plastic, which is known for its durability, impact resistance, and ergonomic flexibility. Utilizing 3D printing technology, the handle can be precisely shaped, allowing for customized grip contours and texturing that enhance comfort and reduce slippage during use.

The seat component features a commercially available foldable seat that is both durable and comfortable. This seat was chosen for its proven load-bearing capacity and its seamless integration with the stainless-steel frame. Its compact design adds to the stick's portability, making it easy to fold out and lock securely when in use.

In summary, the choice of materials and techniques like tube bending and 3D printing come together to create a practical, sturdy, and ergonomic tool that's

perfect for elderly users looking for both support and a place to rest.

RESULTS AND DISCUSSION/FINDINGS

The development of **StrideEase** has shown some really encouraging results when it comes to functionality, comfort, and overall performance. By using stainless steel tube for the body and legs, I created a sturdy and stable frame that can easily support the weight of an average adult without any bending or warping. The bending technique I applied to the stainless steel allowed for smooth and precise curves, which means the foldable seat mechanism operates reliably and safely.

The handle, made from PETG and 3D-printed, is not only ergonomic but also comfortable to hold, providing a solid grip for extended use. It held up well against stress and wear during testing, suggesting it's built to last. The existing foldable seat component fits perfectly with the frame, ensuring both durability and ease of use, with no wobbling when sitting down.

All these insights back up the idea that this product is a practical mobility aid that boosts comfort, independence, and safety for older users.

CONCLUSION & RECOMMENDATION

The **StrideEase** walking stick with a seat is designed to meet the needs of elderly users by blending mobility support with a handy resting feature. Made from stainless steel tubes, it boasts a sturdy, stable, and rust-resistant frame, while the 3D-printed PETG handle ensures a comfortable and secure grip. Plus, the addition of a durable seat enhances its practicality without adding extra weight, making it easy to carry around. This versatile aid has shown to boost user confidence, lessen fatigue during longer walks, and encourage independence in everyday activities. With its user-friendly design and positive feedback from initial tests, it's clear that **StrideEase** is both practical and beneficial for older adults. To improve the product

further, it would be great to conduct more tests with a larger group of elderly users to gather wider feedback. Exploring adjustable height options could also help personalize the experience, and adding anti-slip padding or cushioning would enhance comfort. Future versions might even include storage compartments or smart features for added convenience and safety.

REFERENCES

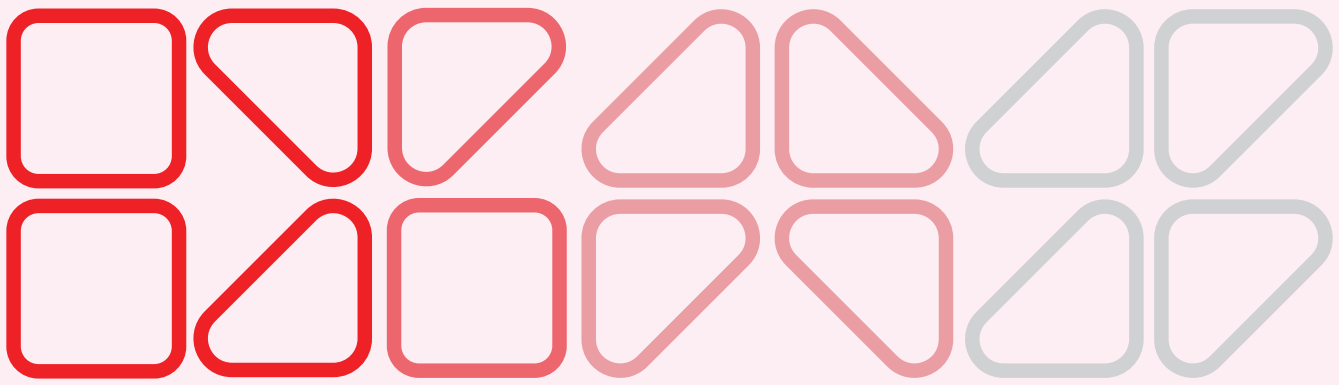
1. Borg, F., & Kesztyüs, D. (2020). Designing assistive devices for elderly people: A user-centered approach. Journal of Aging and Innovation, 12(2), 45–56. https://doi.org/10.1016/j.jain.2020.04.003

2. Gyi, D. E., & Porter, J. M. (1999). Interface pressure and the prediction of seat discomfort. Applied Ergonomics, 30(5), 431–437. https://doi.org/10.1016/S0003-6870(99)00038-4

3. Liu, L., & Stroulia, E. (2013). Smart homes and home health monitoring technologies for older adults: A systematic review. Journal of Aging Research, 2013, Article 1–10. https://doi.org/10.1155/2013/569194

4. Miller, C. A. (2017). Digital health design for aging populations. In Designing for Healthcare (pp. 112–131). Morgan Kaufmann. https://doi.org/10.1016/B978-0-12-812203-7.00006-6

5. World Health Organization. (2015). World report on ageing and health. https://www.who.int/publications/i/item/9789241565042



DAS

UNIVERSITI TEKNOLOGI MARA

9 789672 948780