



EXTENDED ABSTRACT



InViCCAD 2025
1ST 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.



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Design
Innovation
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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

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)***





STRIDE+ | MULTIFUNCTIONAL WALKING AID FOR TOILET AND ABLUTION AREAS

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ABSTRACT

As our global population ages and more people face mobility challenges, the demand for assistive devices that cater to both physical and cultural needs is on the rise, especially when it comes to hygiene-related tasks. Enter STRIDE+, a versatile walking aid crafted to assist elderly and physically disabled individuals during toileting and ablution (wudu') activities at Murtadha Dakwah Centre (MADAD). Many traditional mobility aids struggle in wet, cramped, or culturally sensitive environments, but STRIDE+ fills that void by combining walking support, toilet assistance, and ablution help into one sleek, ergonomic design. The focus here is on ensuring user safety, comfort, and dignity. STRIDE+ boasts features like non-slip rubber grips, water-resistant and rustproof materials, and a flippable seat to meet various user requirements. Its sleek and lightweight support frame is perfect for tight spaces like small bathrooms, toilet stalls, and wet areas in MADAD, while the four wheels make it easier to move around. Plus, the modular design allows for customisation in different environments, from private homes to eldercare facilities and places of worship like mosques. Developed through thorough benchmarking, several observations, and interviewing the visitors and people in charge in MADAD, STRIDE+ adheres to universal design principles and accessibility standards. Its lightweight yet sturdy build promotes ease of use and encourages independence for those with limited mobility. By tackling both practical and cultural hygiene needs, STRIDE+ emerges as an inclusive and innovative solution in the realm of assistive design. Ultimately, it strives to enhance quality of life, promote autonomy, and lessen the burden on the individuals managing daily hygiene with mobility constraints.

KEYWORDS: Multifunctional, Mobility, Ablution, Inclusive Design, Toilet

INTRODUCTION

STRIDE+ is an innovative and practical walking aid crafted to assist elderly individuals and those with physical disabilities during toileting and ablution (wudu') tasks. Many mobility aids on the market fall short when it comes to wet, cramped, or culturally sensitive spaces. STRIDE+ addresses this issue by merging three essential functions into one handy tool: walking support, toilet assistance, and help with ablution. Constructed with non-slip grips and made from waterproof and rustproof materials, it features a flip-up seat that ensures safety and ease of use, even in small bathrooms and wet areas like those found at the Murtadha Dakwah Centre (MADAD). Plus, its lightweight, flappable seat and durable wheel design make it a breeze to store and transport. This product was born from careful observation of real users, conversations with carers or family members, and a thorough examination of the challenges present in current facilities. STRIDE+ embraces universal design principles to promote independence, comfort, and dignity. It's a straightforward yet impactful solution that makes hygiene routines easier, safer, and more respectful for those facing mobility challenges.



Figure 1: STRIDE+



MATERIALS AND METHODS

The STRIDE+ Multifunctional Walking Aid is crafted from lightweight, durable, and water-resistant materials, ensuring safety, comfort, and ease of use in toilet and ablution areas. Its main frame is made of anodised aluminium, which is not only rustproof but also sturdy enough to support users weighing over 150 kg. The seat is made from injection-moulded polypropylene (PP), a smooth, non-porous material that's easy to clean and resistant to water and bacteria. The backrest and arm supports are constructed from tough ABS plastic, reinforced for added strength, and covered with textured thermoplastic rubber (TPR) to provide a secure, non-slip grip. The legs are made from stainless steel and come with telescopic settings and ABS locking knobs for easy height adjustment. Each leg features a high-friction rubber cap at the end to prevent damage when hitting any surface while using the toilet or taking wudu'. The design of the STRIDE+ takes a modular approach, with the four durable wheels allowing for easier mobility and cleaning. Most parts are crafted using precise CNC cutting or injection moulding techniques, allowing them to fit together securely with snap-fit joints or standard fasteners, all without the need for complicated tools. The final structure was developed through ergonomic testing and digital simulations to ensure it supports proper posture, aids in sit-to-stand movements, and fits comfortably in compact hygiene spaces.

RESULTS AND DISCUSSION / FINDINGS

The creation of STRIDE+ stemmed from the pressing need for a versatile mobility aid that tackles the physical, environmental, and cultural hurdles faced by elderly and disabled individuals in toilet and ablution spaces. Insights gathered from both observational and thematic analyses shed light on user behaviour, infrastructure shortcomings, and safety issues. Accessibility and User Needs According to the Observation Analysis Report, accessibility was alarmingly poor, with 60% of toilet areas and 60% of wudu areas deemed inaccessible. Major concerns included the absence of ramps, grab bars, flat surfaces, and sufficient support structures for elderly or disabled users. These findings underscore the importance of a product like STRIDE+, which offers built-in support features such as hand grips, sit-to-stand assistance, and

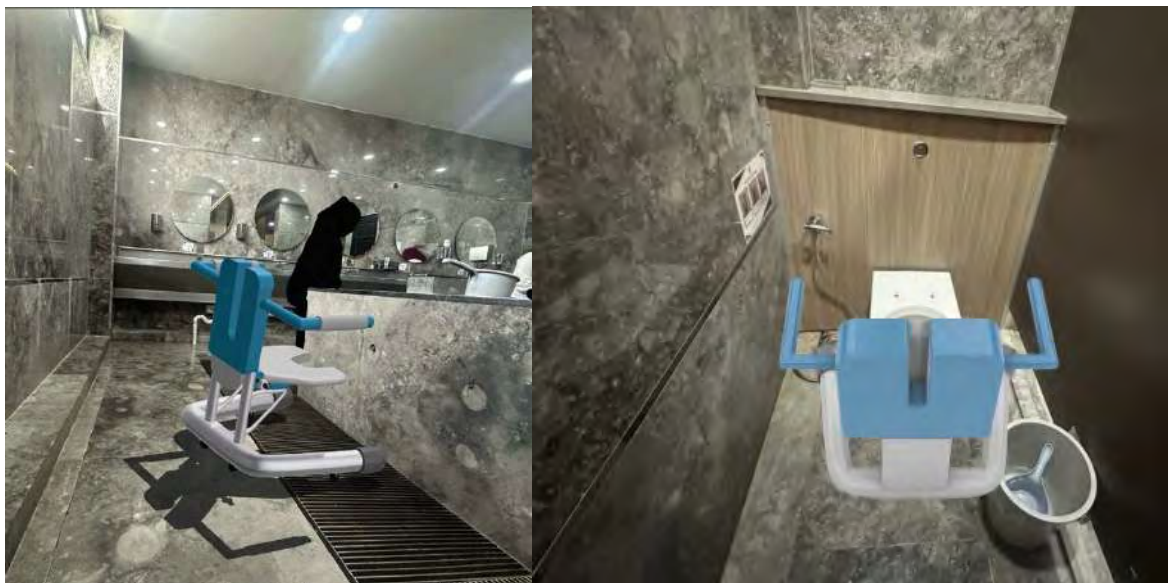
adjustable height to cater to a variety of user needs. Safety and Environmental Limitations Recurring safety hazards included slippery floors, sloped surfaces, and overcrowded wudu areas. STRIDE+ effectively addresses these challenges by incorporating non-slip feet, water-resistant materials, and a compact design that allows for easy manoeuvring in tight or crowded spaces. Emotional Comfort and Hygiene While hygiene received a relatively high score of 61.1% and emotional comfort was rated at 53.3%, the absence of inclusive features led to feelings of anxiety and discomfort among vulnerable users. STRIDE+ aims to improve this experience by using cleanable materials, ergonomic design, and a culturally sensitive approach, particularly for ablution tasks. User-Centred Design Validated Thematic evidence revealed a consistent demand for seating, anti-slip surfaces, and handrails, all of which are integral to STRIDE+. This product is designed with real user needs in mind, ensuring both comfort and independence.

Physical Safety and Infrastructure Design	Wet floors, lack of anti-slip measures, and sloped surfaces caused safety concerns.	'Lantai dia licin.' / 'Slipper semua takda.' / 'Tempat cedok tu curam.'	Risk of slips and falls, especially among elderly users.	Install anti-slip flooring, ensure slippers are available, fix uneven/sloped areas.
Suitability for Elderly and OKU	Facilities lack support features like handrails or seating for elderly or disabled users.	'Kesian la kat mereka nak kena membongkok.' / 'Untuk OKU tu agak tidak mesra.'	Elderly and OKU users may avoid using the facility or face injury risks.	Provide grab bars, low stools, wheelchair-accessible wudu stations, and stable flooring.
Comfort and User Experience	Able-bodied users felt comfortable, but crowding affected experience	'Selesa sangat.' / 'Tapi hari ni busy, jadi crowded sikit.'	Crowding could discourage use or cause discomfort.	Improve flow layout, add more wudu stations to

Figure 2 Observing

CONCLUSION

STRIDE+ is a thoughtfully designed walking aid that puts users first, catering specifically to the unique challenges faced by elderly and physically disabled individuals in hygiene-sensitive spaces like toilets and ablution (wudu') areas. By combining walking support, toilet assistance, and ablution facilitation into one compact unit, STRIDE+ offers a safe, ergonomic, and culturally considerate solution that boosts mobility, independence, and personal dignity. Research has highlighted significant shortcomings in current public hygiene facilities, such as poor accessibility, insufficient support features, and safety hazards like slippery floors and cramped spaces. STRIDE+ addresses these issues head-on with its adjustable, non-slip design, water-resistant materials, and modular structure, making it ideal for use in homes, eldercare facilities, and places of worship. To maximise the effectiveness of STRIDE+, here are some recommendations: - Increase field testing in various settings (like rural clinics, mosques, and nursing homes) to ensure usability across different demographics. - Partner with healthcare and religious organisations to tailor design elements for specific user groups, including those who use wheelchairs or are recovering from surgery. With careful refinement and broader implementation, STRIDE+ could become a vital resource in inclusive hygiene care, setting new benchmarks in assistive design and support for the elderly.





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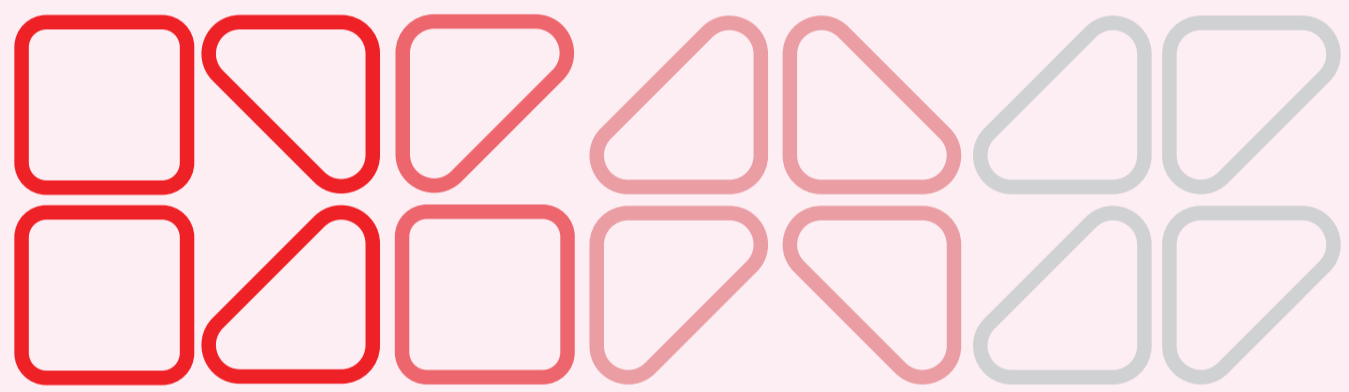
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