

Proceeding of International University Carnival on E-Learning



INTERNATIONAL UNIVERSITY CARNIVAL ON E-LEARNING

*“ Embracing AI for
Innovative Learning and
Inclusive Education ”*

Chief Editor
Loh Ser Lee

Editors
Nur Zareen Zulkarnain
Safiza Suhana Kamal Baharin
Gan Chin Kim

Proceeding of International University Carnival on E-Learning



***“ Embracing AI for
Innovative Learning and
Inclusive Education ”***

Chief Editor

Loh Ser Lee

Editors

Nur Zareen Zulkarnain

Safiza Suhana Kamal Baharin

Gan Chin Kim

Penerbit UTeM Press

Universiti Teknikal Malaysia Melaka

2026

© Universiti Teknikal Malaysia Melaka

eISBN: 978-629-7892-04-7

FIRST PUBLISHED 2026

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, electronic, mechanical photocopying, recording or otherwise, without the prior permission of the Penerbit UTeM Press, Universiti Teknikal Malaysia Melaka.

Member of the Malaysian Scholarly Publishing Council (MAPIM)

Member of the Malaysian Book Publishers Association (MABOPA)

Member of Clarivate Analytics

Published and Printed in Malaysia by

Penerbit UTeM Press

Universiti Teknikal Malaysia Melaka

Hang Tuah Jaya, 76100 Durian Tunggal, Melaka, Malaysia.

Tel: +606 229 2133 Faks: +606 229 2433



Cataloguing-in-Publication Data

National Library of Malaysia

A catalogue record for this book is available
from the National Library of Malaysia

eISBN 978-629-7892-04-7

Editorial & Production Team

Chief Editor

Loh Ser Lee

Editors

Nur Zareen binti Zulkarnain
Safiza Suhana binti Kamal Baharin
Gan Chin Kim

Graphic Designer

Aziza binti Md Buang

Technical Support Unit

Muhammad Razan Aimi bin Ruzaiman
Muhamad Azmi bin Zainal
Nur Athirah Husna binti Radzuan
Ani binti Jaffri
Zulaiha binti Md Ali
Asmadi bin Md Daud
Mohd Fahrulrazi bin Saji
Abdul Azim bin Azahari

Preface

We are pleased to present the e-Proceedings of the International University Carnival on E-Learning 2025 (IUCEL2025), organised by the Centre for Open and Distance Learning (CODL), Universiti Teknikal Malaysia Melaka (UTeM), in collaboration with the Ministry of Higher Education Malaysia (MoHE). The event was supported by the Department of Higher Education, MoHE, and the Public University e-Learning Council (MEIPTA).

Held on 13 November 2025, IUCEL2025 brought together 196 e-learning innovators from 26 institutions. All presenters were invited to submit extended abstracts in August 2025. After a thorough evaluation and peer-review process completed in September 2025, a total of 160 articles were accepted for inclusion in this publication. The papers compiled here represent diverse perspectives and practices aligned with the event's theme, *“Embracing AI for Innovative Learning and Inclusive Education.”*

We extend our sincere appreciation to all authors for their valuable contributions, as well as to the panel of reviewers for their time and expertise. Special acknowledgement is also extended to the Patron of IUCEL2025, Professor Datuk Ts. Dr. Massila binti Kamalrudin, and Chairman, Professor Ir. Dr. Gan Chin Kim, for their leadership and guidance throughout the preparation of this event.

We also express our heartfelt gratitude to the CODL and UTeM team members whose dedication made this publication possible. We hope that the research and ideas presented in this e-proceedings will serve as a meaningful reference for educators, researchers, and practitioners committed to advancing e-learning innovation.

Editors

IUCEL2025 E-Proceedings

Foreword

As Patron of the International University Carnival on E-Learning 2025 (IUCEL2025), I am pleased to present this e-proceedings, which reflects Universiti Teknikal Malaysia Melaka's (UTeM) continued commitment to advancing innovation in digital learning. In collaboration with the Ministry of Higher Education Malaysia (MoHE), IUCEL2025 stands as a testament to our aspiration to nurture a progressive and inclusive educational ecosystem enriched by emerging technologies.

The theme, *“Embracing AI for Innovative Learning and Inclusive Education,”* captures the spirit of transformation shaping higher education today. Artificial intelligence, when applied thoughtfully, has the capacity to broaden access, personalise learning experiences, and strengthen teaching effectiveness across diverse disciplines. IUCEL2025 offered a valuable avenue for educators, researchers, and practitioners to reflect on these opportunities and share meaningful insights that will guide the future of e-learning in Malaysia and beyond.



I would like to express my appreciation to all contributors who have shared their work in this publication. My gratitude also goes to the organising committee members, especially those from Centre for Open and Distance Learning (CODL), for their dedication in ensuring the success of IUCEL2025.

I hope that this e-proceedings will serve as a useful resource and inspire continued exploration, collaboration, and innovation in the pursuit of excellence in teaching and learning.

PROFESSOR DATUK TS. DR. MASSILA BINTI KAMALRUDIN

Vice-Chancellor

Universiti Teknikal Malaysia Melaka (UTeM)

Patron, IUCEL2025

TABLE OF CONTENTS

	Editorial & Production Team	i
	Preface	ii
	Foreword	iii
1	SCALABLE MULTI-TIER ASSESSMENT SYSTEM USING CLOUD AND COLLABORATIVE EVALUATION FOR SERVICE-LEARNING PARTICIPATION <i>Masnida Hussin, Nurdiyana Athirah Mohd Asman, Zurita Ismail, Mohamed Faris Laham, Nor Azura Husin & Siti Khadijah Ali</i>	1
2	I-ASSIGNMENT BASED EVALUATION CAD WITH AI VIA ELEARN@USM <i>Mohd Salman Abu Mansor</i>	5
3	STOP! THAT’S MY SPACE: A PICTURE BOOK-BASED SAFETY EDUCATION TOOL FOR EDUCATORS AND CAREGIVERS TO EMPOWER CHILDREN <i>Nur Hidayah Safarudin, Grace Wong Wang Yiing & Natasha Rusdy Wong</i>	8
4	ARTriBE: LEARNING BRIS FOREST PLANTS DIVERSITY <i>Nur Saadah Mohd Shapri, Normala Rahim, Maizan Mat Amin, Mohd Nordin Abdul Rahman, Wan Rizhan & Nadzifah Yaakub</i>	13
5	PERSONALISING LEARNING AT SCALE: A MIXED-METHOD STUDY OF AI-GENERATED BILINGUAL AVATARS AND ADAPTIVE FEEDBACK <i>Jasmine Jain, Mindy Tay Pei Lin, Lee Yee Ling & Tan Shin Yen</i>	17
6	AI-INFUSED DESIGN THINKING FOR INCLUSIVE EDUCATION <i>Chockalingam Aravind Vaithilingam, Murugan Thangiah, Manee Sangaran Diagarajan & Manuel B Garcia</i>	21
7	ENGAGING THE QUIET MIND: LEVERAGING GAMIFICATION AND GENERATIVE AI IN ACTUARIAL GROUP ASSIGNMENTS <i>Lai Kee Huong</i>	25
8	INCLUSIVE LEARNING THROUGH IOT-ENABLED WATER QUALITY MONITORING FOR NIPA PALM AND GULA APONG PRODUCTION-TOWARDS AI EDUCATION <i>Dayang Azra Awang Mat, Hu Guo Huan, Dyg Norkhairunnisa Abang Zaidel & Shafrida Sahrani</i>	29
9	CEKAP I’RAB: MODUL PEMBELAJARAN FLEKSI ARAB BERASASKAN VISUAL <i>Mohd Fauzi Abdul Hamid, Mohamad Lukman Al Hakim Md. Noor, Mohd Firdaus Yahaya, Shaferul Hafes Sha’ari, Wan Muhd Hafizudin Wan Amri Faizal, Azrul Hafiz Kamarudin & Ahmad Fikri Nasrom</i>	32

10	STEMVERSE PHYSIC WORLD: REIMAGINING GRAVITY THROUGH THE METAVERSE <i>Syadiah Nor Wan Shamsuddin & Muhammad Qayyum Mat Nazan</i>	36
11	AI-SCAFFOLDED: BRIDGING PEDAGOGICAL THEORY AND PRACTICE FOR FUTURE EDUCATORS <i>Lee Yee Ling & Vinothini Vasodavan</i>	40
12	DNA TO PROTEIN BOARD GAME: A QR AND AR-ENHANCED BIOTECHNOLOGY BOARD GAME <i>Nadiawati Alias, Nor Hasima Mahmud & Mohd Fahmi Abu Bakar</i>	44
13	CHEMREACT AI: CHATBOT-BASED VIRTUAL LEARNING ASSISTANT FOR ORGANIC CHEMISTRY REACTIONS <i>Norsyafikah Asyilla Nordin & Salmiah Jamal Mat Rosid</i>	47
14	INTEGRATING ARTIFICIAL INTELLIGENCE IN ASSESSING CHILDREN'S AWARENESS OF ENVIRONMENTAL ISSUES THROUGH E-DIGITAL GAMES <i>Sitti Diana binti Tamjehi, Jacey Lynn Minoi, Wilson Rangga anak Anthony Jiram, Farah binti Zaini & Azhaili bin Baharun</i>	50
15	BEAM FRAMEWORK: DRIVING INNOVATIVE AND INCLUSIVE LEARNING TOWARDS AI-READY EDUCATION <i>Nurulfajar bin Abd Manap, Anis Suhaila binti Mohd Zain & Azma Putra</i>	54
16	REIMAGINING LEARNING WITH AI-POWERED HYFLEX EDUCATION <i>Lim Chee Leong & Choong Wai Keng</i>	58
17	GUIDING THE FUTURE: AI-ENHANCED MENTORING FOR REAL-WORLD IN FINAL YEAR PROJECT MODULES <i>G. Manickam Govindaraju & Thanam Subramaniam</i>	63
18	A NEW FRONTIER: HOW THE NFC STUDENTS CARD SYSTEM INTEGRATE IN EDUCATION LEARNING <i>Dayang Kartini Binti Abang Ibrahim, Fatin Ardani Binti Zamri & Muhd Syahazizamir Bin Sahmat</i>	67
19	EDTECH: AN AI EDUCATIONAL MODEL FOR EMPOWERING FASHION DESIGN IDEATION – A CASE STUDY ON BABA NYONYA HERITAGE <i>Marzie Hatuf Jalil</i>	70
20	GAMIFIED EVENT RISK MANAGEMENT: THE RISK QUEST CHALLENGE – SOLO EDITION <i>Hasan Mohamed Zakaria, Azizah Ismail, Norwani Mohd Nazari & Norhafiza Md Sharif</i>	74
21	EMBRACING AI TO EMPOWER B40 WOMEN: A DIGITAL PLATFORM FOR LEARNING, AWARENESS, AND AFFORDABLE MENSTRUAL SUPPORT <i>Sharala Subramaniam</i>	78

22	AI-ENHANCED TPACK-SOLO FRAMEWORK FOR INCLUSIVE DIGITAL LEARNING IN CHEMICAL PROCESS SIMULATION <i>Mohd Kamaruddin Abd Hamid & Norazana Ibrahim</i>	81
23	EMPOWERING CAPTURE THE FLAG (CTF) EDUCATION AND TOOLS BY INTEGRATING AND EMBEDDING AI : FINE TUNING MODELS FROM HUGGING FACE FOR SPECIFIC PURPOSES <i>Ng Zi Yuan & Vinothini Kasinathan</i>	85
24	TOWARDS AI-ENHANCED LEARNING: A COMPREHENSIVE FRAMEWORK FOR TEACHING GROUP COUNSELLING COURSES <i>Nor Mazlina Ghazali, Nur Hanis Fakhru Nizam, Dayang Azra Awang Mat & Nurfaizatul Aisyah Ab Aziz</i>	89
25	ADAPTIVE ONTOLOGY-ENABLED DATA RETRIEVAL MODEL FOR LEARNING ANALYTICS INTEGRATION ACROSS HETEROGENEOUS EDUCATIONAL PLATFORMS <i>Mohd Hafizan Musa, Sazilah Salam, Mohd. Adili Norasikin & Muhammad Syahmie Shabarudin</i>	91
26	INTEGRATING AI INTO THE C.A.R.E. MODEL: TOWARDS TRANSFORMATIVE AND INCLUSIVE LEARNING <i>Khairun Nisa Khairuddin & Hafizah Abdul Rahim</i>	95
27	INTERACTIVE AI-POWERED MANDARIN PRONUNCIATION PRACTICE TOOL FOR MICRO-CREDENTIAL LEARNING <i>Sazilah Salam, Rashidah Lip, Cheong Kar Mee, Siti Nurul Mahfuzah Mohamad, Tan Poh Ee & Mohd. Hafizan Musa</i>	99
28	GAMIFIED MICRO-CREDENTIAL (G-MC) FRAMEWORK FOR ENHANCING LEARNER ENGAGEMENT AND COMPLETION <i>Azizul Mohd Yusoff, Sazilah Salam, Siti Nurul Mahfuzah Mohamad & Mohd Khalid Mokhtar</i>	103
29	HARNESSING AI FOR SCAFFOLDING AND PEER MENTORSHIP IN ACCOUNTING EDUCATION: THE STEP-IN MODEL <i>Shafawaty Mohamad Shabri & Siti Nor Junita Mohd Radzi</i>	107
30	TRANSFORMING WORK-BASED LEARNING THROUGH FLEXIBLE E-LEARNING PLATFORMS <i>Ahmad Nabil Mohd Khalil, Tan Chye Lih & Muhammad Zaki bin Abdul Rahim</i>	111
31	ISLAMIC FINANCIAL PLANNING (IFP) E-LEARNING PLATFORM <i>Mohd Faizuddin Muhammad Zuki, Muhammad Arif Fadilah Ishak, Mohd Zaki Shahabuddin & Muhammad Hafiz Hassan</i>	114
32	LEARN HAEMATOLOGY: AI-POWERED VIRTUAL PLATFORM FOR INCLUSIVE AND ENGAGING HAEMATOLOGY EDUCATION <i>Sumaiyah Adzhar, Mohammad Hudzaifah Nordin, Adibah Daud, Razan Hayati Zulkeflee, Kamariah Abdul Jalil, Syamihah Mardhiah A. Razak, Azzahra Azhar & Sarah Abdul Halim</i>	118

33	COMBINING STRUCTURAL THEORY, HANDS-ON PRACTICE, AND AI TOOLS FOR FUTURE-READY ENGINEERING EDUCATION <i>Nik Zainab Nik Azizan & Shamilah Anudai@Anuar</i>	121
34	ENHANCING UNDERSTANDING OF SUSTAINABLE MANUFACTURING CONCEPTS THROUGH AI-ASSISTED VISUAL-BASED ALTERNATIVE ASSESSMENT <i>Norshah Aizat Shuaib</i>	125
35	MAKE A DIFFERENCE ENTERPRISE (MADE): CATALYZING AI-DRIVEN DESIGN THINKING IN STUDENT LEARNING <i>Manee Sangaran Diagarajan, Chockalingam Aravind Vaithilingam & Sim Yee Wai</i>	129
36	GUIARXEL: INTEGRATED CLASSICAL GUITAR METHOD FOR ACCELERATED BEGINNER MASTERY <i>Herry Rizal Djahwasi, Salman Alfarisi, Muchammad Bayu Tejo Sampurno, Abdul Rahman Safian & Zaharul Lailiddin Saidon</i>	133
37	NEWS FLASH: THE SIMULATED NEWSROOMS FOR 21ST-CENTURY LANGUAGE LEARNING <i>Noraisah Nurul Fatwa Mohd Razali, Nur Syafawati Sabuan, Abdul Jalil Abdul Rahim, Nur Anisnabila Dianah & Umi Kalsom Masrom</i>	137
38	HIPOP (HYBRID POPUP CARDS): AN IMMERSIVE HYBRID LEARNING EXPERIENCE <i>Muchammad Bayu Tejo Sampurno, Abdul Rahman Safian, Herry Rizal Djahwasi, Salman Alfarisi, Muhammad Fazli Taib Saearani, Tri Cahyo Kusumandyoko, Condro Wiratmoko, & Muh Ariffudin Islam</i>	141
39	INTEGRATING GENERATIVE AI INTO SQL LEARNING: A USABILITY STUDY OF A PROMPT-BASED WEB TUTOR <i>Norshadila Ahmad Badela & Anton Satria Prabuwo</i>	145
40	AI STUDYGURU: QUIZ GENERATION AND AUTOMATION POWERED BY AI <i>Mohammad Azmi Bin Mohd Jahil, Halizah Basiron, Ngo Hea Choon & Fitrah Rumaisa</i>	149
41	AI-ENHANCED BOOK-END DIVISION APPROACH FOR TEACHING DIGITAL ELECTRONICS USING DEBUDDY AND DEWBOARD© <i>Nurul Wahidah Arshad, Nurulfadzillah Hasan, Faradila Naim, Norazian Subari & Norasyikin Fadilah</i>	153
42	AI-POWERED TEXT-BASED SIMULATION FOR TRANSFORMATIVE AND INCLUSIVE LEARNING <i>Hafizan Mohamad Naim</i>	157
43	DEEPBEEP: AN AI-DRIVEN STUDENT ATTENTION DETECTION TOOL USING ELECTROENCEPHALOGRAM DATA <i>Eng Lye Lim, Wee Jing Tee, Zixu Cheah, Wei Sheng Chan, Pui Shyn See, Jie Yu Tan & Kai Le Wong</i>	161

44	<p>AGILE MINDS, FLEXIBLE PATHS: REIMAGINING HRM EDUCATION <i>Jen Ling Gan & Li Liu</i></p>	165
45	<p>ENHANCING ADOPTION AND MONITORING OF BLENDED LEARNING PRACTICES AT UNIVERSITI MALAYSIA PERLIS THROUGH THE STUDENT LEARNING TIME CALCULATOR AND BLENDED LEARNING DASHBOARD <i>Mohd Hanafi Mat Som, Siti Khadijah Za'aba, Mohd Azrik Roslan, Muhammad Juhairi Aziz Safar, Azian Azamimi Abdullah & Nur Farahiyah Mohammad</i></p>	169
46	<p>AI-ENHANCED PEKA-PIC: INTEGRATING ARTIFICIAL INTELLIGENCE FOR PLASTIC IDENTIFICATION AND INCLUSIVE EXPERIENTIAL LEARNING <i>Siti Salmi Samsudin & Syarifah Nuraqmar Syed Mahamud</i></p>	173
47	<p>ACHIEVING AN OPTIMAL BALANCE: THE ROLE OF ARTIFICIAL INTELLIGENCE TUTORS IN FACILITATING PERSONALIZED LEARNING <i>Chan Siaw Leng, Sharon Ong Yong Yee, Tan Toh Hii & Fadzilah Yusof</i></p>	177
48	<p>PREDICTIVE ANALYTICS VIA MOODLE LOGS AND EDUCATIONAL DATA MINING STRATEGIES <i>Husna Sarirah Husin, Suriana Ismail, Afizan Azman & Norhidayah Hamzah</i></p>	180
49	<p><i>EARLY AI EDUCATION INVENTION: BRIDGING THE GAP OF AI LITERACY AT THE SECONDARY SCHOOL LEVEL IN MALAYSIA</i> <i>Serena Sim Shing Yin, Lau Bee Theng, Fakir M Amirul Islam & Joel Than Chia Ming</i></p>	183
50	<p><i>CASEQUEST: AN ARTIFICIAL INTELLIGENCE-ENHANCED WEB PLATFORM FOR INCLUSIVE AND ENGAGING PATHOLOGY LEARNING</i> <i>Azzahra Azhar, Liyana Hazwani Mohd Adnan, Nurul Nadhihah Adam, Siti Nadirah Ab Rahim, Ahmad Faris Amir Mohd Nasir, Sineesh A/L Nadaraja, Sharifah Damia Hazirah Syed Abu Bakar, Abdul Rahim Rafliz Khan, Shalini A/P Manimaran, Aiman Haiqal Rosli & Nurhanis Irdina Mohd Suhaizal</i></p>	187
51	<p>PILOTING AI TUTORING IN HIGHER EDUCATION: TRIALS AND ERRORS WITH FIRST-YEAR UNDERGRADUATE ENGINEERING MATHEMATICS <i>Ming Ha Lee, Hui Woon Sim, Chiu Mei Lo, Serena Shing Yin Sim & Ting Yee Hu</i></p>	190
52	<p>HARMONIZING HIGHER MATHEMATICS: AN AI-POWERED MELODIC APPROACH TO CALCULUS EDUCATION <i>Eng Hui Ng & Theresa Chiew Gim Ean</i></p>	194

53	<p>TRANSFORMING FOOD SCIENCE LEARNING WITH SPOON-AI (STUDENT-CENTERED PEDAGOGY WITH OMNIPRESENT ONLINE NURTURING) MODEL <i>Sze Ying LEONG, Siok Koon YEO, Sook Wah CHAN, Lye Yee CHEW & Eng Tong PHUAH</i></p>	198
54	<p>SENAM HARMONI: AN INNOVATIVE MOVEMENT PROGRAM BRIDGING CULTURAL HERITAGE AND PHYSICAL FITNESS FOR PRESCHOOL CHILDREN <i>Muhammad Fazli Taib Saearani, Abdul Hamid Chan & Hafzan Zannie Hamza</i></p>	202
55	<p>INTEGRATING GAMIFICATION AND AI FOR ACTIVE LEARNING IN ELECTRICITY: CIRCUITOUS <i>Siti Maisarah Aziz, Nurulhuda Mohammad Yusoff, Siti Noor Syuhada Mohd @ Muhammad Amin</i></p>	205
56	<p>METAVEVERSE APPLICATIONS AND TECHNICS FOR REAL-TIME INTERACTIVE EXPERIENCES (MATRIX) - DEVELOPING FUTURE-READY COMPETENCIES FOR VIRTUAL DESIGN AND CONSTRUCTION <i>Xia Sheng Lee, Tamil Salvi Mari, John Hii Ing Kieng, Faisal Athar Mohd Fadzil & Nurlaili Mohd Azizi</i></p>	209
57	<p>ARGUESSAY EVALUATOR: AUTOMATING ARGUMENTATIVE WRITING ASSESSMENT THROUGH CUSTOM GPT INNOVATION <i>Nik Ahmad Farhan Nik Azim, Hasnah Ab. Kadir, Suhaida Omar & Liyanan Ahmad Afip</i></p>	213
58	<p>VIRTUAL SLIDES, REAL LEARNING: ENHANCING VETERINARY PATHOLOGY EDUCATION THROUGH THE USE OF DIGITAL SLIDES <i>Fathin Faahimaah binti Abdul Hami, Muhammad Ali Imran bin Mohamed Kamil, AbuBakar Danmaigoro, Suhaimi Bin Omar, Muhamad Faiz bin Juha & Siti Rokiah Binti Awang</i></p>	217
59	<p>SCOREEDGE: A GPT-TRANSFORMER POWERED AI-BASED ASSESSMENT CHECKER <i>Nooraziah Ahmad, Siti Salina Saidin & Mohd Yusri Mohd Naser</i></p>	221
60	<p>MICROMON: GAMIFIED MICROBIOLOGY REVISION THROUGH INTERACTIVE ROLE-PLAYING <i>Salwani Ismail, Kamariah Abdul Jalil, Sofwal Widad Suhaimee, Mohamad Syarif Akmal Ibrahim, Muhammad Firdaus Mohd Hasan, Muhammad Irfan Sukri, Muhammad Hafeezuddin Hussin & Muhamad Danish Hilman Abdul Aziz</i></p>	225
61	<p>SMART MINDS, SUSTAINABLE MEALS (SMSM): STUDENT-CENTERED, AI-DRIVEN LEARNING AND TRANSDISCIPLINARY EVOLUTION <i>Sook Wah Chan, Affezah Ali, Aqilah Yaacob & Yen Mee Leow</i></p>	229

62	TRAUMA BUDDY: REVOLUTIONIZING TRAUMA LIFE SUPPORT MALAYSIA EDUCATION THROUGH INCLUSIVE ARTIFICIAL INTELLIGENCE LEARNING <i>Wan Muhamad Farid Firdaus Wan Anuar, Ahmad Hafiz Alias, Nur Afuza Mahazir, Muhammad Adlishah Akhmal Razali, Muhammad Aqil Akhmal Mohd Rohemi, Nurul Izzati Nazri, Nurul Hidayah Norjilan & Nur Eliyana Faqihah Azmi</i>	233
63	REKA.IO: EMPOWERING INDUSTRIAL DESIGN STUDENTS' IDEATION WITH GUIDED AI <i>Shahrul Anuwar bin Mohamed Yusof, Addy Putra bin Md Zulkifli, Amirul Fahmi bin Razali, Sharih Ahmad bin Mohamad, Nor Ziratul Aqma binti Norzaman, Syarilla Iryani binti Ahmad Saany, Syadiah Nor binti Wan Shamsuddin & Khairun Nisa binti Mustaffa Halabi</i>	237
64	FOOD CROP PORTFOLIO: STUDENT ACTIVE LEARNING THROUGH 3D MODEL <i>Elisa Azura Azman, Roslan Ismail, Nor Elliza Tajidin, Sarah Baharudin & Mashitah Jusoh</i>	242
65	BLENDING RESEARCH, ARTIFICIAL INTELLIGENCE, & NEUROSCIENCE: ADVANCING INNOVATION DESIGN (BRAIN-AID) <i>Ross Azura Zahit</i>	246
66	CULTIVATING AI-READY ENGINEERS: A DIGITAL LEARNING ECOSYSTEM INTEGRATING BLOOM'S AND SOLO TAXONOMIES FOR INCLUSIVE PROCESS DESIGN EDUCATION <i>Nurhazwani Yusoff Azudin</i>	250
67	A CONCEPTUAL FRAMEWORK FOR INCLUSIVE LEARNING IN CIRCUIT THEORY I USING AI AND DIGITAL SIMULATIONS <i>Dyg Norkhairunnisa Abang Zaidel, Mohd Ridhuan Mohd Sharip & Dayang Azra Awang Mat</i>	254
68	FROM VOICES TO VALUES: ENHANCING ASSESSMENT USING ARTIFICIAL INTELLIGENCE TRANSCRIPTION <i>Makhfudzah Mokhtar, Ramiza Darmi, Ahmad Salahuddin Mohd Harithuddin, Askiah Jamaluddin & Siti Mariam Shafie</i>	258
69	IDIOM GAME HUB: A COMPLETE GAMIFIED IDIOM LEARNING PACKAGE FOR ESL LEARNERS <i>Mohammad Affiq Kamarul Azlan, Noraini Hj Zaini, Wan Yusoff Wan Shaharuddin, Nur Syahirah Mohd Nawawi & Noor Syamimie Mohd Nawawi</i>	262
70	<i>EduVerse: AN IMMERSIVE METAVERSE INNOVATION FOR AI EDUCATION</i> <i>Muhammad Aliff Firdaus Saffi'ai, Amirul Haqiem Zulkifli & Anis Farihan Mat Raffei</i>	265

71	EMBRACING AI FOR IMMERSIVE LEARNING AND INCLUSIVE EDUCATION WITH ENGAGEVR <i>Thivilojana Perinpasingam, Tan Shin Yen, Faisal Mohammad Athar, John Hii Ing Kieng & Aleksandra Kutsenko</i>	269
72	FROM CRAFT TO CODE: AI-DRIVEN INNOVATION IN CONSTRUCTION LEARNING <i>Adila Zakaria, Fadhlina Ahmad @ Taufik, Muhammad Faizal Abdul Rani, Mohammad Ezzad Abu Bakar, Iziq Eafifi Ismail & Tengku Intan Suraya Tengku Aziz</i>	273
73	AI-DRIVEN TPACK FOR INCLUSIVE BLENDED LEARNING: TRANSFORMING APPLIED THERMODYNAMICS EDUCATION <i>Yan Yan Farm</i>	277
74	GLOBAL VOICES: AI PERSONA LAB <i>Galvin Kuan Sian Lee</i>	281
75	VETVERSE: EXPLORING VIRTUAL REALITY APPLICATIONS IN VETERINARY MEDICINE-ENHANCING EDUCATION, DIAGNOSIS, AND TREATMENT <i>Intan Noor Aina Kamaruzaman, Nur Shahirah Sofea binti Azmi, Mohammed Dauda Goni & Azmi Mohd Yusof</i>	285
76	MYNX: MOVES – AN AI-DRIVEN E-LEARNING ECOSYSTEM FOR THE REVIVAL OF MALAYSIAN TRADITIONAL SPORTS AND GAMES <i>Addy Putra bin Md Zulkifli, Shahrul Anuwar bin Mohamed Yusof, Amirul Fahmi bin Razali, Sharih Ahmad bin Mohamad, Nor Ziratul Aqma binti Norzaman & Engku Aiesyah Amirah Binti Engku Md Azmi</i>	289
77	FOSTERING STUDENT INTEREST AND ENGAGEMENT THROUGH EDU BOX SMARTLEARN IN ONLINE HIGHER EDUCATION <i>Nik Nur Azizah Nik Halman, Wan Nor Jazmina Wan Ariffin, Wan Nor Azilawanie Tun Ismail, Mohamad Hafis Amat Simin & Roslieza Rosli</i>	293
78	S2P (SLIDE TO PODCAST): ENHANCING STUDENT ENGAGEMENT THROUGH PODCASTS <i>Norhuda Salleh, Soon Fook Fong, Fiffy Hanisdah Saikim & Mohamad Syahrul Nizam</i>	297
79	AI APPS FOR QURAN MODULE LEARNING IN PRIMARY SCHOOL <i>Hafiz bin Hamzah & Noor Hafizah binti Dumi</i>	301
80	BEYOND THE BLUEPRINT: XRI IN ACTION AT TAYLOR'S UNIVERSITY STEM PROGRAMMES <i>Kenn Jhun Kam, Tze Shwan Lim, Faisal Athar bin Mohd Fadzil & Kennedy Tiong Kwong Shin</i>	304

81	ISOMAR: MODUL REALITI TERIMBUH UNTUK TRANSFORMASI ISOMETRI <i>Noorul Shuhadah Osman, Ahmad Fauzi Mohd Ayub, Jazihan Mahat & Nurul Nadwa Zulkifli</i>	309
82	CHEMISTREE: A NEW HOLISTIC APPROACH IN LEARNING CHEMISTRY <i>Noor Syuhadah Subki & Saiful Akramin Mhd Nor</i>	313
83	TEACHING IN THE METAVERSE: AN AI-POWERED LOOK INTO VIRTUAL REALITY AMONG UNIVERSITY STUDENTS <i>Umi Kalsom Kassim, Jayasutha Matiah & Cliffton Baba Nyepit</i>	316
84	INSIDE SPECTRUM VR: ENHANCING EDUCATORS' EMPATHY AND UNDERSTANDING OF AUTISM STUDENTS THROUGH IMMERSIVE SIMULATION <i>Goh Wei Wei, Mohammad Hadi Ahmadi Milaghardan, Ji Tian Tong, Charles Sharma Naidu, Chong Pei Pei & Sumathi Balakrishnan</i>	320
85	<i>INTEGRASI BUDAYA POP DAN TEKNOLOGI: PENGGUNAAN MEME DALAM MENINGKATKAN PERBENDAHARAAN KATA BAHASA JEPUN</i> <i>Muhammad Azri Hafifi Bin Mohd Zaludin, Tengku Iffah Biti Tuan Yazid & Kasma Binti Mohd Hayas</i>	324
86	BRIDGING PLAY AND AI THROUGH A HYBRID BOARD GAME FOR ADAPTIVE FORMATIVE ASSESSMENT IN PROGRAMMING EDUCATION <i>Mohamad Firdaus Che Abdul Rani, Nor Hafizah Adnan, Ahmad Zamri Mansor, Melor Md Yunus</i>	328
87	INTEGRATING ARTIFICIAL INTELLIGENCE INTO LEARNING MANAGEMENT SYSTEMS FOR SMARTER COURSE SUPPORT <i>Ts. Mohd Hafriz Nural Azhan, Nur Azira Jusoh, Prof. Ts. Dr. Salisa Abdul Rahman, Prof. Madya ChM. Dr. Maisara Abdul Kadir, Prof. Madya Dr. Siti Nor Khadijah Addis, Muhammad Ismail Afandi Muda, Yuzawani Yusoff, Khairul Bukhari Abd Hamid & Abdul Hadi Ismail</i>	332
88	<i>AI-POWERED SUPPORT SYSTEMS: CONVERSATIONAL AI FOR INCLUSIVE AND INTELLIGENT e-LEARNING</i> <i>Nur Azira Jusoh, Ts. Mohd Hafriz Nural Azhan, Prof. Madya ChM. Dr. Maisara Abdul Kadir, Prof. Madya Dr. Siti Nor Khadijah Addis, Muhammad Ismail Afandi Muda, Yuzawani Yusoff, Khairul Bukhari Abd Hamid & Abdul Hadi Ismail</i>	336
89	BLOOMWISE: AI-ASSISTED GAMIFIED TOOL FOR TAXONOMY-BASED ASSESSMENT DESIGN <i>Siti Sabariah Abas, Mumtazimah Muhammad, Maizan Mat Amin, Nazirah Abd Hamid & Wan Malini Wan Isa</i>	340

90	BEYOND THE BEDSIDE - AI-ENABLED VIRTUAL PATIENT SIMULATION FOR CLINICAL HISTORY TAKING <i>Ahmad Hathim Ahmad Azman & Noor Akmal Shareela Ismail</i>	343
91	<i>GamiKelas 2.0: DIGITALLY IMMERSIVE BLENDED CLASSROOM LEARNING THROUGH GAMIFICATION, METAVERSE, GEN AI AND ALTERNATIVE ASSESSMENT</i> <i>Abd Hadi Abd Razak, Nur Fadziana Faisal Mohamed, Syamsyul Anuar Che Mey @ Ismail, Siti Syamsul Nurin Mohmad Yazam & Marzura Ibrahim</i>	347
92	LEVERAGING AI-ENHANCED VISUAL LEARNING AND ACTIVITIES IN TEACHING BIOMEDICAL POLYMERS <i>Syarifah Nuraqmar Syed Mahamud & Siti Salmi Samsudin</i>	351
93	SPATIAL NARRATIVES IN MINIATURE: AUTHENTIC ASSESSMENT THROUGH 3D CONCEPT MODELLING <i>Dr Siti Nuratirah Che Mohd Nasir, Ts Salmiah Aziz & Mohammad Hafiz Hisyam Mohd Hashim</i>	355
94	INNOVA BARI MELAYU <i>Mardiana Ismail & Lena Farida Hussain Chin</i>	358
95	JADUAL HAIDKU: INTEGRATING AI FOR MENSTRUAL HEALTH AWARENESS, FIQH LITERACY, AND INCLUSIVE EDUCATION <i>Mashanum Osman, Maslita Abd Aziz, Norun Najjah Ahmat, Chuah Ming Xua, Sazalinsyah Razali, Nurul Akmar Emran & Muhammad Faris Abd Ghafar</i>	362
96	INSIGNED: SPEECH-TO-SIGN LANGUAGE USING AI POWERED COMPANION FOR DEAF COMMUNITIES – TEACHING BEYOND BARRIERS <i>Murugan Thangiah, Chockalingam Aravind Vaithilingam, Thimmareddy Sharat Chandra Reddy, Gajjala Hrithvik Reddy & Muhammad Khujaev</i>	366
97	THE HUMAN BRAIN <i>Elissa Nadia binti Madi, Zahrahtul Amani binti Zakaria, Azilawati binti Rozaimie, Aainaa Sumayya binti Azmi, Nur Amalin Aisya binti Azadil Akman & Nur Alia Farhana binti Mustafa</i>	370
98	AISTATSBOX: PORTABLE STATISTICAL APP WITH GENERATIVE AI ASSISTANCE FOR TEACHING AND LEARNING STATISTICS <i>Muhammad Jaffri Mohd Nasir, Mohammed Dauda Goni & Nurzulaikha Mahd Ab. Lah</i>	374
99	<i>MyLegS MOBILE APP: THE SMART WAY TO LEARN MALAYSIAN LEGAL SYSTEM</i> <i>Shariffah Nuridah Aishah binti Syed Nong Mohamad, Zuhairah Ariff binti Abd Ghadas, Hartinie binti Abd Aziz, Ilylyana binti Che Rosli & Wan Mohd Amir Fazamin bin Wan Hamzah</i>	378

100	LEVERAGING THE USE AI FOR ASSESSMENT IN MALAYSIAN UNIVERSITIES <i>Nurzatil Sharleeza Mat Jalaluddin & Abdullah Al-Hadi Ahmad Fuaad</i>	382
101	KIT FOREST BOX WITH NFC INTEGRATION: ENHANCING STUDENT LEARNING EXPERIENCE FOREST RESOURCE ECONOMICS <i>Nur Fadzlunnisaa' Wakimin, Affendy Hassan, Go Wen Ze, Thamer A. Thabet & Aida Nabihah M. Khattab</i>	386
102	SPRIDIVE: STUDENT PRESENTATION IN DIGITAL INNOVATION FOR VETERINARY EDUCATION <i>Mohammad Sabri Abdul Rahman, Faez Jesse Firdaus Abdullah, Ruhil Hayati Hamdan, Tan Li Peng, Mohd Farhan Hanif Reduan, Intan Noor Aina Kamaruzaman, Basripuzi Nurul Hayyan Hassan Basri & Goh Soon Heng</i>	390
103	CYBERSECURE VR: BEHAVIOR CLONING-BASED IMMERSIVE MICROCREDENTIALS FOR THREAT SIMULATION AND RESPONSE <i>Mohd Faizal Ab Razak^{1*}, Salwana Mohamad @ Asmara, Nor Saradatul Akmar Zulkifli¹, Danakorn Nincarean & Amirul Aidil Hasnul Azan</i>	394
104	THE ROLE OF QUIZ GAMES IN IMPROVING STUDENT ENGAGEMENT AND UNDERSTANDING OF RETAIL TECHNOLOGY <i>Norhafifah Binti Samsudin, Aimi Nadia Binti Ibrahim@Zakaria, Nurul Hasliana Binti Hamsani, Nur Syakirah Binti Ahmad & Muhammad Firdaus Bin Zakaria</i>	398
105	WELL (WELLNESS ENHANCED LIFELONG LEARNING) NEXUS: EMPOWERING WELLNESS INNOVATION EDUCATION THROUGH HYBRID DIGITAL-PHYSICAL LEARNING <i>Ahmad Faezi Ab. Rashid, Norsyamliana Che Abdul Rahim, Norsuriani Samsudin, Nor Dalila Marican, Nurul Hafizah Mohd Yasin, Lee Wan Zhen, Fakhitah Ridzuan & Nur Ilyana Amiiraa Nordin</i>	402
106	E-BOT QUAKE: INTERACTIVE, EDUCATIONAL, LIFE-SAVING <i>Soon Singh Bikar Singh, Zulfhikar Rabe, Muralindran Mariappan, Sabariah Sharif, Balan Rathnakhrisnan & Rosy Talin</i>	406
107	EMPOWERING BOLD SPEAKERS: A HYFLEX PUBLIC SPEAKING PEDAGOGY INNOVATION <i>Deborah Chris Raj & M.R Naveen Raman</i>	410
108	LEVERAGING ARTIFICIAL INTELLIGENCE TO CREATE ANIMATED LECTURE VIDEOS: A STUDY ON STUDENTS' KNOWLEDGE AND FUNCTIONAL SKILLS OF AI USAGE <i>Norsuriani Samsudin, Nurul Hafizah Mohd Yasin, Lee Wan Zhen, Ahmad Faezi Ab. Rashid, Mazne Ibrahim, Myzatul Aini Ma'asor @ Mansor & Mohd Hafzal Abdul Halim</i>	414

109	EMPOWERING CHEMISTRY LEARNING THROUGH HUMAN-AI COLLABORATION: INTEGRATING AI AGENTS WITH 5E PEDAGOGICAL INNOVATION <i>Wong Yau Hsiung</i>	417
110	AI-DRIVEN IMMERSIVE LEARNING WITH STUDENT-DESIGNED BIOCHEMISTRY GAMES <i>Wan Suriyani Wan-Ibrahim, Nadiah Ameram, Nur Sakinah Mohamed Tamat & Azfi Zaidi Mohammad Sofi</i>	421
111	INTEGRASI AI BAGI PEMBELAJARAN INOVATIF: PENDEKATAN BERPUSATKAN PELAJAR DALAM KURSUS BIMBINGAN DAN KAUNSELING <i>Nur Azmina Paslan, Mastura Mahfar, Fauziah Zaiden & Jamaludin Ramli</i>	425
112	INNOVATIVE MULTIPLAYER GAME-BASED FRAMEWORK FOR INCLUSIVE LEARNING AND CRITICAL THINKING <i>Zalifah Mansor & Heru Astikasari Setya Murti</i>	429
113	VR RESPONSE TVET: A MULTIMODAL USER EXPERIENCE MODEL FOR INCLUSIVE VOCATIONAL TRAINING OF ASD LEARNERS <i>Nur Aleesya Mohd Asri, Normala Rahim, Norsuhaily Abu Bakar, Wan Rizhan, Ismahafezi Ismail, Nur Saadah Shapri & Sarah Farhana Juhari</i>	433
114	ENTOMOLOGY REIMAGINED: TECH-ENHANCED LEARNING FOR SMART INSECT EDUCATION <i>Norashikin Fauzi, Nuramirah Mat Zain, Nur Qistina Abd Aziz, Musfiroh Jani & Noor Syuhadah Subki</i>	437
115	INSECT RACE 2.0: ENRICHING LEARNING EXPERIENCE USING A GAME-BASED LEARNING APPROACH INTEGRATED WITH ARTIFICIAL INTELLIGENCE TOOLS <i>Siti Nurlydia Sazali, Tan Wei Lim, Nurfarida Anum Zainaddin & Ratnawati Hazali</i>	440
116	ENHANCING DIGITAL STORYTELLING IN HIGHER EDUCATION: INTEGRATING THE STORYSCAPE INTERACTIVE MODULE WITH WHATSAPP COMMUNITY <i>Nor Jijidiana Azmi, Wan Mohd Fadzli bin W. Samsudin, Ahmad Helmie bin Ahmad & Ahmad Syarafuddin bin Che Azih</i>	444
117	ENTOMANIA <i>Nurfarida Anum Zainaddin, Tan Wei Lim, Siti Nurlydia Sazali & Ratnawati Hazali</i>	449
118	REIMAGINING PC ASSEMBLY LEARNING IN TECHNICAL EDUCATION WITH ARTIFICIAL INTELLIGENCE (AI) AND IMMERSIVE VIRTUAL REALITY(VR) APPROACH <i>Nor Saradatul Akmar Zulkifli, Danakorn Nincarean Eh Phon Muhammad Harith Zulhairi, Iyad Hakimi Syukur, Muhammad Anazhakimi Mohammad & Muhammad Izzuddin Mohmed Rejab</i>	453

119	BENICE (BELAJAR DAN LATIH SEHINGGA CEKAP EMOSI): AN AI-POWERED E-LEARNING PLATFORM FOR INCLUSIVE DIGITAL MENTAL HEALTH EDUCATION IN SELF-HARM PREVENTION <i>Tengku Mohd Saifuddin Tengku Kamarul Bahri, Khairi Che Mat, Muhammad Syaqqim Hafifi Abdul Rahman, Hanisah Mohd Noor, Muna Hamiza Asiff, Mohd Salami Ibrahim & Owi Thai Loon</i>	457
120	SMARTMUAMALATAI: COMIC-BASED ISLAMIC FINANCE EDUCATION <i>Nadhirah Nordin, Raja Madihah Raja Alias, Hannan Fatini Md Reshad & Nur Amani Aisyah Samsuddin</i>	460
121	ETHICWISE INNOVATION IN SOCIAL AND ENVIRONMENTAL ASPECTS OF TEACHING AND LEARNING <i>Hezzrin Mohd Pauzi</i>	464
122	PENGGUNAAN PENJANA KECERDASAN BUATAN DALAM PEMBELAJARAN BERASASKAN PROJEK BERORIENTASIKAN MASALAH INDUSTRI <i>Aryati Bakri & Rozilawati Binti Dollah @ Md. Zain</i>	468
123	CLAIMOPOLY: AN INTERACTIVE GAMIFIED TOOL FOR LEARNING NUTRIENT COMPARATIVE CLAIMS IN FOOD LABELLING <i>Wan Anwar Fahmi Wan Mohamad, Muhammad Alif Aiman Zamzuri, Nur Athirah Nisa Mohd Sukor, Nur Aqilah Najwa Mohd Khairuddin, Nur Asyiqin Yaccob, Nur Camilla Nisa Asyran Raoef & Nur Atiyah Hana Azizi</i>	472
124	TRUST: A USER-CENTRED 3D ANIMATION FOR RAISING CHILD SEXUAL AWARENESS <i>Azlin Sharina Abdul Latef, Muhammad Muaz Syafiee Kamal, Nuzul Haqimi Muhammad, Hana Yazmeen Hapiz & Tenh Hock Kuan</i>	476
125	eBCSi©: VETERINARY AI FOR FOOD SECURITY <i>Mohd Faizal Ghazali, Noor Syaheera Ibrahim, Dayang Ayu Syamilia Che Roi, Ong Yew Chuan, Siti Mariam Zainal Ariffin, Najmi Wahidi Ab Wahab & Noor Fazzle Mohd Zawawi</i>	480
126	NEURON: A DIGITAL LEARNING MODULE FOR ENHANCING STUDENT ACHIEVEMENT IN GENETIC INHERITANCE <i>Hanna Mohd Hussaini, Salmiza Saleh, Shahabuddin Hashim, Nurul 'Ain Abdul Halim, Haizal Mohd Hussaini & Mohd Affandi Shafie</i>	484
127	AI-ENHANCED CYBER THREAT ANALYSIS MODULE FOR SOC-BASED LEARNING <i>Salasiah Sulaiman, Julia Juremi, Intan Farahana Kamsin & Mohamad Firdaus Che Abdul Rani</i>	489
128	<i>EnviroLawFun: FROM STUDENTS TO COMMUNITY</i> <i>Wan Rohila Ganti bt Wan Abdul Ghapar</i>	493

129	SMARTFLEX PEERS: INTELLIGENT AND FLEXIBLE ENTREPRENEURSHIP LEARNING WITH AI <i>Nur Thara Atikah binti Zainal</i>	497
130	TRANSFORMATIVE IOT TEACHING: THE IMPACT OF AI TOOLS <i>Sumathi Balakrishnan, Goh Wei Wei, Siva Raja Sindiramutty & Tee Wee Jing & Lim Eng Lye</i>	501
131	NUTRI-XR: IMMERSIVE VR/AR NUTRITION KITS TO PREVENT OBESITY <i>Norsymlina Che Abdul Rahim, Amzari Abu Bakar, Ahmad Faezi Ab. Rashid, Nor Dalila Marican & Siti Fatimah Binti Abdul Razak</i>	505
132	EDUSkillUP: IMMERSIVE AND INTERACTIVE DIGITAL LEARNING MODULE FOR FORM 4 ADDITIONAL MATHEMATICS USING GEOGEBRA AND AUGMENTED REALITY <i>Hamizah Mohd Safuan, Nik Adelyn Nik Rosdi, Norzidah Mad Ainal, Che Samihah Che Dalim, Khuneswari Gopal Pillay & Noorzehan Fazahiyah Md Shab</i>	509
133	LESSONWEAVER: AI-ENHANCED ADAPTIVE LEARNING PLATFORM <i>Nuzul Haqimi Muhammad & Azlin Sharina Abdul Latef</i>	513
134	METAKELAS: REVOLUTIONISING ONLINE CLASSES THROUGH METAVERSE AND THIRD PERSON PERSPECTIVE IMMERSION TO ENHANCE LEARNING OUTCOMES EFFECTIVENESS <i>Nur Fadziana Faisal Mohamed, Abdul Hadi Abdul Razak, Syamsyul Anuar Ismail, Marzura Ibrahim & Siti Syamsul Nurin Mohmad Yazam</i>	517
135	POWERASSESSMENT AS AN ASSESSMENT ANALYTICS FOR BUILDING QUALITY QUESTION BANKS: CAN BI DASHBOARDS TRANSFORM ASSESSMENT AND LEARNING? <i>Hassan Basri Bin Mukhali, Mohd Salami Bin Ibrahim, Megat Mustaqim Bin Megat Iskandar, Siti Hawa Binti Nordin, Siti Yusrina Nadiyah Binti Jamaludin, Yasrul Izad Bin Abu Bakar & Ahmad Hafiz Bin Alias</i>	521
136	ARTIFICIAL INTELLIGENCE-ENHANCED “REEL, REFLECT, AND RISE”: A ToTLAS x SCALE APPROACH TO STUDENT-DRIVEN AQUATIC ANIMAL HEALTH LEARNING <i>Ruhil Hayati Hamdan, Tan Li Peng, Mohammad Sabri Abdul Rahman, Goh Soon Heng, AbuBakar Danmaigoro, Basripuzi Nurul Hayyan Hassan Basri, Murshidah Mohd Asri, Amirul Faiz Mohd Azmi, Luqman Abu Bakar, Mimi Armiladiana Mohamad, Dauda Goni, Nur Hidayahanum Hamid, Nora Fatin Afifah binti Mohamad, Rumaizi Shaari & Choong Siew Shean</i>	525
137	D-PenSIMA: RAISING FOOD WASTE MANAGEMENT AWARENESS THROUGH INTERACTIVE GAMEPLAY <i>Tengku Halimatun Sa’adiah T Abu Bakar, Maryana Mohamad Nor, Suhana Zakaria, Zuharlida Tuan Harith, Mohd Mahmud, Norhafizah Md Zain, Noorhazira Sidek, Muhammad Nurfaiz Abd. Kharim, Mohd Fauzie Jusoh & Mardawani Mohamad</i>	529

138	EXPERIENTIAL LEARNING INNOVATION VIA PUBLIC TIKTOK ADVOCACY <i>Hadhrami Ab Ghani & Mohd Hakimi Aiman Ibrahim</i>	533
139	LEXITUNE: FROM HANZI TO HIRAGANA—A MUSIC-DRIVEN MOBILE APP FOR NOVICE CHINESE & JAPANESE LEARNERS <i>Julia Tan Yin Yin, Fakhitah Ridzuan, Tan Tse Guan, Chua Aun Geong, Nor Alina Ismail, Yasmin See, Muhammad Azri Hafifi Mohd Zaludin, Hanim Mustafa & Fazura Zulkifle</i>	537
140	YOUTUBE AS A PLATFORM FOR SURGICAL E-LEARNING AND STEP- BY-STEP PROCEDURAL GUIDANCE BY WHITECOAT TURTLE <i>Dr Ahmad Fardi Sulaiman, Dr Hasmali Mohamad, Dr Fatin Mardhiyyah Hussin, Nurul Zarith Afisya Nurul Azhar, Nur Aishah Athirah Abdullah, Kauthar Roselan & Siti Qhairunnisa Saharudin</i>	541
141	A-MaSTer: A SELF-DIRECTED LEARNING APPLICATION TO ENHANCE STUDENTS' MORAL JUDGEMENT <i>Nurul 'Ain Abdul Halim, Shahabudin Hashim, Hanna Mohd Hussaini, Anis Humaira Mohamad Zaham & Seffetullah Kuldaz</i>	543
142	PENGATURCARAAN SCRATCH MENGGUNAKAN PENJANA KECERDASAN BUATAN <i>Farkhana Muchtar, Aryati Bakri, Mohd Kufaisal Mohd Sidik, Ahmad Fariz Ali, Ismail Fauzi Isnin & Carolyn Salimun @Jackson</i>	547
143	NOTTALONE: PROMOTING MENTAL HEALTH LITERACY AMONG UNIVERSITY STUDENTS THROUGH A GAMIFIED DIGITAL TOOLKIT <i>Siti Khadijah Zainal Badri, Nur Zahira Zulkarnain, Anshali Manoharan, Anshana Manoharan, Ahamed Miflah Hussain, Hoh Chin Chin & Raja Nadirah Raja Mohd Halim</i>	549
144	MAPPING BARRIERS AND OPPORTUNITIES: ADVANCING INCLUSIVE SERVICE DELIVERY FOR AUTISTIC CHILDREN IN KELANTAN. <i>Ruzaini Bin Ijon, Azizul Bin Ahmad, Yohan Kurniawan, Nik Ahmad Farhan Bin Azim@Nik Azim, Fairuz A'dilah Binti Rusdi, Azahah Binti Abu Hassan Sha'ari, Siti Amirah Binti Ahmad Tarmizi, Tarmiji Bin Masron & Asykal Syakinah Binti Mohd Ali</i>	553
145	IMMERSIVE CULTURAL LEARNING REIMAGINED: ENHANCING INTANGIBLE CULTURAL HERITAGE EDUCATION THROUGH WAYANG DIMENSION <i>Fara Dayana Mohd Jufry, Azrul Azizi Amirul, Mohammad Naquiddin Tajul Ariffin & Nor Masharah Husain</i>	557
146	NADI SIRAH v1 <i>Muhammad Talhah Ajmain @ Jima'ain, Muhammad Faris Faisal Ahmad Raddi, Muhammad Syazmi Musa, Abdul Basit Samat @ Darawi & Kasmaizun Enuni Mohd Sarji</i>	561

147	YOUTH-SOCIAL ENTREPRENEURSHIP READINESS ASSESSMENT TOOL <i>Nur Izzati Ab Ghani, Hawa Husna Ab Ghani, Farah Roslan, Nur Syifaa Athirah Mohd Said & Zanariah Mohd Nor</i>	565
148	AI4CULINARY: INTEGRATING GENERATIVE AI AGENTS IN EXPERIENTIAL CULINARY PORTFOLIOS FOR REFLECTIVE AND CREATIVE LEARNING <i>Salmalina Salleh, Salmaliza Salleh, Noor Azean Atan & Mohamad Izzuan Mohd Ishar</i>	569
149	CHEMISTORY EXPLORER: DISCOVERING THE ROOTS OF CHEMISTRY <i>Nur Atikah Arbain, Hidayah Rahmalan, Syahida Mohtar & Ahmad Fadzli Nizam Abdul Rahman</i>	573
150	AN AI-DRIVEN COLLABORATIVE ENGAGEMENT (CE) APPROACH FOR TEACHING AND LEARNING ENTITY-RELATIONSHIP DIAGRAM (ERD) DESIGN <i>Nor Mas Aina Md Bohari, Hidayah Rahmalan, Nur Atikah Arbain, Syahida Mohtar & Fathin Nabilla Binti Md Leza</i>	577
151	PENGUNAAN APLIKASI KAMUS USULUDDIN DAN APLIKASI MYSHAKHSIYYAH DALAM PEMBELAJARAN ILMU ISLAM <i>Mohd Hasrul Shuhari, Muhammad Rashidi Wahab, Muhammad Hafizi Rozali, Wan Mohd Amir Fazamin Wan Hamzah, Mohd Kamir Yusof, Mustafa Man & Muhammad Naufal Mohd Hasrul</i>	581
152	INNOVATIVE CAPSTONE ASSESSMENT NEXUS (ICAN): A HYBRID MODEL FOR AUTHENTIC, INDUSTRY-LINKED, AND AI-RESILIENT ASSESSMENT IN HIGHER EDUCATION <i>Sharifah Sakinah Syed Ahmad, Noor Fazilla Abd Yusof & Nur Zareen Zulkarnain</i>	584
153	AI MEETS HERITAGE: A CONCEPT PAPER OF CO-CREATING YAOZHOU KILN LEARNING IN THE DIGITAL CLASSROOM <i>Mohan Wang, Yuek Li Ker & Chee Beng Yang</i>	588
154	THE EFFECTIVENESS OF A BUSINESS MODEL BOARD GAME AS AN INNOVATIVE EXPERIENTIAL LEARNING TOOL FOR AN ENTREPRENEURSHIP COURSES <i>Mohd Guzairy Abd Ghani, Mohd Syafiq Md. Taib & Wan Muhammad Idham Wan Mahdi</i>	592
155	TRANSCENDING DIMENSIONS: REIMAGINING MOTIF LAPAN THROUGH AUGMENTED REALITY FOR CULTURAL AND EDUCATIONAL INNOVATION <i>Nurulfajar bin Abd Manap & Anis Suhaila binti Mohd Zain</i>	596

156	TVET WORMS APPLICATION: AI-POWERED LEARNING SUPPORT <i>Hadzley Abu Bakar, Mohd Basri Ali, Nur Ana Rosli, Shaiful Anwar Ismail, Siti Rahmah Shamsuri & Umi Hayati Ahmad</i>	600
157	GEO-ATTENDANCE & ENGAGEMENT ANALYTICS DASHBOARD: A LOW-CODE SAAS FRAMEWORK FOR EQUITABLE TVET ENGAGEMENT <i>Safiza Suhana Kamal Baharin, Arief Muizzuddin Khalid & Abdul Hadi Mazbah</i>	604
158	SMART FINANCE: AN AR-BASED INNOVATION FOR YOUTH ENTREPRENEURSHIP <i>Sarimah Surianshah, Salmah Topimin & Ho Chong Mun</i>	608
159	WRITERIGHT AI COACH: THE SMART, SUPPORTIVE AND ALWAYS-ON MUET WRITING COMPANION <i>Masdini Harina Ab Manan, Faharol Zubir, Belinda Marie Balraj & Najjah Salwa Abd Razak</i>	612

EDTECH: AN AI EDUCATIONAL MODEL FOR EMPOWERING FASHION DESIGN IDEATION – A CASE STUDY ON BABA NYONYA HERITAGE

Marzie Hatef Jalil¹

¹Faculty of Applied and Creative Arts, Universiti Malaysia Sarawak, Malaysia

*Corresponding author's email: hjmarzie@unimas.my

Abstract

This paper introduces the AI Technology Integrated Education Model (EdTech) aimed at empowering fashion design ideation through the fusion of cultural heritage and advanced digital learning tools. Centred on the Peranakan Elegance Garment Design Challenge, which celebrates the rich heritage of the ethnic groups in Melaka, the research addresses the need for innovative, inclusive, and globally collaborative approaches in fashion education. The objective was to promote AI-enhanced e-learning, encourage collaboration among educators and students, and highlight impactful digital innovations in higher education. The methodology employed a case study approach, combining AI-assisted creative ideation tools, a curated cultural heritage repository, and a cloud-based collaborative learning platform. A group of fashion students engaged in a structured design process involving heritage research, AI-generated mood boards, storyboards, and real-time peer and mentor feedback. Data was collected through design output analysis and student feedback, measuring the effectiveness of AI integration in enhancing creativity. Findings indicate that AI-assisted ideation accelerated the creative process, improved the quality and originality of design outcomes, and enhanced students' confidence in blending heritage motifs with contemporary fashion trends. Additionally, the cultural heritage repository supported the preservation and reinterpretation of Baba Nyonya traditions, demonstrating the potential of AI in safeguarding intangible heritage while inspiring innovative design. The study concludes that the AI technology-integrated education model is a viable and scalable solution for future-oriented fashion ideation and education. It bridges traditional craftsmanship and modern technology, supports inclusive participation, and fosters global collaboration. Beyond academia, the model holds potential for commercial applications in heritage-based product development and creative industries. This research contributes to the discourse on AI in innovative education, offering a replicable framework adaptable to various cultural and design contexts.

Keywords: Artificial Intelligence, Fashion Education, Baba Nyonya Heritage, AI-assisted Ideation, Digital Learning Innovation, Heritage-inspired Fashion Design.

BACKGROUND OF THE RESEARCH / INNOVATION / INVENTION / DESIGN

In the rapidly evolving landscape of education, integrating Artificial Intelligence (AI) into creative disciplines such as fashion design offers unprecedented opportunities for innovation, inclusivity, and global collaboration. Previous studies (Chen et al., 2019) highlighted the potential of AI to enhance creativity and contribute to sustainability. However, there is limited empirical evidence measuring how effectively tools like text-to-image generators improve designers' creative

decision-making or lead to more sustainable outcomes in costume design. As noted by Jalil et al. (2024), ethnic costume design faces a creativity gap, especially when it comes to sustainability, with many traditional practices relying on repetitive techniques. Hazan (2023) emphasizes that this lack of innovation restricts the ability to create unique designs that balance cultural heritage with contemporary aesthetics. In the fashion design process, text-to-image systems can enhance creative workflows by allowing designers to experiment with concepts and refine designs quickly before production. Hazan (2023) argues that these technologies could particularly benefit ethnic costume designers by enabling the visualization of traditional motifs in contemporary designs, thereby preserving cultural heritage while promoting innovation. Hence, the current research aims to develop an AI Technology Integrated Education Model designed to empower fashion design ideation through the fusion of cultural heritage and modern design thinking. The case study focuses on the Peranakan Elegance Garment Design Challenge in December 2024, inspired by Baba Nyonya heritage, an artistic amalgamation of Chinese and Malay influences that is rich in colour and symbolism. While fashion design education traditionally relies heavily on in-person studio practices, this study reimagines the learning experience by embedding AI tools into an e-learning platform that supports ideation, research, and visualization. Driven by the need to make creative education more accessible and responsive to global trends, the model addresses gaps in digital pedagogy for fashion design. It emphasizes how AI-assisted learning can both preserve intangible heritage and inspire modern interpretations, equipping students to work within diverse cultural contexts.

DESCRIPTION OF THE RESEARCH / INNOVATION / INVENTION / DESIGN

The AI Technology Integrated Education Model for this study is structured with AI-driven creative ideation tools, which incorporate generative AI for visual concept exploration, heritage motif transformation, and rapid prototyping of garment silhouettes, and the interactive cultural knowledge repository, which is an AI-curated database on Baba Nyonya heritage, offering visual archives, design elements, symbolism, and historical narratives as shown in Figure 1. AI natural language processing allows students to query the system for tailored cultural insights. The design challenge provided an authentic context where students from diverse backgrounds applied the model to create modern Baba Nyonya-inspired garments. Through AI-assisted mood boards, digital patternmaking, and colour harmonisation tools, students developed unique design proposals that celebrated heritage while appealing to contemporary markets.



Figure 1: Creative processes from AI-generated ideation to real garment production

SIGNIFICANCE OF THE RESEARCH / INNOVATION / INVENTION / DESIGN

This research is significant for innovation in pedagogy, where it advances the field of fashion education by merging traditional design processes with AI-enhanced ideation, enabling faster and more informed creative decision-making, and also cultural preservation through technology,

which is by embedding heritage-specific data into the AI system, the model safeguards cultural knowledge while inspiring its adaptation for modern fashion. In addition, the study aligns with the United Nations SDG 4(Quality Education) and SDG 11 (Sustainable Cities and Communities) by promoting inclusive, quality education and preserving cultural heritage through creative technology. The Educational Technology (EdTech) Model is a framework that integrates students, teachers, content, and technology into a connected learning ecosystem. It works by setting clear learning objectives and delivering content through digital platforms and tools, where students actively engage with materials and interact with teachers in both traditional and virtual environments. Technology supports this process by providing interactive resources, real-time feedback, and analytics that inform teaching methods. The cycle continues as data-driven insights refine instructional strategies, making learning more personalized, engaging, and effective over time. In short, it works as a continuous learning cycle where technology connects teachers, students, and content, while feedback and data ensure ongoing improvement.

IMPACT OF THE INNOVATION/INVENTION/DESIGN TOWARDS EDUCATION OR COMMUNITY

The model has demonstrated a measurable impact in both educational and community contexts. From the academic implications, students develop higher confidence in using AI tools for creative ideation, achieve greater efficiency in design prototyping, and improve their ability to integrate cultural narratives into fashion outcomes. Additionally, from community engagement, the project sparked renewed interest in Baba Nyonya heritage, with community members contributing stories, artefacts, and feedback to the AI database. This engagement fostered a sense of pride and cultural continuity while making the heritage more accessible to younger generations.

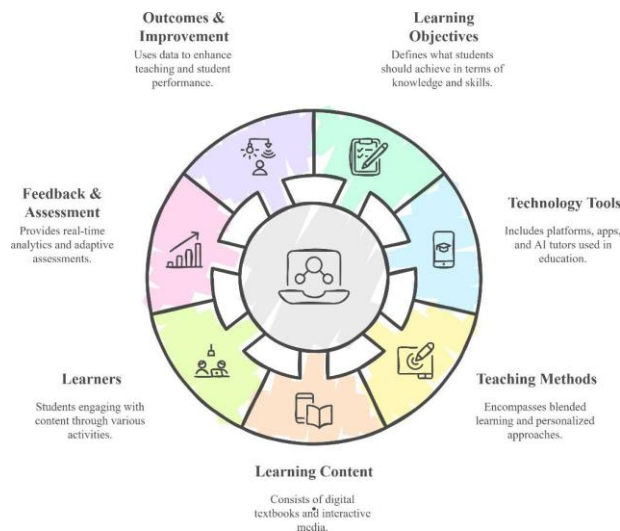


Figure 2: Educational Technology (EdTech) Model

COMMERCIALIZATION POTENTIAL

The Educational Technology (EdTech) model, as shown in Figure 2, can be adapted for other cultural design challenges, making it marketable to universities, design schools, and online learning platforms seeking to integrate AI into creative curricula. In the context of the AI Technology Integrated Education Model, EdTech serves as the backbone for delivering AI-driven creative ideation tools, an interactive cultural knowledge repository, and a collaborative e-learning framework. It enables real-time global collaboration, supports adaptive learning tailored

to students' needs, and facilitates the preservation and reinterpretation of cultural heritage within fashion design education. By combining AI capabilities with interactive digital learning environments, EdTech not only improves efficiency and creativity but also fosters inclusive participation and prepares learners for a technologically advanced future. Beyond education, the system can be licensed to fashion brands for heritage-inspired product development, cultural tourism merchandise design, and limited-edition collaborations that celebrate cultural fusion

CONCLUSION

The AI Technology Integrated Education Model represents a transformative approach to creative education, bridging tradition and technology in a way that is inclusive, collaborative, and future oriented. Through the Baba Nyonya Peranakan Elegance Garment Design Challenge, the research demonstrates how AI can act not as a replacement for human creativity but as a catalyst that expands the possibilities of cultural expression in fashion. By promoting innovative and inclusive e-learning, encouraging global educator-researcher collaboration, and recognizing impactful digital learning practices, this model offers a blueprint for the next generation of fashion design education, one where heritage and innovation coexist harmoniously. Furthermore, the research aims to illuminate the current state of sustainable costume design, emphasizing the significance of effective dissemination strategies in the context of Malaysia's rich cultural heritage. Introducing AI tools into fashion design education empowers designers to enhance their creativity while learning to adapt to cutting-edge industry practices. AI can simulate iterations of design ideas, enabling students to visualize outcomes more efficiently and experiment with various sustainable approaches. The project equips designers with practical knowledge of stable diffusion concepts in ethnic costume design, bridging the gap between theoretical sustainability and actionable creative processes. The research does not merely adopt AI as a functional tool but also explores its potential to push the boundaries of creativity. It empowers designers to imagine and implement designs that might otherwise be constrained by time, cost, or traditional limitations. By presenting state-of-the-art text-to-image technologies, this study will prioritize the needs of student designers, equipping them with the tools necessary to visualize and express stable diffusion principles. Ultimately, this project aspires to reinvent the future of costume design by establishing a dynamic connection between sustainability and creativity, fostering an inspiring business model that integrates innovative and responsible design practices. The study offers a replicable model for other regions aiming to integrate AI into culturally significant fashion design. It serves as a case study demonstrating how localized heritage can inspire global innovation while remaining sustainable and ethically sound.

Acknowledgement:

P. Ramlee Research Grant supported this paper, No. UNI/F03/PRC/86591/2025.

REFERENCES

1. Chen, L., Wang, P., Dong, H., Shi, F., Han, J., Guo, Y., Wu, C. (2019). An artificial intelligence-based data-driven approach for design ideation. *Journal of Visual Communication and Image Representation*, 61, 10-22.
2. Hazan, S. (2023). *The Dance of the Doppelgängers: AI and the cultural heritage community*. Paper presented at the Proceedings of EVA London 2023.
3. Jalil, M. H. (2022). Eco-fashion design-a review. *International Journal of Sustainable Design*, 4(3-4), 205-233.
4. Jalil, M. H., Abdullah, Q. D. L., Wong, N. R., Hoon, L. N., & Amaran, M. A. (2024). Art inheritance: Revitalizing traditional material culture motifs through innovative graphic design and artistic expression. *Journal of Graphic Engineering and Design*, 15(4), 5-17.

GAMIFIED EVENT RISK MANAGEMENT: THE RISK QUEST CHALLENGE – SOLO EDITION

Hasan Mohamed Zakaria^{1*}, Azizah Ismail¹, Norwani Mohd Nazari¹ & Norhafiza Md Sharif¹

¹School of Tourism, Hospitality and Event Management, Universiti Utara Malaysia, Malaysia

*Corresponding author's email: h.mohamed.zakaria@uum.edu.my

Abstract

This innovation introduces The Risk Quest Challenge: Solo Edition is an AI-supported, gamified e-learning platform developed using Canva Code. It aims to revolutionize the way event risk management is taught and learned, particularly in higher education event management courses. The app is designed as an interactive learning environment that mimics real-life risk scenarios in events through solo, self-paced gameplay. Each challenge round presents a detailed risk case, followed by three progressive and interdependent multiple-choice questions: risk identification, mitigation planning, and communication strategy. AI logic is embedded to assess the consistency and strategic alignment of learners' responses across all three stages, awarding Risk Mastery Points (RMPs) accordingly. This digital innovation integrates scenario-based learning, decision trees, and gamification principles to enhance engagement, critical thinking, and learning retention. Preliminary student feedback shows increased interest, understanding, and preparedness in managing event risks. This submission aligns with IUCEL 2025's mission by promoting inclusive, accessible, and intelligent educational solutions tailored for the digital age.

Keywords: Gamification, Event Management, Risk Learning, Canva Code, Digital Education, AI-enhanced Learning

BACKGROUND OF THE RESEARCH / INNOVATION / INVENTION / DESIGN

Risk management education in event courses is often passive and theory-heavy, leading to disengagement and poor real-world preparedness. Traditional lecture-based approaches fail to simulate the complexity, immediacy, and teamwork required in actual event crisis scenarios. The Risk Quest Challenge: Solo Edition responds to this gap by creating an intelligent, gamified module that students can access independently, combining decision-making, risk logic, and AI-guided feedback.

DESCRIPTION OF THE RESEARCH / INNOVATION / INVENTION / DESIGN

The Risk Quest Challenge: Solo Edition is developed using Canva Code to deliver a responsive, interactive web-based learning application. In this platform, learners engage with structured "Risk Quests," each beginning with a contextual scenario such as weather disruptions or vendor failures and progressing through three interlinked decision-making stages: risk identification, mitigation planning, and communication response.

These decisions are scored using a Risk Mastery Points (RMP) system that evaluates the logical alignment and effectiveness of responses across the three stages. The app incorporates visual gamification elements including dashboards, leaderboards, badges, and feedback mechanisms. To enhance personalization and learning outcomes, AI-driven logic powers the decision pathways

and provides adaptive feedback in real-time. The solution is versatile and can be used in classroom, hybrid, or fully online environments, supporting self-directed and inclusive learning.

SIGNIFICANCE OF THE RESEARCH / INNOVATION / INVENTION / DESIGN

The Risk Quest Challenge: Solo Edition transforms passive, memory-based risk education into a dynamic and immersive learning experience tailored for modern learners. Traditionally, event risk management lessons in the classroom have relied heavily on theoretical lectures and written assessments. While such approaches introduce foundational concepts, they often fail to engage students meaningfully or prepare them for the unpredictable, high-pressure realities of managing risks in live event environments. Many students have struggled to apply theoretical models to real-world scenarios, relying instead on rote memorization to complete assessments, an approach that frequently leads to shallow understanding and poor long-term retention.

This innovation addresses those shortcomings by immersing learners in realistic event-based simulations that require strategic thinking and decision-making. Through a solo e-learning game format, students navigate complex risk situations across three interdependent decision stages: identifying the risk, proposing mitigation strategies, and selecting appropriate communication responses. Rather than testing memory recall, the tool evaluates the logic and consistency of a learner's approach using the Risk Mastery Point (RMP) system, which rewards aligned and well-justified decisions.

Previous research confirms the value of this design. Well-implemented gamification yields significant gains in cognitive, motivational, and behavioral outcomes (Sailer & Homner, 2020), with newer studies reporting even larger effects when mechanics, dynamics, and aesthetics are carefully integrated (Li, Ma, & Shi, 2023). Similarly, scenario and simulation-based learning has been shown to cultivate complex skills such as diagnosis, mitigation, and communication beyond lectures alone, with strong outcomes in higher education and particularly high effectiveness when scenarios are salient and scaffolded (Chernikova et al., 2020; Chernikova et al., 2023).

The Solo Edition also leverages AI-driven adaptive feedback, similar to intelligent tutoring systems, which consistently outperform non-adaptive instruction by offering personalized and immediate guidance (Ma et al., 2014; Kulik & Fletcher, 2016). Research further highlights that repeated practice with timely feedback leads to predictable learning gains, averaging 2.5% improvement in accuracy per practice opportunity underscoring why staged, feedback-rich quests are effective for building mastery (Koedinger et al., 2023).

Incorporating gamified features such as badges, leaderboards, and scenario outcomes enhances student motivation, engagement, and inclusivity. The platform accommodates diverse learning styles through visual, experiential, and scenario-based content, supporting differentiated instruction. For domain-specific relevance, hospitality and tourism education research confirms that simulations enhance decision-making, problem-solving, engagement, and perceived readiness for industry practice (Deale, Bae, & Lee, 2021; Price-Howard & Lewis, 2023). By bridging the gap between theoretical knowledge and practical application, the Risk Quest Challenge: Solo Edition cultivates essential competencies in risk analysis, decision-making under pressure, and crisis communication skills that are critical for success in the event industry and beyond.

IMPACT OF THE INNOVATION/INVENTION/DESIGN TOWARDS EDUCATION OR COMMUNITY

The Risk Quest Challenge: Solo Edition significantly broadens the reach of experiential learning by extending it beyond the confines of traditional classrooms. By leveraging web-based architecture and AI-powered interactivity, the tool ensures that learners can engage with meaningful, scenario-based content regardless of their physical location, schedule, or access to institutional infrastructure. This flexibility is particularly impactful for students who are remote, self-paced, working adults, or learners with accessibility needs who may struggle with rigid, synchronous educational formats.

Designed with inclusivity at its core, the Solo Edition fosters equity in education by enabling diverse learner profiles to engage with the same rigorous, high-quality instructional content. Its gamified structure complete with dynamic dashboards, decision trees, and real-time feedback that supports differentiated learning styles, including visual, kinesthetic, and experiential learners.

At the institutional level, universities gain from improved learning outcomes, increased student engagement, and data-driven insights into learner performance and behavior. Educators are empowered to assess not just what students know, but how they think and respond under simulated pressure, an often-missing element in conventional assessments. On a broader scale, communities stand to benefit from graduates who are not only theoretically informed but also practically equipped to manage real-world risks. These future event professionals will be more agile, communicative, and prepared to mitigate and respond to crises in ways that enhance public safety and confidence in large-scale events.

COMMERCIALIZATION POTENTIAL

The Risk Quest Challenge: Solo Edition holds substantial potential for commercialization across diverse education and training sectors. As a self-paced, gamified learning platform focused on experiential risk education, it is well-positioned to be licensed by higher education institutions, particularly those offering programs in event management, tourism, hospitality, public safety, and business continuity. Universities and colleges can integrate it into their digital learning ecosystems, either as a standalone training module or a scaffolded component within larger risk management curricula.

For professional training centers, the platform offers a modern alternative to static workshops and conventional slide-based training. Its interactive and scenario-based format simulates real-world complexities, making it highly attractive for workforce development programs that require flexible delivery modes and measurable learning outcomes. It can be deployed in continuing education settings to upskill event professionals, safety officers, and volunteers involved in large-scale public events.

In corporate environments, the tool can serve as a risk awareness simulator for companies organizing internal or public events. Human resources or training divisions can integrate it into employee onboarding or leadership development programs that emphasize crisis response, communication strategy, and operational risk thinking. Moreover, the platform's impact can be extended through AI-powered expansion, transforming it into a fully autonomous intelligent training system capable of personalized learning paths, predictive feedback, and performance analytics dashboards.

CONCLUSION

The Risk Quest Challenge: Solo Edition is a scalable, intelligent, and engaging innovation that bridges the gap between theory and real-world risk competency. By leveraging Canva Code and gamified AI elements, it transforms e-learning into an inclusive, strategic, and outcome-driven experience. Its application potential extends far beyond event education into broader crisis and operations management learning.

Acknowledgement: The authors would like to thank University Teaching and Learning Centre (UTLC), Universiti Utara Malaysia for their sponsor and continuous support of teaching innovation and digital learning transformation.

REFERENCES

1. Chernikova, O., Heitzmann, N., Stadler, M., Holzberger, D., Seidel, T., & Fischer, F. (2020). Simulation-based learning in higher education: A meta-analysis. *Review of Educational Research, 90*(4), 499–541.
2. Chernikova, O., Holzberger, D., Heitzmann, N., Stadler, M., Seidel, T., & Fischer, F. (2023). Where salience goes beyond authenticity. *Zeitschrift für Pädagogische Psychologie*.
3. Deale, C. S., Bae, S., & Lee, S. H. (2021). Educators' Use and Views of Simulations as Teaching Tools within a Discipline: The Example of Hospitality and Tourism. *International Journal for the Scholarship of Teaching and Learning, 15*(2), 10.
4. Koedinger, K. R., Carvalho, P. F., Liu, R., & McLaughlin, E. A. (2023). An astonishing regularity in student learning rate. *Proceedings of the National Academy of Sciences, 120*(13), e2221311120.
5. Kulik, J. A., & Fletcher, J. D. (2016). Effectiveness of intelligent tutoring systems: a meta-analytic review. *Review of educational research, 86*(1), 42-78.
6. Li, M., Ma, S., & Shi, Y. (2023). Examining the effectiveness of gamification as a tool promoting teaching and learning in educational settings: a meta-analysis. *Frontiers in Psychology, 14*, 1253549.
7. Ma, W., Adesope, O. O., Nesbit, J. C., & Liu, Q. (2014). Intelligent tutoring systems and learning outcomes: A meta-analysis. *Journal of educational psychology, 106*(4), 901.
8. Price-Howard, L. K., & Lewis, H. (2023). Perceived usefulness of simulation learning in hospitality education. *International Hospitality Review, 37*(2), 384-393.
9. Sailer, M., & Homner, L. (2020). The gamification of learning: A meta-analysis. *Educational psychology review, 32*(1), 77-112.

EMBRACING AI TO EMPOWER B40 WOMEN: A DIGITAL PLATFORM FOR LEARNING, AWARENESS, AND AFFORDABLE MENSTRUAL SUPPORT

SHARALA SUBRAMANIAM¹

¹School of General Studies and Languages Faculty of Social Sciences and Leisure Management, Taylor's University, No. 1 Jalan Taylor's, Subang Jaya 47500, Selangor, Malaysia

*Corresponding author's email: sharala.subramaniam@taylors.edu.my

Abstract

Menstrual health remains a significantly under-discussed and stigmatized topic in Malaysia, particularly among women from the B40 income group. The lack of formal menstrual education in schools, combined with financial constraints, results in many women resorting to unsafe alternatives such as newspapers, tissues, and reusable cloths due to their inability to afford sanitary products. This phenomenon, known as period poverty, highlights a critical gap in public health, education, and social equity. This study introduces Pads4Less, a digital platform designed to empower marginalized B40 women by increasing awareness, providing education, and improving access to affordable menstrual products. The platform incorporates artificial intelligence (AI) to streamline the creation of educational content and integrates a cost-offsetting model that leverages advertisement revenue and public donations. By viewing advertisements, users contribute to the subsidization of menstrual products, making them more affordable and accessible. Collaboration with the Sarawak-based NGO, P.A.D Project My, enables the platform to stay community-focused, culturally sensitive, and tailored to the actual needs and pricing realities of the target population. Additionally, the project employs the Empathy Map Canvas to gain deeper insight into the emotional and practical needs of B40 women, ensuring the platform's design and communication remain user-centric. The platform not only aims to provide physical support but also works to dismantle the stigma surrounding menstruation through digital learning tools and open dialogue. Ultimately, Pads4Less offers a scalable and socially responsible solution that leverages AI and community collaboration to combat period poverty and promote menstrual dignity through inclusive digital education.

Keywords: Period Poverty, Artificial Intelligence (AI), Digital Platform, Menstrual Health Education, B40 Women

BACKGROUND OF THE RESEARCH / INNOVATION / INVENTION / DESIGN

Menstrual health is often overlooked in Malaysia, especially among the B40 community, where women face financial constraints and social stigma. Many resort to unsafe alternatives such as newspapers and towels, leading to hygiene and health concerns (House et al., 2012). Limited formal education on menstruation worsens the problem, resulting in both practical and social disadvantages (UNESCO, 2014).

DESCRIPTION OF THE RESEARCH / INNOVATION / INVENTION / DESIGN

Pads4Less is a digital platform designed to subsidize sanitary products by integrating advertisements and donation features. Users contribute indirectly by engaging with ads, reducing the price of menstrual products. The platform also applies AI to create awareness materials, lesson content, and culturally sensitive campaigns. A partnership with P.A.D Project My provides valuable data to ensure accurate targeting and pricing.

SIGNIFICANCE OF THE RESEARCH / INNOVATION / INVENTION / DESIGN

This innovation simultaneously tackles three critical issues: (1) affordability of sanitary products, (2) lack of menstrual health education, and (3) societal stigma surrounding menstruation. By combining AI and NGO collaboration, the project creates a sustainable and socially responsible approach to menstrual equity (Sommer et al., 2015).

IMPACT OF THE INNOVATION/INVENTION/DESIGN TOWARDS EDUCATION OR COMMUNITY

For education, the project produces AI-generated, easily accessible learning resources on menstrual health for students and communities (Holmes, 2023). For society, it empowers marginalized women with affordable sanitary products, promotes dignity, and encourages open dialogue about menstruation. The initiative also fosters greater community awareness and participation through donation and ad-supported models.

COMMERCIALIZATION POTENTIAL

The platform presents a scalable model with potential for commercialization through corporate partnerships, digital ad placements, and donor networks. Expansion to other underserved groups or regions is feasible, ensuring long-term sustainability beyond charitable funding (Mukherjee & Sharma, 2022).

CONCLUSION

Pads4Less demonstrates how AI-driven platforms can provide inclusive, affordable, and socially impactful solutions to real-world problems. By addressing period poverty through technology, awareness, and collaboration, the project offers a replicable model that bridges digital innovation and community empowerment.

Acknowledgement: I would like to sincerely thank P.A.D Project My for their collaboration and valuable input in shaping this project. I am also grateful to my institution, Taylor's University, for the continuous support and encouragement that made this work possible.

REFERENCES

1. Holmes, W. (2023). Artificial intelligence in education: Promises and implications for equitable learning. Routledge Anderson, T. (Ed.). (2008). *The theory and practice of online learning* (2nd ed.). Athabasca University Press
2. House, S., Mahon, T., & Cavill, S. (2012). Menstrual hygiene matters: A resource for improving menstrual hygiene around the world. WaterAid. <https://washmatters.wateraid.org/>

3. Mukherjee, S., & Sharma, P. (2022). Digital platforms for social good: Opportunities and challenges in developing economies. *Journal of Social Entrepreneurship*, 13(3), 265–284. <https://doi.org/10.1080/19420676.2020.1805672>
4. Sommer, M., Hirsch, J. S., Nathanson, C., & Parker, R. G. (2015). Comfortably, safely, and without shame: Defining menstrual hygiene management as a public health issue. *American Journal of Public Health*, 105(7), 1302–1311. <https://doi.org/10.2105/AJPH.2014.302525>
5. UNESCO. (2014). Puberty education & menstrual hygiene management. UNESCO. <https://unesdoc.unesco.org>



**Proceeding of
International University
Carnival on E-Learning**



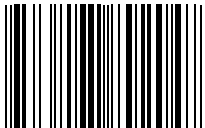
*“ Embracing AI for
Innovative Learning and
Inclusive Education ”*



**PENERBIT
UTeM
Press**

Website : <https://penerbit.utm.edu.my>
Books Online : <https://utembooks.utm.edu.my>
Email : penerbit@utm.edu.my

e ISBN 978-629-7892-04-7



9 1786297 189204 7