i-RIC 2024

INTERNATIONAL RESEARCH & INNOVATION CONFERENCE

"Harmony in Diversity : Fostering Unity Sustainable Research and Innovation Society"

24-25 July 2024

(Online Conference)

Organizer:

ULBI Universitas Logistik & Bisnis Internasional

POLITEKNIK MALAYSIA NILAI

KEMENTERIAN PENDIDIKAN TINGGI
JABATAN PENDIDIKAN POLITEKNIK DAN KOLEJ KOMUNITI

Co-organizer:

KEMENTERIAN PENDIDIKAN MALAYSIA

DINAMIKA TVET

SELÇUK UNIVERSITY FACULTY OF TECHNOLOGY

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Welcome Address

Rector
Universitas Logistik & Bisnis Internasional (ULBI), Indonesia

Bismillahirahmanirahim,

A warm welcome to everyone,

Ladies and gentlemen, allow me to take this opportunity to welcome you to the International Conference on International Research and Innovation 2024 with the theme Harmony in the Diversity: Fostering Unity Sustainable Research and Innovation Society. It is such an honour to co-host this event as it is well-known that this conference encapsulates the interest of academics globally in generating ideas and tackling, sharing, and changing ideas about future challenges in the fields of business, technology, and education.

This conference is very important to be held because innovation is the soul of every research and the foundation of our development as a society. Innovation is a crucial driver of progress and growth, but it can also come with its own set of challenges. I expect in this particular conference, and the participants can address and tackle the issues surrounding innovations. The issues such as resistance to change, lack of resources, short-term focus, inadequate collaboration, risk aversion, market uncertainty, intellectual property concerns, and implementation challenges may happen in every field of study. With the help of scholars, practitioners, students, and educational institutions, we can create a heterogenous ecosystem that produces sustainable innovation that fits with the needs of society. Not only that, addressing these issues requires a proactive and strategic approach. By fostering a supportive environment for innovation, organizations can overcome these challenges and drive meaningful progress.

I look forward to welcoming all participants to the conference anywhere you are. Eventually, I would like to close my words by wishing the conference every success and hope everyone here will have fruitful and meaningful discussions. Thank you.

Dr. Prety Diawati, S.Sos., M.M
Rector of Universitas Logistik & Bisnis Internasional (ULBI), Indonesia

Welcome Address

Chief Director
Polytechnic and Community College Education Department (POLYCC), Malaysia

Assalamualaikum Warahmatullahi Wabarakatuh,

Ladies and gentlemen, distinguished guests, esteemed colleagues, scholars, researchers, and innovators from around the globe. It is my great honor and privilege to welcome each and every one of you to the International Research and Innovation Conference (i-RIC 2024), organized by Universitas Logistik dan Bisnis Internasional (ULBI), in collaboration with our esteemed partners, Politeknik Nilai Negeri Sembilan (PNS), Polytechnic and Community College Education Department (POLYCC), Kumpulan Penyelidikan Universiti Dinamika TVET, Universiti Kebangsaan Malaysia (UKM), Technology Faculty, Selçuk Üniversitesi, Higher Institute of Arts and Crafts of Sfax (Institut Supérieur des Arts et Métiers de Sfax), Tunisia, and Negeri Sembilan Education Department.

We are delighted to host such a prestigious gathering of scholars, researchers, and innovators from around the globe. First and foremost, I would like to extend my heartfelt thanks to all of you for joining us, whether in person or virtually. Your presence here is a testament to your commitment to advancing knowledge, fostering innovation, and driving positive change in our respective fields. This conference is more than just a series of presentations and discussions; it is an opportunity to build bridges across disciplines, cultures, and borders. It is a platform for sharing ground breaking ideas, discovering new perspectives, and forging collaborations that will shape the future.

Over the next few days, we have a rich and diverse program planned for you. Our keynote speakers, who are leaders and pioneers in their fields, will share their insights and inspire us with their visionary ideas. We have numerous sessions covering a wide array of topics, workshops that promise hands-on learning experiences, and panel discussions that will provoke thought and stimulate debate. I encourage you to take full advantage of this opportunity to engage with your peers, exchange ideas, and explore potential collaborations. Let us make this conference a vibrant and dynamic forum for intellectual exchange and innovation.

Finally, I would also like to express our gratitude to our sponsors, partners, and the organizing committee, whose hard work and dedication have made this event possible. Without their support, this conference would not have been possible. Once again, welcome to the International Research and Innovation Conference (i-RIC 2024). May this conference be a fruitful and enriching experience for all of us.

Thank you.

Assalamualaikum Warahmatullahi Wabarakatuh.

Dr. Hj. Mohd Zahari Bin Ismail
Chief Director
Polytechnic and Community College Education Department, Malaysia

Welcome Address

Director
Politeknik Nilai, Negeri Sembilan (PNS), Malaysia

Assalamualaikum Warahmatullahi Wabarakatuh and my warmest greetings to all.

It is with great pleasure and enthusiasm that I welcome you to the International Research and Innovation Conference 2024 (i-RIC 2024), themed "Harmony in Diversity: Fostering Unity in a Sustainable Research and Innovation Society." This theme resonates with our current global landscape where research and innovation are not just aspirations but necessities for domestic progress.

In today's challenging world, the need to create unity in society is aligned with the National Unity Policy through the Concept of Diversity. Our ability to unite, despite our diverse backgrounds and perspectives, is not just a strength but a necessity. It is through this unity that we can harness the full potential of research and innovation to address pressing issues such as climate change, health disparities, and technological advances that are shaping our future.

Research fosters unity in society by identifying social issues, understanding cultural diversity, developing effective policies, evaluating unity programs, raising awareness, and encouraging dialogue between communities. Through data and analysis, the right steps are taken to create a more harmonious and united society. Continuous and careful research enables society to move towards stronger and more harmonious unity.

Innovation fosters unity in society by creating digital platforms for communication, developing inclusive education programs, encouraging community collaboration, and introducing technologies that bridge social divides. This initiative facilitates interaction, improves understanding, and strengthens relationships among various groups in society, fostering harmony and unity. The innovation developed must be grounded in unity, which is fundamental to implementing the national unity agenda.

IRIC 2024 is a testament to our collective dedication to create a better world through knowledge sharing, collaboration, and inclusive innovation at the international level. Each of you, as a participant, brings unique insights and expertise that will enrich our discussions and drive us toward actionable outcomes. Let us forge partnerships that transcend borders and disciplines, and let us commit to leaving a positive and lasting impact on society and the planet.

I would like to thank all the participants, organizers, and supporters who have contributed to making today's event a success. Your presence and contributions are essential to our shared mission of fostering unity within a sustainable research and innovation community.

Haji Wan Zulkifly bin Wan Zakaria
Director
Politeknik Nilai, Negeri Sembilan (PNS), Malaysia

Keynote Speeches
24 July 2024 (Wednesday)



Keynote Speech 1
Assoc. Prof. Dr. Ir. Agus Purnama, MT, CMILT
Vice Chancellor for Academic, Student Affairs & ICT
Universitas Logitik & Bisnis Internasional (ULBI)

Title : How to Boost Green Supply Chain Resilience

Agus Purnomo is a full-time Associate Professor at the Department of Master Logistic Management, Universitas Logistic Dan Bisnis Internasional. His research experience is in the field of Logistics and Supply Chain Management. He earned his PhD degree in 2009 at the Universitas Padjadjaran Bandung in the field of Operations Management. Master's degree in 1997 at the Institut Teknologi Bandung majoring in Industrial Engineering. Bachelor's degree in 1989 at Universitas Pasundan Bandung majoring in Industrial Engineering, Institut Teknologi Bandung.



Keynote Speech 2
Prof. Dr Mohamed KCHAOU
University of Bisha, Saudi Arabia

Title : Latex Based Membrane for Oily Waste Water Treatment: Technology, Process, and Perspectives

Mohamed KCHAOU is a Senior Professor at the University of Bisha (Saudi Arabia) and the University of Sfax (Tunisia). He leads a research group comprising several assistant professors, researchers, Ph.D., and master's students. Prof. KCHAOU has published over 60 indexed articles in well-impacted journals, more than 75 conference papers in the areas of Materials (green, bio, eco, etc), Engineering Systems, and Renewable Energy, and has authored 2 books related to materials sciences and technology, and tribology. He has managed numerous national and international projects and organized several scientific events in Tunisia, China, Turkey, Spain, Italy, Thailand, France, the USA, and the UK since 2012, he has been invited by well-known laboratories and institutions in France, Belgium, Turkey, Malaysia, Spain, Morocco, China, and India.

Keynote Speeches
25 July 2024 (Thursday)



Keynote Speech 1
Prof. Dr. Recai Kuş
University of Selcuk, Turkey

Title : Load Optimization of AISI 1040 and AISI 5140 Joint

Recai Kus is Professor at the University of Selcuk, Turkey, where he is also Director of Project Development and Management Application and Research Centre. He received his PHD in Mechanical Engineering from Selcuk University Graduate School of Natural and Applied Sciences, Turkey in 2007. His research interests include composite materials, materials testing, the development of new materials, and vehicle dynamics and safety. He has published research and review papers in various international journals and conference proceedings and has been a Visiting Professor in Malaysia and Tunisia. He has also been involved in European Union Grant project international research teams, particularly in the fields of brake friction materials and vehicle safety.



Keynote Speech 2
Dr Umawathy a/p Techanamurthy
Universiti Kebangsaan Malaysia (UKM)

Title : Harnessing the Potential of Maker Education in Enhancing Student Learning Outcomes

Dr Umawathy is a Senior Lecturer at the TVET-Engineering Unit, Department of Engineering Education, Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia (UKM). She earned her PhD degree in Instructional Technology in 2018 at University Malaya (UM) and Master's degree in Technical and Vocational Education& Training in UTHM and a Bachelor's Degree in Computer Science (Interactive Media from UTeM. She is also with the Dinamika TVET University Research Group. With combined academic and industrial experience of more than a decade, she is very passionate in enhancing TVET and Engineering Education.

Tentative Programme
International Research And Innovation Conference (i-RIC2024)

Day 1: 24 July 2024 (Wednesday)

TIME	PROGRAMME
08.30 – 09.00	Participant's Login
09.00 – 09.15	Opening Remarks by: Dr. Pretty Diawati (Rector ULBI)
09.15 – 10.15	Keynote Address Keynote Speaker 1: **Associate Professor Dr. Ir. Agus Purnomo, MT, CMILT** *Vice Chancellor for Academic, Student Affairs & ICT* *Univrsitas Logistik Dan Bisnis Internasional (ULBI)* Keynote Speaker 2: **Prof. Dr. Mohamed KCHAOU** *Senior Professor* *University of Bisha, Saudi Arabia & University of Sfax Tunisia*
10.15 -10.30	Break
10.30 – 13.00	**Parallel Session** Track 1: Engineering and Technology Track 2: Business and Management Track 3: Education, Teaching and Learning Track 4: Health and Life Sciences Track 5: Social Science Track 6: Information Communication Technology Track 7: Logistic & Supply Chain Management
13.00 – 14.30	Lunch Break
14.30 – 17.00	**Parallel Session** Track 1: Engineering and Technology Track 2: Business and Management Track 3: Education, Teaching and Learning Track 4: Health and Life Sciences Track 5: Social Science Track 6: Information Communication Technology Track 7: Logistic & Supply Chain Management

Tentative Programme
International Research And Innovation Conference (i-RIC2024)

Day 2: 25 July 2024 (Thursday)

TIME	PROGRAMME
08.30 – 09.00	Participant's Login
09.00 – 10.30	Keynote Address Keynote Speaker 1: **Prof. Dr. Recai Kuş** *Director of Project Development and Management Application and Research Centre, University of Selcuk, Turkey* Keynote Speaker 2: **Dr. Umawathy Techanamurthy** *Faculty of Engineering and Built Environment, Universiti Kebangsaan Malaysia*
10.30 - 10.45	Break
10.45 – 13.00	**Parallel Session** Track 1: Engineering and Technology Track 2: Business and Management Track 3: Education, Teaching and Learning Track 4: Health and Life Sciences Track 5: Social Science Track 6: Information Communication Technology Track 7: Logistic & Supply Chain Management
13.00 – 14.30	Lunch Break
14.30 – 17.00	**Closing Ceremony**

Official Closing Ceremony
25 July 2024 (Thursday)

TIME	PROGRAMME
02.15 PM	Arrival of Participants Arrival of Invited Guest YBrs. Mr. Shuharzi bin Md Salleh YBrs. Ts. Harun bin Sahat, Deputy Director of Academic Support YBrs. Haji Wan Zulkifly bin Wan Zakaria, Director of Polytechnic Nilai
02.30 PM	Arrival of the Guest of Honor YBrs. Ts. Haji Kamaludin bin Daud, Deputy Director General (Governance), Polytechnic and Community College Education Department
02.45 PM	National Anthem Du'a Recital
03.00 PM	Welcoming Speech by: Haji Wan Zulkifly bin Wan Zakaria Director of Polytechnic Nilai Closing Speech by: YBrs. Ts. Haji Kamaludin bin Daud Deputy Director General (Governance), Polytechnic and Community College Education Department Speech by Head of Jury Montage and Video Presentation Award Announcement Ceremony Conference Award • Best Paper Award • Best Presenter Award • Best Promising Authors Award Innovation Award • Gold Award • Silver Award • Bronze Award • Best Innovation Award • Best Video Award • Best Poster Award • Platinum Award Photo Session Refreshment. End of programme.

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 1 (Session 1: Morning)

Date: 24/07/2024
Time: 10.30 AM - 12.30 PM
Moderator: Ts. Norshima Binti Shaári
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Samsinor Binti Kamarudin (019-9561107) & Nur Farahdiba Binti Zulkefle (013-6243620)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	10.30 - 10.45 AM	Study Of Malay Traditional Architecture Approach In Landscape	Mohamad Hafiz Bin Sulaiman	Politeknik Nilai	Social Science
2	10.50 - 11.05 AM	The Impacts Of Online Learning On Students Satisfaction	Afeira Helena binti Zainudin	Politeknik Nilai	Social Science
3	11.10 - 11.25 AM	Retail Management Education In Malaysia: Identifying And Integrating Essential Skills	Nur Aliyah binti Azizi	Politeknik Nilai	Social Science
4	11.30 - 11.45 AM	The Effect Of Audit Experience And Auditors' Proficiency On Tax Audit Perceptions: Perspective Of SMEs In Malaysia	Rosfashihah Roslan	Politeknik Merlimau	Social Science
5	11.50 AM - 12.05 PM	Tahap Penguasaan Kemahiran Generik Pelajar Kolej Komuniti Wilayah Sarawak Dalam Proses Pengajaran Dan Pembelajaran Melalui Kursus MPU	Chong Chiew Ching	Kolej Komuniti Miri	Social Science
6	12.10 - 12.25 PM	Consumer Rights: What Consumers Should Know In Dealing With E-Commerce Transactions	Nur Farahin Afiqah Binti Daud	Politeknik Nilai	Social Science

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 1 (Session 2: Evening)

Date: 24/07/2024
Time: 2.30 PM - 4.30 PM
Moderator: Ts. Norshima Binti Shaári ; Aznida Wati Binti Abdul Ghani
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Samsinor Binti Kamarudin (019-9561107) & Nur Farahdiba Binti Zulkefle (013-6243620)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	2.30 - 2.45 PM	Development Of Tofu Sosej Tomyam	Nur Nafisa Binti Shafie @ Mohd Alias	Kolej Komuniti Bagan Serai	Social Science
2	2.50 - 3.05 PM	Students Intention Towards Sustainability: The Moderating Role Of Emotional Intelligence	Siti Yummy Faridatul Akmar Binti Mohamad	Politeknik Muadzam Shah	Social Science
3	3.10 - 3.25 PM	Literasi Kewangan Pelajar Diploma Pengajian Perniagaan Jabatan Perdagangan Politeknik Ungku Omar	Sazaliana Binti Shairali	Politeknik Ungku Omar	Social Science
4	3.30 - 3.45 PM	Effects Of Biofeedback Training On Heart Rate Variability And Performance Of College Golf Players	Huang Donghai	University Malaysia Pahang Al-Sultan Abdullah	Social Science
5	3.50 - 4.05 PM	Levels Of Student Involvement In Green Programs And Their Impact On Environmental Stewardship Attitudes	Zainatun Nisa Binti Sapaat	Politeknik Muadzam Shah	Social Science
6	4.10- 4.25 PM	Islamic Digital Marketing Template For Asnaf In Perlis	Izwan Nurli Mat Bistaman	Kolej Universiti Islam Perlis	Social Science

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 2 (Session 1: Morning)

Date: 24/07/2024
Time: 10.30 AM - 1.30 PM
Moderator: Syafawati Noorhafizah Binti Adnan Adil
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Nor Haziah Binti Hussin (012-3548718) & Sarrunnida Binti Ahmad Zaine (012-6377549)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	10.30 - 10.45 AM	Design Of Cloud-Based Hydroponic Plant Monitoring System Using Aiven Cloud MySQL Database	Ariffuddin Ibrahim	Politeknik Merlimau	Engineering And Technology
2	10.50 - 11.05 AM	The Study Of Land Surface Temperature In Kulim Hi Tech Using Landsat OLI 8	Zuraini binti Basarudin	Politeknik Tuanku Sultanah Bahiyah	Engineering And Technology
3	11.10 - 11.25 AM	Boron Content Analysis In Bleached Cigarette Stub Waste Using Fourier Transform Infrared Spectroscopy (FTIR) And Energy Dispersive X-Ray (EDX)	Karthigeyen A/L Ramachandran	Politeknik Tun Syed Nasir Syed Ismail	Engineering And Technology
4	11.30 - 11.45 PM	Influence Of Different Drying Methods On Anthocyanins Composition And Antioxidant Activities Of Mangosteen (Garcinia Mangostana L.) Pericarps And LC-MS Analysis Of The Active Extract	Nur Izzati Mohamed Nawawi	Universiti Putra Malaysia	Engineering And Technology
5	11.50 AM - 12.05 PM	Evaluation Of Pedestrian Walkways Quality At Polisas Campus Using P-Index And PLOs Methods	Adilen @ Lucia Binti Suil	Politeknik Sultan Haji Ahmad Shah	Engineering And Technology
6	12.10- 12.25 PM	Integration Of Artificial Intelligence In Education: Strategies, Implementation Challenges, And Impact On Learning Outcomes	Ahmad Razimi Mat Lazim	Politeknik Nilai	Engineering And Technology

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 2 (Session 1: Morning)

Date: 24/07/2024
Time: 10.30 AM - 1.30 PM
Moderator: Syafawati Noorhafizah Binti Adnan Adil
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Nor Haziah Binti Hussin (012-3548718) & Sarrunnida Binti Ahmad Zaine (012-6377549)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
7	12.30 - 12.45 PM	Comparative Analysis Of Charcoal And Banana Stem Fiber Filters In Fat, Oil, And Grease Traps: A Chemical Parameter Evaluation	Nor Aziah Fatma Binti Abdul Ayah @ Abdul Aziz	Politeknik Sultan Mizan Zainal Abidin	Engineering And Technology
8	12.50 - 1.05 PM	Numerical Study Of The Thermal Characteristics Of An Integrated Solar Collector-Storage System	Nasser Yahya Ayed Alahmary	University Of Bisha	Engineering And Technology
9	1.10 - 1.25 PM	PLC Based Automatic Mini Conveyor Control System Trainer Prototype Design Development	Bakiss Hiyana Binti Abu Bakar	Politeknik Sultan Haji Ahmad Shah	Engineering And Technology

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 2 (Session 2: Evening)

Date: 24/07/2024
Time: 2.30 PM - 5.10 PM
Moderator: Dr. Noraishikin Zulkarnain
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Nor Haziah Binti Hussin (012-3548718) & Sarrunnida Binti Ahmad Zaine (012-6377549)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	2.30 - 2.45 PM	Innovation In A Sustainable Synthesis Of Reduced Graphene Oxide Using Banana Peel Extract For Enhanced Physicochemical Properties	Lam Shuen	UCSI University	Engineering And Technology
2	2.50 - 3.05 PM	Power Consumption Analysis Of Centrifugal Force Apparatus TM 600	Arman Bin Md.Said	Politeknik Melaka	Engineering And Technology
3	3.10 - 3.25 PM	Raspberry Pi Wlan Cast As A Teaching And Learning Aid In Lecture Halls	Mohd Hafiz Bin Haron	Kolej Komuniti Seberang Jaya	Engineering And Technology
4	3.30 - 3.45 PM	Design Of Learnifybot: Supporting Hands-On Experience Of Stem Education In Malaysia	Juliyanna Binti Aliman	Politeknik Merlimau	Engineering And Technology
5	3.50 - 4.05 PM	Using Aloe Vera As Alternative To Rooting Hormone In Petunia Hybrida	Muhammad Fadhli Tariq Bin Ishak	Politeknik Nilai	Engineering And Technology
6	4.10 - 4.25 PM	Evaluation Of Tourism Development Potential Of Traditional Villages In Sichuan	Zhou Zi Hua	UMPSA	Engineering And Technology

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 2 (Session 2: Evening)

Date: 24/07/2024
Time: 2.30 PM - 5.10 PM
Moderator: Dr. Noraishikin Zulkarnain
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Nor Haziah Binti Hussin (012-3548718) & Sarrunnida Binti Ahmad Zaine (012-6377549)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
7	4.30 - 4.45 PM	The Impact Of Intersection Design On Traffic Volume And Road Service Level	Zuraidah Binti Hashim	Politeknik Sultan Haji Ahmad Shah	Engineering And Technology
8	4.50 - 5.05 Pm	Swelling And Solubility Properties Of Rice Flour And Starch From Malaysian Rice Cultivars	Aliah Zannierah Binti Mohsin	Universiti Putra Malaysia	Engineering And Technology

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 3 (Session 1: Morning)

Date: 24/07/2024
Time: 2.30 PM - 4.50 PM
Moderator: Dr. Ts. Mohd Nazri Abdul Rahman
Floor Manager: Raja Nadia Binti Raja Ahmad (013 8866616)
Secretariat: Roslena Binti Abdul Rahim (019-2413536) & Erna Ruhaily Binti Rusli (013-4868189)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	10.30 - 10.45 AM	Preliminary Investigation On The Use Of Organic Waste As A Medium For Fast-Acting Biofiltration Systems	Mohamad Azlan Yusuff Bin Abdul Rahim	Politeknik Nilai	Health And Life Sciences
2	10.50 - 11.05 AM	Efficient Production Of Docosahexaenoic Acid (DHA) By Aurantiochytrium SP. Using Pineapple Peel Extract As An Alternative Substrate.	Mohamed Yusuf Mohamed Nazir	Universiti Kebangsaan Malaysia	Health And Life Sciences
3	11.10 - 11.25 AM	Effects Of Low Alcohol Kombucha On Organoleptic Properties, Shelf Life And Nutritional Quality	Mohd. Nazri Bin Abdul Rahman	Universiti Malaysia Sabah	Health And Life Sciences
4	11.30 - 11.45 AM	Climate Change Increases The Risk Of Infectious Diseases And Solutions To Adress The Issues: A Review	Nur Adibah Mohidem	Universiti Sains Islam Malaysia	Health And Life Sciences
5	11.50 AM - 12.05 PM	Evaluation Of The Anti-Diabetic Properties Of Andrographis Paniculata Extract By In Silico Analysis	Rauda A. Mohamed	Nilai University	Health And Life Sciences
6	12.10 - 12.25 PM	Remote-Controlled Mobile Solar Watering System With IOT	Narayasamy Sures	Politeknik Nilai	Health And Life Sciences

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 3 (Session 2: Evening)

Date: 24/07/2024
Time: 2.30 PM - 4.50 PM
Moderator: Dr. Ts. Mohd Nazri Abdul Rahman ; Lar Dr Fara Diba Badrul Hisham
Floor Manager: Raja Nadia Binti Raja Ahmad (013 8866616)
Secretariat: Roslena Binti Abdul Rahim (019-2413536) & Erna Ruhaily Binti Rusli (013-4868189)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	2.30 - 2.45 PM	The Potential Of Shrub Plants As Soil Erosion Control	Mohamad Hafiz Bin Sulaiman	Politeknik Nilai	Health And Life Sciences
2	2.50 - 3.05 PM	Telang Flower: A Novel Approach To Pharmaceutical Innovation In Malaysia	Saiful Bin Mohamed Shuib	Politeknik Tuanku Syed Sirajuddin	Health And Life Sciences
3	3.10 - 3.25 PM	Development Of Bio-Board From Reutilization Of Spent Pleurotus Cajor-Saju Substrate	Muhammad Naim Bin Razali	Politeknik Nilai	Health And Life Sciences
4	3.30 - 3.45 PM	The Effectiveness Of Tannic Acid From Tea Waste As A Coagulant For Reducing Solids And Cod In Wastewater Treatment	Mohamad Azlan Yusuff Bin Abdul Rahim	Politeknik Nilai	Health And Life Sciences
5	3.50 - 4.05 PM	An Overview Of Artificial Intelligence Impact On Royal Malaysia Police	Harryanto Bujang	Pusat Latihan Polis Diraja Malaysia	Information Communication Technology
6	4.10 - 4.25 PM	Study On The Effectiveness Of Google Sites Usage In E-Studentpmk Using Google Analytics	Nazleena Binti Daud	Politeknik Melaka	Information Communication Technology
7	4.30 - 4.45 PM	Using Machine Learning To Analyse And Interpret Anthropometric Data For Badminton Talent Identification In Malaysia	Mohd Rozilee Wazir Norjali Wazir	Universiti Malaysia Sabah	Information Communication Technology

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 4 (Session 1: Morning)

Date: 24/07/2024
Time: 10.30 AM - 12.30 PM
Moderator: Dr. Rohaida Binti Ismail ; Izatul Syazreen Mohd Ismail
Floor Manager: Raja Nadia Binti Raja Ahmad (013 8866616)
Secretariat: Syazwani Binti Ab. Rahim (017-2035797) & Farah Najwa Binti Ahmad (013-3112451)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	10.30 - 10.45 AM	Leveraging Risk Management To Enhance ESG Performance	Ahmad Saiful Azlin Puteh Salin	Universiti Teknologi Mara Perak Branch Tapah Campus	Business And Management
2	10.50 - 11.05 AM	Analysis Of Usage Pattern Customer's Satisfaction (E-Complaint) Towards Management Effectiveness At Politeknik Nilai	Jerina Binti Ibrahim	Politeknik Nilai	Business And Management
3	11.10 - 11.25 AM	The Knowledge And Practices Environmental Among Students Of Kuching Polytechnic Sarawak	Faridah Bt Che In	Politeknik Kuching	Business And Management
4	11.30 - 11.45 AM	Exploring The Phillips Curve In Malaysia: A Long-Term Analysis Of Inflation And Unemployment From 1982 To 2022	Fardhila Syahira Binti Salmi Nordin	Politeknik Nilai	Business And Management
5	11.50 AM - 12.05 PM	Sustainable Tourism Development On Tourist Satisfaction And Revisit Intention	Nor Rahimy Binti Khalid	Politeknik Nilai	Business And Management

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 4 (Session 2: Evening)

Date: 24/07/2024
Time: 2.30 PM - 4.30 PM
Moderator: Dr. Rohaida Binti Ismail
Floor Manager: Raja Nadia Binti Raja Ahmad (013 8866616)
Secretariat: Syazwani Binti Ab. Rahim (017-2035797) & Farah Najwa Binti Ahmad (013-3112451)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	2.30 - 2.45 PM	The Rule Of Law And Islamic Banking Performance: A Case Study Of Malaysia	Mejar Hasrul Nizam Mamat	Politeknik Port Dickson	Business And Management
2	2.50 - 3.05 PM	Unveiling Greenwashing: Risks In Sustainability Reporting	Nurul Nazlia Jamil	Universiti Sains Islam Malaysia	Business And Management
3	3.10 - 3.25 PM	The Role Of Shipping Fee For Online Buyers Repurchase Intention	Tuan Mastiniwati Bte Tuan Mansor	Politeknik Hulu Terengganu	Business And Management
4	3.30 - 3.45 PM	Is The Business Incubation Program A Catalyst In Implementing Digital Entrepreneurship Education?: Developing A Multiple Case Study In Malaysian Polytechnics	Nur Syahirah Rosli	Universiti Putra Malaysia	Business And Management
5	3.50 - 4.05 PM	Digital Technology And Public Sector Performance: A Systematic Literature Review	Engku Mohamad Engku Abdullah	Bentong Community College	Business And Management

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 5 (Session 1: Morning)

Date: 24/07/2024
Time: 10.30 AM - 12.30 PM
Moderator: Mohd Zulfazli Bin Raub Khan
Floor Manager: Raja Nadia Binti Raja Ahmad (013 8866616)
Secretariat: Dr. Siti Nurfazilah Binti Abdul Rahman (017-2560439) & Noor Atiqah Binti Sanudin (013-3642406)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	10.30 - 10.45 AM	From Farm To Fork: Leveraging Blockchain Technology To Improve Food Supply Chain Integrity In Indonesia	Syifa Salsabila	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management
2	10.50 - 11.05 AM	Proposed Logistics Distribution Pattern For Regional Head Election In Bulukumba Regency (Case Study Of The 2024 Regional Head Election)	Mirza Azzahra Damayanti	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management
3	11.10 - 11.25 AM	The Effect Of Express Mail Service (EMS) Tariff, Direct Flight, And Logistics Competence On Service Quality And The Implication For Company Performance At PT Pos Ind KCU Denpasar	Yullia Ika Setyanhi	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management
4	11.30 - 11.45 AM	The Role Of Dynamic Logistic Capabilities Which Is Influenced By Customer Experience And Operational Excellence For PT Pos Indonesia Regional West Java	Arif Yudha Wahyudi	PT Pos Indonesia	Logistic And Supply Chain Management

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 5 (Session 1: Morning)

Date: 24/07/2024
Time: 10.30 AM - 12.30 PM
Moderator: Mohd Zulfazli Bin Raub Khan
Floor Manager: Raja Nadia Binti Raja Ahmad (013 8866616)
Secretariat: Dr. Siti Nurfazilah Binti Abdul Rahman (017-2560439) & Noor Atiqah Binti Sanudin (013-3642406)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
5	11.50 AM - 12.05 PM	The Impact Of Dedicated Storage And Class-Based Storage Methods On The Warehouse Layout Of Kpk Posind Jakarta Centrum On The Distance And Time Of Item Movement	Hendri Lasmana	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management
6	12.10 - 12.25 PM	The Impact Of Export Parcel Price, Parcel Service Quality, And Logistics Service Innovation On Purchasing Decisions And The Implications For Company Performance At PT PosIND KCU Denpasar	Depi Darpiyan	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 5 (Session 2: Evening)

Date: 24/07/2024
Time: 2.30 PM - 4.30 PM
Moderator: Syafawati Noorhafizah Binti Adnan Adil
Floor Manager: Raja Nadia Binti Raja Ahmad (013 8866616)
Secretariat: Dr. Siti Nurfazilah Binti Abdul Rahman (017-2560439) & Noor Atiqah Binti Sanudin (013-3642406)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	2.30 - 2.45 PM	Application Of Time Series Demand Forecasting Using The Pom For Windows Application To Determine Stamp Duty Sales By Pos Indonesia	Tata Sugiarta	Universitas Logistik Bisnis Internasional	Logistic And Supply Chain Management
2	2.50 - 3.05 PM	The Impact Of Ambidextrous Leadership, Logistics Organizational Culture, Logistics Organizational Structure, On Logistics Innovation And Its Implications For Company Performance Pt Pos Indonesia Bangkalan Branch Office	Ahmad Rosadi	Pt Pos Indonesia	Logistic And Supply Chain Management
3	3.10 - 3.25 PM	The Influence Of Logistics Service Quality On Customer Satisfaction And Loyalty At Pt Pos Indonesia Main Branch Office Bandung	Fahmi Nurul Fikri	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management
4	3.30 - 3.45 PM	Challenges And Strategies For Rice Price Stability: A Systematic Review Of Supply Chain Dynamics In Indonesia During Critical Periods	Rizki Alifnur Harmawan	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management
5	3.50 - 4.05 PM	Risk Management Design In Optimizing Employee Performance With The Approach Of Enterprise Risk Management (ERM)	Ramadani Al Mantinu	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management
6	4.10 - 4.25 PM	Integrating Advance Technology And Logistics Customer Service For Optimal Logistics Performance: A Study At Shopee Express Pangalengan Branch	Muhamad Faisal Nasrudin	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 6 (Session 1: Morning)

Date: 24/07/2024
Time: 10.30 AM - 1.50 PM
Moderator: Dr Nurul Shida Binti Noni ; Dr. Hjh. Nor Haniza Binti Mohamad
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Muhammad Bismi Bin Abu Bakar (018-7704780)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	10.30 - 10.45 AM	Stakeholder Perspectives On The Effectiveness Of Industry Engagement In Refining IT Final Year Project Titles	Aminah Bibi Bawamohiddin	Politeknik Ungku Omar	Education, Teaching And Learning
2	10.50 - 11.05 AM	Assessing The Impact Of Academic Advisory System (SPAk) On Student Satisfaction: A Case Study Of Polytechnic Nilai	Juhaida Binti Hassan	Politeknik Nilai	Education, Teaching And Learning
3	11.10 - 11.25 AM	Maker Market Use: Case Survey	Paliza Binti Deraman	Kolej Komuniti Tanjung Piai	Education, Teaching And Learning
4	11.30 - 11.45 AM	Development Of A Mini-Size Portable Cooling System For External Use	Faraziah Hassan	Politeknik Nilai	Education, Teaching And Learning
5	11.50 AM - 12.05 PM	Youtube As Learning Material For Research Courses: Implications On Learner Satisfaction & Subject Performance	Nurul Hidayana Mohd Noor	Uitm Seremban	Education, Teaching And Learning
6	12.10 - 12.25 PM	Engaging Culinary Students Through Game-Based Learning: Assessing The Culinary Conquest Board Game	Ahmad Ikhwan Fitri Bin Arefin	Langkawi Tourism Academy@Kolej Komuniti Langkawi	Education, Teaching And Learning

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 6 (Session 1: Morning)

Date: 24/07/2024
Time: 10.30 AM - 1.50 PM
Moderator: Dr Nurul Shida Binti Noni ; Dr. Hjh. Nor Haniza Binti Mohamad
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Muhammad Bismi Bin Abu Bakar (018-7704780)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
7	12.30 - 12.45 PM	Portable Solar Kit As A Teaching Tool For The Course See 10013: Electrical Fundamentals Electrical Technology Certificate Program.	Muhamad Hafiz Bin Abd Razak	Kolej Komuniti Kuantan	Education, Teaching And Learning
8	12.50 - 1.05 PM	Compact Solar Fish Dryer	Siti Saleha Binti Abdul Azis	Kolej Komuniti Pasir Salak	Education, Teaching And Learning
9	1.10 - 1.25 PM	Factors Influencing Retail Students Preference To Pursue A Diploma In Retail Management	Phaviithtirrah A/P Govindarajoo	Politeknik Sultan Azlan Shah	Education, Teaching And Learning

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 6 (Session 2: Evening)

Date: 24/07/2024
Time: 2.30 PM - 5.30 PM
Moderator: Dr Nurul Shida Binti Noni ; Izatul Syazreen Mohd Ismail
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Muhammad Bismi Bin Abu Bakar (018-7704780)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	2.30 - 2.45 PM	The Development Of Switchless Kit For Multi-Level Users	Mohd Saifuddin Ahmad	Politeknik Nilai	Education, Teaching And Learning
2	2.50 - 3.05 PM	Unveiling The Dynamics Of Students Attention: Exploring Influential Factors In Politeknik Kota Bharu Classroom	Melissa Khor Suan Chin	Politeknik Kota Bharu	Education, Teaching And Learning
3	3.10 - 3.25 PM	Develop An Immersive Islamic Ethics Learning Experience: Addie Model Approach	Mastura Mohamad	Politeknik Sultan Idris Shah	Education, Teaching And Learning
4	3.30 - 3.45 PM	Developing A Mobile-Assisted Language Learning (MALL) Application To Scaffold Esl Students Speaking Skills In Unsupportive Environments.	Diana Binti Ahmad Busra	Politeknik Port Dickson	Education, Teaching And Learning
5	3.50 - 4.05 PM	Student Attitudes Towards Institutional Entrepreneurship Programs: A Study Of Community Colleges	Yasinah Binti Abdul Rahman	Kolej Komuniti Kuala Langat Cawangan Sepang	Education, Teaching And Learning
6	4.10 - 4.25 PM	Tahap Kemahiran, Kefahaman Dan Minat Pelajar Melalui Bengkel Penghasilan Produk Berinovasi Sebagai Program Pembelajaran Sepanjang Hayat	Ariffuddin Ibrahim	Politeknik Merlimau Melaka	Education, Teaching And Learning

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 6 (Session 1: Morning)

Date: 24/07/2024
Time: 10.30 AM - 1.50 PM
Moderator: Dr Nurul Shida Binti Noni ; Dr. Hjh. Nor Haniza Binti Mohamad
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Muhammad Bismi Bin Abu Bakar (018-7704780)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
7	4.30 - 4.45 PM	Tiktok Addiction And Its Impact On Academic Performance Among Teenagers	Amirah Binti Othman	Politeknik Sultan Abdul Halim Mu'adzam Shah (Polimas)	Education, Teaching And Learning
8	4.50 - 5.05 PM	Analysis Of Malaysian Polytechnic Students That Successful Commissioned Relasis Brigade Credit Co-Curriculum Courses Towards Producing Quality TVET Graduates	Mohammad Fahmy Bin Ibrahim	Politeknik Nilai	Education, Teaching And Learning
9	5.10 - 5.25 PM	Effect Of Vitis Vinifera Jupiter Grape Sweetness Rate On Fertilizer Use	Mohd Ashraf Bin Ngah	Politeknik Nilai	Education, Teaching And Learning

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 1 (Session 1: Morning)

Date: 25/07/2024
Time: 10.30 AM - 1.30 PM
Moderator: Dr Mazlina Binti Mohd Tahir
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Samsinor Binti Kamarudin (019-9561107) & Nur Farahdiba Binti Zulkefle (013-6243620)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	10.30 - 10.45 AM	Benefit Of Bim At Design And Planning Stage: A Review	Huang Lei	Universiti Malaysia Pahang	Engineering And Technology
2	10.50 - 11.05 AM	Production Of Biochar From Sugarcane Biomass Under Slow Pyrolysis Process	Is Aizat Bin Samsuri	Politeknik Nilai	Engineering And Technology
3	11.10 - 11.25 AM	The Development Of Indoor Hydroponic System	Johari Ahmad Bin Ghazali	Politeknik Kuching Sarawak	Engineering And Technology
4	11.30 - 11.45 AM	Evaluation Of Biopesticides As A Sustainable Alternative For Controlling Pests On Lactuca Sativa (Green Coral Salad)	Muhammad Fadhli Tariq Bin Ishak	Politeknik Nilai	Engineering And Technology
5	11.50 AM - 12.05 PM	Investigation Of Noise Emission Level Along Ktm Kajang Railway Track To Kajang City Surrounding Residential	Karthigeyen A/L Ramachandran	Politeknik Tun Syed Nasir Syed Ismail	Engineering And Technology
6	12.10 - 12.25 PM	Integrating Biomimetic Design Principles From The Namib Desert Beetle Into Landscape Rain Harvesting Systems To Enhance Water Collection Efficiency And Sustainability: An Early Phase	Mohd Khairil Hilmi B Abd Halim	Politeknik Nilai	Engineering And Technology

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 1 (Session 1: Morning)

Date: 25/07/2024
Time: 10.30 AM - 1.30 PM
Moderator: Dr Mazlina Binti Mohd Tahir
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Samsinor Binti Kamarudin (019-9561107) & Nur Farahdiba Binti Zulkefle (013-6243620)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
7	12.30 - 12.45 PM	Programmes Educational Objectives (PEO) Attainment For Diploma In Electronic Engineering (Communication) At Politeknik Sultan Salahuddin Abdul Aziz Shah	Marlina Binti Ramli	Politeknik Sultan Salahuddin Abdul Aziz Shah	Engineering And Technology
8	12.50 - 1.05 PM	Deformation Characteristics Of Welded Connections, Analysis Using Deep Drawing And Finite Element Method	Mehmet Colgecen	Selcuk University	Engineering And Technology
9	1.10 - 1.25 PM	Comparison Of Microstructure And Mechanical Properties Of Dp1000 Steel Before And After Deformation	Berat Isik	Selcuk University	Engineering And Technology

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 2 (Session 1: Morning)

Date: 25/07/2024
Time: 10.30 AM - 1.30 PM
Moderator: Aznida Wati Binti Abdul Ghani
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Nor Haziah Binti Hussin (012-3548718) & Sarrunnida Binti Ahmad Zaine (012-6377549)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	10.30 - 10.45 AM	Remote Lab: An Enhancement In Technical And Vocational Education Training (TVET)	Vaina Panneer Selvan	Politeknik Banting Selangor	Engineering And Technology
2	10.50 - 11.05 AM	Smart Early Detection Of Rheumatoid Arthritis Tool On Nails With A Certainty Factor Technology Approach Based On Image Processing	Abi Mufid Octavio	University Of Muhammadiyah Malang	Engineering And Technology
3	11.10 - 11.25 AM	Development Of A Wind-Powered Battery Bank For Mobile Phone	Noranizah Binti Solihin	Politeknik Merlimau	Engineering And Technology
4	11.30 - 11.45 AM	Effect Of Channel Model On Flame Stability In Meso-Scale Combustor	Farhan Rahmatullah	University Of Muhammadiyah Malang	Engineering And Technology
5	11.50 AM - 12.05 PM	Fabrication Of Cat Bath Station Using Foot Paddling System	Mohd Rosli In Saad	Politeknik Kuching Sarawak	Engineering And Technology
6	12.10 - 12.25 PM	Crashing Infrastructure Projects Considering Scheduling Flexibility	Ali Alyami	University Of Bisha, Bisha, Saudi Arabia	Engineering And Technology

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 2 (Session 1: Morning)

Date: 25/07/2024
Time: 10.30 AM - 1.30 PM
Moderator: Aznida Wati Binti Abdul Ghani
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Nor Haziah Binti Hussin (012-3548718) & Sarrunnida Binti Ahmad Zaine (012-6377549)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
7	12.30 - 12.45 PM	The Impact Of Digital Transformation, Logistics Capabilities, Leadership Transformation On Business Model Innovation And Its Implications For Company Performance	Realyta B.U.Sirait	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management
8	12.50 - 1.05 PM	Application Of Blockchain Technology To Improve Transparency And Traceability Of Food Supply Chain In Indonesia	Syifa Salsabila	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management
9	1.10- 1.25 PM	A Study On Student Entrepreneurial Competencies, Academic Programs Towards Entrepreneurial Inclination At Politeknik Nilai (Pns)	Narizan Binti Abdullah	Politeknik Nilai	Business And Management

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 3 (Session 1: Morning)

Date: 25/07/2024
Time: 10.30 AM - 1.30 PM
Moderator: Dr. Umawathy Techanamurthy ; Dr. Noraishikin Zulkarnain
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Roslena Binti Abdul Rahim (019-2413536) & Erna Ruhaily Binti Rusli (013-4868189)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	10.30 - 10.45 AM	Analysis Efficiency Operations, Compliance Regulation And Management Risk To Success Export	Anida Wafiq Adawiyah	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management
2	10.50 - 11.05 AM	Internet Of Things Adoption In Supply Chain And Logistics Management: A Literature Review	Ab Rashid Bin Atan	Polytechnic Sultan Haji Ahmad Shah	Logistic And Supply Chain Management
3	11.10 - 11.25 AM	Analysis Of Factors That Influence The Effectiveness Of Hazardous And Toxic Materials Waste Warehouse Management At The Company Pt Sinergi Mitra Lestari Indonesia	Muhammad Andrey Alfian S.Log	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management
4	11.30 - 11.45 AM	The Critical Success Factors (Csfs) & Barriers : Digital Transformation (Dt) In Logistics Service Providers (Lsps) Systematic Literature Review	Gerardio Septa Widyawan	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management
5	11.50 AM - 12.05 PM	The Influence Of Organizational Ambidexterity, Business Strategies And Supplier Performance On Customer Statisfaction, And Its Implications On Logistics Performance At Bandung Main Branch Office Of Posind	Yogi Sudrajat	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 3 (Session 1: Morning)

Date: 25/07/2024
Time: 10.30 AM - 1.30 PM
Moderator: Dr. Umawathy Techanamurthy ; Dr. Noraishikin Zulkarnain
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Roslena Binti Abdul Rahim (019-2413536) & Erna Ruhaily Binti Rusli (013-4868189)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
6	12.10 - 12.25 PM	Analysis And Implementation Of The User-Centered Design Method In Designing A Web-Based Bidding Participation Information System: A Case Study At Pt Pos Indonesia (Persero)	Kokoh Handoko	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management
7	12.30 - 12.45 PM	Factor-2 Influences The Search For The Shortest Route In The Distribution: A Systematic Literature Review	Vrannico Putra Wijaya	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management
8	12.50 - 1.05 PM	A Literatur Review : Analysis Of Courier Business Strategies In Facing Global Challenges	Emay Marsita	Universitas Logistik Dan Bisnis Internasional	Logistic And Supply Chain Management

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 4 (Session 1: Morning)

Date: 25/07/2024
Time: 10.30 AM - 1.30 PM
Moderator : Izatul Syazreen Mohd Ismail
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Syazwani Binti Ab. Rahim (017-2035797) & Farah Najwa Binti Ahmad (013-3112451)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	10.30 - 10.45 AM	Cultivating A Culture Of Trust: Enhancing Organizational Engagement In Malaysian Technical Education	Ying-Leh Ling	Politeknik Kuching Sarawak	Education, Teaching And Learning
2	10.50 - 11.05 AM	The Usefulness Of Steps To Effective Presentation (Step) For Beginners Module In Improving Student Presentation Skills At Sarikei Community College	Lesta Anak Engkamat	Sarikei Community College	Education, Teaching And Learning
3	11.10 - 11.25 AM	The Use Of Public Speaking Programs (Out-Of-Class Activities) To Improve Polytechnic Students' Speaking Skills	Arnie Chiah Liling	Politeknik Nilai	Education, Teaching And Learning
4	11.30 - 11.45 AM	An Analysis Of Grammatical Errors In Students Written Assignment: A Thorough Look At Dialogue Writing	Nor Azma Manan	Kolej Komuniti Temerloh, Pahang	Education, Teaching And Learning
5	11.50 AM - 12.05 PM	The Effectiveness Of Iot Learning Kit: Improves The Understanding Of Course Participants Among Diploma Mechanical Students And Industrial Workers.	Maheran Sulaiman	Politeknik Nilai	Education, Teaching And Learning
6	12.10 - 12.25 PM	Study Of Effects Between Using Food Waste And Chemical Fertilizer For Brassica Rapa Chinensis Pak Choy	Mohd Ashraf Bin Ngah	Politeknik Nilai	Education, Teaching And Learning

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 4 (Session 1: Morning)

Date: 25/07/2024
Time: 10.30 AM - 1.30 PM
Moderator : Izatul Syazreen Mohd Ismail
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Syazwani Binti Ab. Rahim (017-2035797) & Farah Najwa Binti Ahmad (013-3112451)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
7	12.30 - 12.45 PM	The Effectiveness Of The GDB Compiler: Online Tool For Student Learning In Programming C++	Noor Afzan Binti Ahmad	Politeknik Mersing Johor	Education, Teaching And Learning
8	12.50 - 1.05 PM	The Perception Of Mechatronic Engineering Diploma Students At Polytechnic Sultan Azlan Shah Towards The Implementation Of Interactive Augmented Reality (Ar) Visualization For Autonomous Vehicle Robots	Ninie Farahana Binti Kamarulzaman	Politeknik Banting Selangor	Education, Teaching And Learning
9	1.10 - 1.25 PM	The Development Of Jawi Tutor Mobile Application Using Kodular	Farrah Waheda Binti Abdullah	Politeknik Kuching Sarawak	Education, Teaching And Learning

International Research & Innovation Conference 2024 (i-RIC2024)
Online Oral Presentation Schedule

Presentation Room 5 (Session 1: Morning)

Date: 25/07/2024
Time: 9.00 AM- 12.30 PM
Moderator: Syafawati Noorhafizah Binti Adnan Adil ; Dr. Ahmad Razimi Bin Mat Lazim
Floor Manager: Raja Nadia Binti Raja Ahmad (013-8866616)
Secretariat: Dr. Siti Nurfazilah Binti Abdul Rahman (017-2560439) & Noor Atiqah Binti Sanudin (013-3642406)

NO	SLOT TIME	TITLE OF THE RESEARCH/INNOVATION	PRESENTER NAME	INSTITUTION	FIELD/AREA
1	9.00 - 9.15 AM	Financial Status Among Politeknik Nilai Student	Suzana Binti Ithnain	Politeknik Nilai	Business And Management
2	9.20 - 9.35 AM	ESP Need Analysis Of CCU Bukit Aman	Norfaizah Bidin	Politeknik Nilai	Education, Teaching And Learning

i-RIC 2024
INTERNATIONAL RESEARCH & INNOVATION CONFERENCE

Abstract Compilation
Research

Research

Business and Management		
1	i-RIC2024_RP: 015-107	Sustainable Tourism Development on Tourist Satisfaction and Revisit Intention
2	i-RIC2024_RP: 093-041	Leveraging Risk Management to Enhance ESG Performance
3	i-RIC2024_RP: 099-045	The Knowledge and Practices of The Environment Among Students of Kuching Polytechnic Sarawak
4	i-RIC2024_RP: 101-046	The Rule of Law and Islamic Banking Performance: A Case Study of Malaysia
5	i-RIC2024_RP: 105-048	Unveiling Greenwashing: Risks in Sustainability Reporting
6	i-RIC2024_RP: 113-050	The Role of Shipping Fee for Online Buyer's Repurchase Intention
7	i-RIC2024_RP: 120-075	Is the Business Incubation Program a Catalyst in Implementing Digital Entrepreneurship Education?: Developing a Multiple Case Study in Malaysian Polytechnics
8	i-RIC2024_RP: 145-091	Exploring the Phillips Curve in Malaysia: A Long-Term Analysis of Inflation and Unemployment from 1982 to 2022
9	i-RIC2024_RP: 163-120	Financial Status among Politeknik Nilai Students
10	i-RIC2024_RP: 173-126	Analysis of Usage Pattern Customer's Satisfaction (E-Complaint) Towards Management Effectiveness at Politeknik Nilai
11	i-RIC2024_RP: 177-128	Digital Technology and Public Sector Performance: A Systematic Literature Review
12	i-RIC2024_RP: 186-147	A Study on Student Entrepreneurial Competencies, Academic Programs Towards Entrepreneurial Inclination at Politeknik Nilai (PNS)

Research

Education Teaching and Learning		
1	i-RIC2024_RP: 001-012	Development of a Mini-Size Portable Cooling System for External Use
2	i-RIC2024_RP: 008-003	Develop an Immersive Islamic Ethics Learning Experience: An ADDIE Model Approach
3	i-RIC2024_RP: 009-004	Unveiling the Dynamics of Students' Attention: Exploring Influential Factors in Politeknik Kota Bharu Classroom
4	i-RIC2024_RP: 011-005	YouTube as Learning Material for Research Courses: Implications on Learner Satisfaction & Subject Performance
5	i-RIC2024_RP: 017-013	Cultivating a Culture of Trust: Enhancing Organizational Engagement in Malaysian Technical Education
6	i-RIC2024_RP: 019-051	The Effectiveness of the GDB Compiler: Online Tool for Student Learning in Programming C++
7	i-RIC2024_RP: 027-018	The Usefulness of Steps to Effective Presentation (StEP) for Beginners Module in Improving Student Presentation Skills at Sarikei Community College
8	i-RIC2024_RP: 039-024	The Perception of Mechatronic Engineering Diploma Students at Polytechnic Sultan Azlan Shah Towards the Implementation of Interactive Augmented Reality (AR) Visualization for Autonomous Vehicle Robots
9	i-RIC2024_RP: 043-027	An Analysis of Grammatical Errors in Students' Written Assignment: A Thorough Look at Dialogue Writing
10	i-RIC2024_RP: 044-031	The Development of Switchless Kit for Multi-Level Users
11	i-RIC2024_RP: 045-032	The Effectiveness of IoT Learning Kit: Improves the Understanding of Course Participants Among Diploma Mechanical Students and Industrial Workers
12	i-RIC2024_RP: 054-043	Factors Influencing Retail Student's Preference to Pursue a Diploma in Retail Management

Research

Education Teaching and Learning		
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14	i-RIC2024_RP: 132-064	Compact Solar Fish Dryer
15	i-RIC2024_RP: 112-059	Engaging Culinary Students Through Game-Based Learning: Assessing the Culinary Conquest Board Game
16	i-RIC2024_RP: 114-079	Self-Directed Learning Readiness among Electrical Engineering Students, Sultan Haji Ahmad Shah Polytechnic
17	i-RIC2024_RP: 115-057	The Development of Jawi Tutor Mobile Application using Kodular
18	i-RIC2024_RP: 118-053	Maker Market Use: Case Survey
19	i-RIC2024_RP: 125-060	Portable Solar Kit as a Teaching Tool for SEE 10013 Course: Electrical Fundamentals Electrical Technology Certificate Program.
20	i-RIC2024_RP: 138-088	The Impact of Entrepreneurship Incubators on Shaping Students' Career Choices Towards Entrepreneurship
21	i-RIC2024_RP: 146-119	Students' Level of Skills, Understanding, and Interest Through an Innovative Product Development Workshop as a Lifelong Learning Programme
22	i-RIC2024_RP: 156-102	Stakeholder Perspectives on the Effectiveness of Industry Engagement in Refining IT Final Year Project Titles
23	i-RIC2024_RP: 160-104	ESP Needs Analysis of Corporate Communication Unit Bukit Aman (RMP)
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27	i-RIC2024_RP: 173-133	Analysis on Malaysian Polytechnic Students Successful Commissioned RELASIS Brigade Co-Curriculum Credit Courses Towards Producing Quality TVET Graduates
28	i-RIC2024_RP: 175-127	A Case Study: Assessing the Impact of Academic Advisory System (SPAk) on Student Satisfaction at Nilai Polytechnic
29	i-RIC2024_RP: 185-141	The Effect of Vitis Vinifera 'Jupiter Grape' Sweetness Rate Based on Fertilizer Use
30	i-RIC2024_RP: 185-142	Study of Effects Between Using Food Waste and Chemical Fertilizer for *Brassica Rapa Chinensis 'Pak Choy'*

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2	i-RIC2024_RP: 014-008	The Study of Land Surface Temperature in Kulim Hi-Tech Using Landsat OLI 8
3	i-RIC2024_RP: 018-009	Boron Content Analysis in Bleached Cigarette Stub Waste Using Fourier Transform Infrared Spectroscopy (FTIR) And Energy Dispersive X-Ray (EDX)
4	i-RIC2024_RP: 018-011	Investigation of Noise Emission Level Along KTM Kajang Railway Track to Kajang City Surrounding Residential
5	i-RIC2024_RP: 028-017	Influence of Different Drying Methods on Anthocyanins Composition and Antioxidant Activities of Mangosteen (Garcinia Mangostana L.) Pericarps and LC-MS Analysis of the Active Extract
6	i-RIC2024_RP: 030-020	Programmes Educational Objectives (PEO) Attainment for Diploma in Electronic Engineering (Communication) at Politeknik Sultan Salahuddin Abdul Aziz Shah
7	i-RIC2024_RP: 042-028	Innovation in a Sustainable Synthesis of Reduced Graphene Oxide Using Banana Peel Extract for Enhanced Physicochemical Properties
8	i-RIC2024_RP: 047-042	Raspberry Pi Wlan Cast as a Teaching and Learning Aid in Lecture Halls
9	i-RIC2024_RP: 050-076	Remote Lab: An Enhancement in Technical and Vocational Education Training (TVET)
10	i-RIC2024_RP: 097-058	Swelling and Solubility Properties of Rice Flour and Starch from Malaysian Rice Cultivars
11	i-RIC2024_RP: 116-052	Evaluation of Pedestrian Walkways Quality at POLISAS Campus Using P-Index and PLOS Methods
12	i-RIC2024_RP: 121-055	PLC-Based Automatic Mini Conveyor Control System Trainer Prototype Design Development

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13	i-RIC2024_RP: 122-056	The Impact of Intersection Design on Traffic Volume and Road Service Level
14	i-RIC2024_RP: 133-067	Comparative Analysis of Charcoal and Banana Stem Fiber Filters in Fat, Oil, and Grease Traps: A Chemical Parameter Evaluation
15	i-RIC2024_RP: 136-101	Power Consumption Analysis of Centrifugal Force Apparatus TM 600
16	i-RIC2024_RP: 140-081	Development of a Wind-Powered Battery Bank for Mobile Phone
17	i-RIC2024_RP: 141-080	Smart Early Detection of Rheumatoid Arthritis Tool on Nails with Certainty Factor Technology Approach Based on Image Processing
18	i-RIC2024_RP: 142-082	Effect of Channel Model on Flame Stability in Meso-Scale Combustor
19	i-RIC2024_RP: 146-089	Support in STEM Hands-On Education Experience in Malaysia : A Design of LearnifyBot
20	i-RIC2024_RP: 146-094	Cloud-Based Hydroponic Plant Monitoring System Design Using Aiven Cloud MySQL Database
21	i-RIC2024_RP: 152-096	Evaluating the Potential of Tourism Development Potential at Traditional Villages in Sichuan
22	i-RIC2024_RP: 153-098	A Review : The Benefit of BIM to Enhance Design and Planning Stage in Construction
23	i-RIC2024_RP: 161-105	The Production of Biochar From Sugarcane Biomass Under Slow Pyrolysis Process
24	i-RIC2024_RP: 164-109	The Development and Evaluation of Indoor Hydroponic System in Plant Care
25	i-RIC2024_RP: 165-110	Developing Mobile-Assisted Language Learning (MALL) Application to Scaffold ESL Students' Speaking Skills in Unsupportive Environments

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26	i-RIC2024_RP: 166-111	Effectiveness of Biopesticides as a Sustainable Alternative for Controlling Pests on *Lactuca Sativa* (Green Coral Salad)
27	i-RIC2024_RP: 166-112	Use of *Aloe Vera* as an Alternative to Rooting Hormone in *Petunia Hybrida*
28	i-RIC2024_RP: 182-138	Integrating Biomimetic Design Principles from The Namib Desert Beetle Into Landscape Rain Harvesting Systems To Enhance Water Collection Efficiency and Sustainability : An Early Phase
29	i-RIC2024_RP: 187-148	Numerical Study of the Thermal Characteristics of an Integrated Solar Collector-Storage System
30	i-RIC2024_RP: 188-149	Fabrication of Cat Bath Station Using Foot Paddling System
31	i-RIC2024_RP: 189-150	Crashing Infrastructure Projects Considering Scheduling Flexibility
32	i-RIC2024_RP: 190-151	Comparison of Microstructure and Mechanical Properties of DP1000 Steel Before and After Deformation
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Health and Life Sciences		
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2	i-RIC2024_RP: 037-023	The Effectiveness of Tannic Acid from Tea Waste as a Coagulant for Reducing Solids and Cod in Wastewater Treatment
3	i-RIC2024_RP: 038-029	The Potential of Shrub Plants as Soil Erosion Control
4	i-RIC2024_RP: 041-026	Effects of Low Kombucha Alcohol on Organoleptic Properties, Shelf Life and Nutritional Quality
5	i-RIC2024_RP: 046-071	Evaluation of the Anti-Diabetic Properties of Andrographis Paniculata Extract in Silico Analysis
6	i-RIC2024_RP: 048-034	A Review: Climate Change Increases the Risk of Infectious Diseases and Solutions to Address the Issues
7	i-RIC2024_RP: 117-092	Efficient Production of Docosahexaenoic Acid (DHA) by Aurantiochytrium sp. Using Pineapple Peel Extract as an Alternative Substrate
8	i-RIC2024_RP: 144-118	Design and Implementation of Remote-Control Monitoring and Mobile Watering System
9	i-RIC2024_RP: 147-090	Quantitative Description Analysis (QDA) and Consumer Preference on Imitation Chicken Nuggets from Gray Oyster Mushroom Stems and Chickpea Flour
10	i-RIC2024_RP: 157-103	Telang Flower: A Novel Approach to Pharmaceutical Innovation in Malaysia
11	i-RIC2024_RP: 170-117	Development of Bio-Board from Reutilization of Spent Pleurotus Cajor-Saju Substrate

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2	i-RIC2024_RP: 044-031	Developing and Using of Switchless Kit for Multi-Level Users
3	i-RIC2024_RP: 053-037	Machine Learning Techniques to Analyze and Interpret Anthropometric Data for Badminton Talent Identification in Malaysia
4	i-RIC2024_RP: 096-044	Study on the Effectiveness of Google Sites Usage in e-studentPMK Using Google Analytics

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2	i-RIC2024_RP: 055-084	The Influence of Organizational Ambidexterity, Business Strategies and Supplier Performance on Customer Satisfaction, and Its Implications on Logistics Performance At Bandung Main Branch Office of PosIND
3	i-RIC2024_RP: 058-135	The Effect and Implication of Express Mail Service (EMS) Tariff, Direct Flight and Logistics Competence on Service Quality for Company Performance at PT PosIND KCU Denpasar
4	i-RIC2024_RP: 059-143	Analysis of Factors that Influence the Effectiveness of Export Performance : Case Study at PT. Sinergi Mitra Lestari Indonesia
5	i-RIC2024_RP: 065-123	Challenges and Strategies for Rice Price Stability: A Systematic Review of Supply Chain Dynamics in Indonesia During Critical Periods
6	i-RIC2024_RP: 069-085	Analysis and Implementation of the User-Centered Design Method in Designing a Web-Based Bidding Participation Information System: A Case Study at PT Pos Indonesia (Persero)
7	i-RIC2024_RP: 071-145	The Critical Success Factors (CSFs) & Barriers in Digital Transformation (DT) in Logistics Service Providers (LSPs) : Literature Review
8	i-RIC2024_RP: 075-070	The Impact of Digital Transformation, Logistics Capabilities, Leadership Transformation on Business Model Innovation and Its Implications for Company Performance
9	i-RIC2024_RP: 078-146	A Literature Review : Analysis of Courier Business Strategies in Facing Global Challenges
10	i-RIC2024_RP: 079-078	Application of Blockchain Technology to Improve Transparency and Traceability of Food Supply Chain in Indonesia
11	i-RIC2024_RP: 079-122	Leveraging Blockchain Technology to Improve Food Supply Chain Integrity in Indonesia : From Farm to Fork

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Logistic and Supply Chain Management		
12	i-RIC2024_RP: 080-095	Application of Time Series Demand Forecasting Using The POM for Windows Application to Determine Stamp Duty Sales by Pos Indonesia
13	i-RIC2024_RP: 088-087	The Influence of Logistics Quality Service on Customer Satisfaction and Loyalty at PT Pos Indonesia Main Branch Office Bandung
14	i-RIC2024_RP: 103-125	Integrating Advance Technology and Logistics Customer Service for Optimal Logistics Performance: A Study at Shopee Express Pangalengan Branch
15	i-RIC2024_RP: 171-121	The Impact of Ambidextrous Leadership, Logistics Organisational Culture, Logistics Organisational Structure, on Logistics Innovation and Its Implications for Company Performance PT Pos Indonesia Bangkalan Branch Office
16	i-RIC2024_RP: 172-124	Risk Management Design in Optimizing Employee Performance with the Approach of Enterprise Risk Management (ERM)
17	i-RIC2024_RP: 174-134	The Impact of Export Parcel Price, Parcel Service Quality, and Logistics Service nnovation on Purchasing Decisions and the Implications for Company Performance at PT PosIND KCU Denpasar
18	i-RIC2024_RP: 176-132	The Impact of Dedicated Storage and Class-Based Storage Methods on the Warehouse Layout of KPK PosIND Jakarta Centrum on the Distance and Time of Item Movement
19	i-RIC2024_RP: 178-129	Proposed Logistics Distribution Pattern for Regional Head Election In Bulukumba Regency : Case Study of Regional Head Election
20	i-RIC2024_RP: 179-136	Internet of Things (IoT) Adoption in Supply Chain and Logistics Management: A Literature Review
21	i-RIC2024_RP: 180-130	The Effect of Express Mail Service (EMS) Tariff, Direct Flight, and Logistics Competence on Service Quality and the Implications for Company Performance at PT PosIND KCU Denpasar
22	i-RIC2024_RP: 181-131	The Role of Dynamic Logistic Capabilities which is Influenced by Customer Experience and Operational Excellence for PT Pos Indonesia Regional West Java

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2	i-RIC2024_RP: 033-019	Tahap Penguasaan Kemahiran Generik Pelajar Kolej Komuniti Wilayah Sarawak Dalam Proses Pengajaran dan Pembelajaran Melalui Kursus MPU
3	i-RIC2024_RP: 038-021	Modern Landscape Design Approach from Malay Traditional Architecture
4	i-RIC2024_RP: 057-038	The Impacts of Online Learning on Student's Satisfaction
5	i-RIC2024_RP: 109-049	Development of Tofu Sausage Tomyam
6	i-RIC2024_RP: 010-006	The Effect of Audit Experience and Auditors' Proficiency on Tax Audit Perceptions: Perspective of SMEs in Malaysia
7	i-RIC2024_RP: 126-061	Retail Management Education in Malaysia: Identifying and Integrating Essential Skills
8	i-RIC2024_RP: 130-069	Students' Intention Towards Sustainability: The Moderating Role of Emotional Intelligence
9	i-RIC2024_RP: 135-074	Literasi Kewangan Pelajar Diploma Pengajian Perniagaan Jabatan Perdagangan Politeknik Ungku Omar
10	i-RIC2024_RP: 155-100	Bold Effects of Biofeedback Training on Heart Rate Variability and Performance of College Golf Players
11	i-RIC2024_RP: 168-116	Levels of Student Involvement in Green Programs and Their Impact on Environmental Stewardship Attitudes
12	i-RIC2024_RP: 183-139	Islamic Digital Marketing Template for Asnaf in Perlis

Research Paper
Business and Management

SUSTAINABLE TOURISM DEVELOPMENT ON TOURIST SATISFACTION AND REVISIT INTENTION

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Abstract

The tourism industry has been a vibrant and competitive industry recently. This industry is becoming important in order to boost the economy of the country as well as increase popularity and awareness through publicity. Traveling is the perfect entertainment for people of any age in modern lifestyles. People will travel to destinations that provide facilities and experiences for tourists. Note that sustainable tourism and revisit intention are vital research issues in the tourism industry. Despite the considerable amount of research on revisit intention, it remains unclear why people come again and whether sustainable tourism influences the visitor's behavior. Therefore, this assessed the visitor's behavior literature gap by focusing on the relationship between sustainable tourism and revisiting intention from the customer's perspective. The survey was distributed to local tourists. A total of 202 respondents from Seremban, Malaysia, were involved. The data was analysed using partial least squares structural equation modeling. This study identifies that economic benefit, sustainable tourism, perceived experience, and user-generated content positively influence tourist satisfaction. Furthermore, tourist satisfaction significantly influences revisit intention, which reveals the current behaviour of local tourists. Analysis from the study shows that tourists will revisit and recommend Negeri Sembilan as a holiday destination.

Keywords: Sustainable Tourism, Revisit intention, Tourist Satisfaction, Customer Perspective

LEVERAGING RISK MANAGEMENT TO ENHANCE ESG PERFORMANCE

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Abstract

The purpose of this research is to provide a conceptual framework for risk management based on environmental, social, and governance (ESG) perspectives. The goals of this ESG risk management are to identify and address ESG that can affect business financial performance and reputation. This will ensure that the company has sustainable operations, meets stakeholders' expectations, secures lower financing costs, complies with rules and regulations and positively contributes to the environment and society. Businesses that have a systematic process and procedure for ESG risk management have a greater tendency to be more conscientious, less risky, and hence, more likely to be successful.

Keywords: risk management, ESG, sustainability, environment, social, governance

THE KNOWLEDGE AND PRACTICES OF THE ENVIRONMENT AMONG STUDENTS OF KUCHING POLYTECHNIC SARAWAK

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Abstract

Environmental knowledge plays a crucial role for humans and their surroundings. Environmental awareness is a very important element in determining the well-being and quality of human life. This is because a good environment can guarantee the well-being and comfort of communities as they enjoy the fresh air and practice a culture of healthy living. At the same time, people need to be aware and more sensitive to environmental awareness and issues and to be able to deal with pollution that can affect air quality. The objectives of the study have been to identify the level of students' knowledge of recycling issues and to recognize the practices of students on environmental issues. Those involved in this study are students from various fields of study. This study was conducted with 384 respondents of various races and ages. A descriptive approach was used to analyse the data. Research information is collected when questionnaires are filled out by respondents. Some of them are also discussed. In conclusion, this study found that the knowledge level of Polytechnic Kuching Sarawak students is still at a good level.

Keywords: knowledge, practices environmental, students

THE RULE OF LAW AND ISLAMIC BANKING PERFORMANCE: A CASE STUDY OF MALAYSIA

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Abstract

The study examines how Islamic banking principles (Sharia compliance) influence bank profitability on Return on Asset (ROA), Return on Equity (ROE) and Net Interest Margin (NIM) in Malaysia compared to conventional banks. Data was collected from Malaysian Islamic banks between 2003 and 2018. The analysis employs panel data regression models with Ordinary Least Squares (OLS) to assess the relationship between bank-specific characteristics (liquidity, capitalisation size, asset quality, management quality), macroeconomic determinants (economic growth, inflation, global financial crisis), rule of law, and bank profitability. The study anticipates that some Islamic banking principles might influence profitability differently compared to conventional banks. The five bank-specific characteristics indicate a substantial correlation between the bank's performance and the Islamic banking market in Malaysia. While asset and management quality have a negative correlation with bank profitability, bank size and capitalization have a positive and statistically significant correlation with bank performance. Bank performance is significantly and negatively impacted by the gross domestic product, which is a macroeconomic determinant. However, there is a significant correlation between inflation and the success of Islamic banks. The profitability of Islamic banks is unaffected by the global financial crisis. The outcome demonstrates that bank performance was unaffected by the national governance index. Additionally, the rules of law indicator shows that the outcome is insignificant and has no effect on the performance of the bank. The outcome demonstrates the significant correlation between the potential variable and the banks' performance. Both external and internal factors have an impact on the bank's profitability and performance.

Keywords: Conventional Banks, Islamic Banks, Productivity, Rule of Law.

UNVEILING GREENWASHING: RISKS IN SUSTAINABILITY REPORTING

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Abstract

In recent years, the corporate world has witnessed a surge in sustainability reporting, reflecting a growing awareness of environmental and social responsibility. However, amidst this trend lies a significant risk: greenwashing. Greenwashing refers to the deceptive practice of conveying a false impression or providing misleading information about a company's environmental efforts. This paper explores the phenomenon of greenwashing and its ramifications in sustainable reporting. The first part of the paper delves into the motivations behind greenwashing, ranging from gaining a competitive advantage to appeasing stakeholders and regulatory bodies. The paper also examines the implications of greenwashing for stakeholders and the environment. Misleading sustainability reporting can erode trust among consumers, investors, and communities, leading to reputational damage and financial losses. The study employs an inductive approach that analyzes literature to develop coherent narratives and theoretical insights regarding the phenomenon of greenwashing and its implications for sustainability reporting. The study makes attempts to highlight the challenges of detecting and combating greenwashing. With the lack of standardized metrics and regulatory oversight, distinguishing between authentic sustainability practices and deceptive claims becomes increasingly difficult. This opacity poses risks not only to stakeholders but also to the credibility of sustainability reporting as a whole. The paper concludes that there is a need for transparency, accountability, and robust verification mechanisms in sustainable reporting. Companies must uphold integrity in their environmental claims and adopt rigorous standards to ensure credibility. By promoting transparency and accountability in reporting practices, stakeholders can make informed decisions and drive meaningful change towards a more sustainable future.

Keywords: Greenwashing, Sustainability Reporting, Environmental, Social and Governance

THE ROLE OF SHIPPING FEE FOR ONLINE BUYER'S REPURCHASE INTENTION

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Abstract

The advancement in technology and the unique criteria of modern consumers encourage businesses to shift their business to selling products online. The emergence of many platforms and individual online sellers enhances the competition. Thus, retaining their current customers becomes a major issue for online sellers. To enhance repurchase intention, many online sellers offer free delivery or reduce the shipping cost to celebrate events during festivals. However, the role of shipping delivery as a promotional factor in trust, logistics service quality, and repurchase intention is still under study among online shoppers. On top of that, while the SOR model has been largely applied in various areas to predict consumer future behaviour, there is a lack of studies employing the SOR Model to predict repurchase intention among online shoppers. To fill the gaps in the literature, the study objective is to investigate the role of shipping delivery as a stimulus factor between logistics service quality and trust in the promotion, as a variable representing the organism factor, and repurchase intention as a response factor in the model. Using the purposive sampling method, a total of 357 data were gathered online and were usable for the analysis. Employing Structural Equation Modelling with Smart Partial Least Squares (PLS) as a statistical analysis technique, the study found that all hypotheses were supported. The findings of the study provide insight into the role of shipping delivery as a factor influencing repurchase intention and can help online retailers recognize the expectations and preferences of consumers when providing better services.

Keywords: Online Seller, Shipping Delivery, Trust, Logistics Service Quality and Repurchase Intention

IS THE BUSINESS INCUBATION PROGRAM A CATALYST IN IMPLEMENTING DIGITAL ENTREPRENEURSHIP EDUCATION?: DEVELOPING A MULTIPLE CASE STUDY IN MALAYSIAN POLYTECHNICS

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Abstract

The landscape of business models is shifting towards digital platforms, elevating the role of "digital entrepreneurship." Due to this, business incubators are seen as the catalyst for advancing the integration of digital entrepreneurship in education. Although digital technology policies were established for TVET institutions, Malaysian polytechnics faced challenges in establishing digital-based incubators due to limited business digitalization and a lack of clarity regarding practical incubation facets for digital entrepreneurship education within the institutions. To address this, a multiple-case study should be developed to gain insights into the implementation of digital entrepreneurship education in Malaysian polytechnics by integrating the Student Encouragement Entrepreneurship Incubation Model, Institutional Isomorphism Theory, and New Venture Creation Theory as the theoretical lenses. Data will be collected via semi-structured interviews with student entrepreneurs, entrepreneurship mentors, and incubator managers, selected through heterogeneous sampling. Direct observations and document analysis will be utilized for method triangulation to enhance trustworthiness. Within-case and cross-case analyses are used to identify similarities and differences among the selected cases. The findings will explore entrepreneurial motivation, incubator management strategies, and pedagogical approaches for implementing digital entrepreneurship education in Malaysia's polytechnics business incubation program. These critical elements are essential for ensuring the relevance, adaptability, and effectiveness of business incubation programs, enhancing product innovation and commercialization among student entrepreneurs. The research findings aim to inform policymakers, particularly within the Malaysian Ministry of Higher Education and the Polytechnic and Community College Education Department, to develop strategies fostering a robust ecosystem for digital entrepreneurship education within TVET institutions like polytechnics.

Keywords: digital entrepreneurship, entrepreneurship education, business incubator, TVET, qualitative

EXPLORING THE PHILLIPS CURVE IN MALAYSIA: A LONG-TERM ANALYSIS OF INFLATION AND UNEMPLOYMENT FROM 1982 TO 2022

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Abstract

The relationship between inflation and unemployment has been widely explored and discussed for decades. This relationship is often debated through the lens of The Phillips Curve which suggests an inverse relationship between inflation and unemployment in an economy. This curve, developed by New Zealand economist A.W. Phillips, initially indicated a trade-off relationship between the rate of inflation and unemployment. Malaysia, as a developing country, faces the dual macroeconomic challenges of achieving higher economic growth rates while maintaining low inflation and unemployment rates. Therefore, the purpose of this study is to examine the relationship between inflation and unemployment in Malaysia in the long term. To attest to this objective, the Pearson correlation and regression analyses were conducted on the time series secondary data over a period of 41 years, from 1982 to 2022. The results of Pearson Correlation Test indicate a significant and weak negative linear relationship between inflation and unemployment in Malaysia ($r=-0.283$, $p=0.040$, $n=39$).

Keywords: Inflation Unemployment, Trade-off relationship, Macroeconomics

FINANCIAL STATUS AMONG POLITEKNIK NILAI STUDENTS

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Abstract

This paper aims to determine the factors that influence the financial status of Polytechnic Nilai students. Finance is the avenue through which student bills are paid. If their finances are not adequate, the situation may tend to affect their academic performance. On the other hand, if their financial needs are adequately met, their academic performance may be enhanced. The financial management problems among students are caused by a lack of financial literacy in managing expenses as well as weaknesses in spending behaviour. This quantitative study was carried out by applying a basic descriptive statistical analysis tool to identify the relationship between financial management practices, spending behaviour and financial constraints on student financial status. A total of 568 students from commerce studies were selected through a simple random sampling technique. The results of the study show that only one of the three independent variables, which is financial management practice, affects students' financial status the most. Therefore, this study is expected to help students manage their financial practices in the future and help the university management develop proper strategies and a financial training program.

Keywords: Financial Management, Financial Constraint, Expenses, Spending Behaviour, Financial Literacy.

ANALYSIS OF USAGE PATTERN CUSTOMER'S SATISFACTION (E-COMPLAINT) TOWARDS MANAGEMENT EFFECTIVENESS AT POLITEKNIK NILAI

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Abstract

Customer satisfaction is a measure of how a product or service provided by an organization can meet the needs or expectations of customers. Unfortunately, awareness of using this platform is still low. The objective of this study is to identify the amount of use of the e-complaint system in a three-year period from 2021 to 2023 by category, analyze the number of complaints by type of complaint, and analyze the pattern of complaint types by gender at Nilai Polytechnic. This study uses quantitative research methods and is in the form of a descriptive study and survey, taking data from the e-complaint system. Part A of this research instrument contains five items that require respondents to provide feedback on their information, including gender, matriculation number, category, department, and program. Part B also contains instruments to measure independent variables, which are eight types of complaints. The results were analyzed using SPSS. Findings show that complaints from students are the highest at 62%, compared to complaints from staff at 21% and the general public at 19%. In addition, the study also shows that the highest type of complaint is about facilities at Nilai Polytechnic, which is 33% compared to other types of complaints. This study aims to guide Nilai Polytechnic management in enhancing operations to produce quality TVET students.

Keywords: Complaints, Management, Services, Staff, Students

DIGITAL TECHNOLOGY AND PUBLIC SECTOR PERFORMANCE: A SYSTEMATIC LITERATURE REVIEW

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Abstract

Public sector activities globally are being reshaped by digital transformation, which is being driven by developments in information and communication technology. Nevertheless, the degree to which these technologies impact the performance of the public sector is still a crucial subject of investigation. The objective of this review is to evaluate the current status of research on digital technology in the public sector. Although digital technologies have become widespread, there is a limited understanding of how they affect the operation of the public sector. This review aims to synthesise these findings to offer a more distinct overview of the advantages and challenges linked to digital technology in the public sector. A comprehensive assessment of the literature was carried out by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). An exhaustive search of scholarly databases, such as Scopus and Web of Science, was conducted to discover pertinent papers published between 2014 to 2024. The inclusion criteria were centred around empirical research that investigated the influence of digital technology on the performance of the public sector. The review identified several prominent themes: (i) digital transformation and public sector efficiency, (ii) digital governance and e-government, and (iii) the impact of digital technology on public sector employees and citizen services. The results emphasise the significant impact that digital technology can have on the public sector while also drawing attention to ongoing difficulties. Effective digital transformation necessitates not just the adoption of technology, but also the implementation of organisational change, the development of capabilities, and the establishment of supportive policies. Future research should prioritise doing longitudinal studies to evaluate the long-term effects, comparing studies in various settings, and investigating the influence of future technologies in the public sector.

A STUDY ON STUDENT ENTREPRENEURIAL COMPETENCIES, ACADEMIC PROGRAMS TOWARDS ENTREPRENEURIAL INCLINATION AT POLITEKNIK NILAI (PNS)

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Abstract

The objective of this study is to identify the entrepreneurial competencies and academic programs of students enrolled in the Department of Commerce (JP) at Politeknik Nilai (PNS), with a focus on their active participation towards entrepreneurial inclination. This research examines the impact of these competencies and programs on students' propensity towards entrepreneurship. The study, which focuses on final semester students in the Department of Commerce at Politeknik Nilai Negeri Sembilan, involves 63 participants. Data were collected using a survey questionnaire and analyzed using descriptive analysis. The findings emphasize the importance of self-competence as a significant factor influencing entrepreneurial inclination. Additionally, the study reveals the impact of academic programs on students' entrepreneurial inclinations. The outcomes are intended to help educational institutions evaluate and improve their teaching and learning activities by incorporating elements of entrepreneurship education into their practices.

Keywords: entrepreneurial competencies, self-competence, entrepreneurial inclination

Research Paper

Education Teaching and Learning

DEVELOPMENT OF A MINI-SIZE PORTABLE COOLING SYSTEM FOR EXTERNAL USE

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Abstract

In response to the increasing demand for efficient and portable cooling solutions, this research focuses on the development of a mini-size portable cooling system specifically designed for external use. The aim is to create a compact, energy-efficient, and user-friendly device capable of providing effective cooling in various outdoor environments. Current portable cooling solutions are often bulky, limited in their cooling capacity, or inefficient in terms of energy consumption. This study addresses these challenges by leveraging advancements in thermoelectric cooling technology, miniaturization techniques, and innovative design principles. The development process involved the selection of lightweight materials and components, the design and assembly of prototypes, and rigorous testing under controlled environmental conditions. The cooling mechanism is based on thermoelectric modules, which offer a balance of efficiency and compactness. Performance metrics such as cooling capacity, energy consumption, and operational runtime were measured and analysed. The results demonstrate that the developed mini-size portable cooling system can achieve a significant cooling effect while maintaining low power consumption. User feedback indicated high satisfaction with the device's usability and effectiveness. This research contributes to the field of portable cooling technology by providing a feasible solution that addresses the limitations of existing systems. Future work will focus on further optimization of the cooling efficiency and exploring additional applications for this technology in both consumer and industrial markets.

Keywords: Mini-size cooling system, user-friendly device, outdoor environments, thermoelectric, the cooling efficiency

DEVELOP AN IMMERSIVE ISLAMIC ETHICS LEARNING EXPERIENCE: AN ADDIE MODEL APPROACH

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Abstract

The use of extended reality (XR) technologies, such as Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR), in education has garnered significant attention in recent years. Educators have highlighted the benefits of XR for learners and the effectiveness of AR and VR technologies in the classroom. However, technological practices are not tailored explicitly for designing and implementing induction activities across diverse learning environments. Additionally, the rapid evolution of educational technologies and pedagogical approaches necessitates continuous evaluation and adaptation of induction strategies to ensure optimal student learning outcomes. This paper focuses on developing the AkhlaqAR application (Augmented Reality Islamic Ethics) using the ADDIE model as an induction strategy for teaching Islamic ethics courses in polytechnics. The research methodology employs the ADDIE model as a systematic framework for analysing, developing, implementing, and evaluating the AkhlaqAR application. Unity Software applications were utilised to create AkhlaqAR, and the study involved seven technology experts from two Universiti Pendidikan Sultan Idris lecturers and five polytechnic lecturers. The assessment of AkhlaqAR covers four key aspects: design, technical functionality, multimedia elements, and interactivity. Using frequency analysis and Statistical Packages for the Social Sciences (SPSS) version 26, the evaluation revealed that AkhlaqAR's design meets the needs of students, teachers, industries, and current market trends. The application proved an effective induction practice, capturing students' interest and motivation through engaging and interactive experiences. Furthermore, using immersive technologies in AkhlaqAR enhanced learning performance, facilitating the acquisition of fundamental knowledge and the application of know-how in Islamic ethics.

Keywords: ADDIE Model, Islamic Ethics, Augmented Reality

UNVEILING THE DYNAMICS OF STUDENTS' ATTENTION: EXPLORING INFLUENTIAL FACTORS IN POLITEKNIK KOTA BHARU CLASSROOM

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Abstract

This research investigates the factors contributing to students losing focus in class within the context of Technical and Vocational Education and Training (TVET) in polytechnic institutions. With the advent of the Polytechnic Transformation 2023–2030, aimed at enhancing TVET graduates' competency, it becomes crucial to understand and address issues hindering students' concentration during teaching and learning sessions. The study employs a quantitative approach through a descriptive survey method, utilizing a questionnaire distributed among 165 students from various departments. Findings reveal several key factors influencing students' attention, including the classroom environment, class timing, sleep patterns, teaching methods, and learning aids. Analysis indicates that an optimal classroom environment, timely meals, adequate sleep, engaging teaching methods, and effective use of teaching aids significantly impact students' concentration levels. The study underscores the importance of addressing these factors to enhance TVET education quality, which is essential for economic growth, individual opportunities, and the nation's development goals.

Keywords: Classroom Environment, Teaching Methods, Sleep Patterns, Learning Aids, Student Concentration

YOUTUBE AS LEARNING MATERIAL FOR RESEARCH COURSES: IMPLICATIONS ON LEARNER SATISFACTION & SUBJECT PERFORMANCE

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Abstract

YouTube is a video-sharing site that allows users to watch and share video clips. Past studies have found that online videos such as YouTube have been widely used in learning in the classroom and are also widely used in courses in addition to podcasts, wikis, and blogs. YouTube is also used to encourage self-learning and is an educational instrument that improves learning innovatively and creatively. However, many educators would prefer to use technology in their teaching strategy. Educators can no longer remain in a comfort zone with traditional teaching methods but instead equip themselves with the latest knowledge and skills. This research explores the influence of system, interaction, and content factors on students' satisfaction with YouTube and their subject performance. Using systematic sampling, the data were collected using a survey approach from the final-year undergraduate students at Universiti Teknologi MARA (UiTM), Negeri Sembilan. The structural equation modeling technique examined the research model based on the final data of 212 undergraduate students. The results indicate that system, interaction, and content factors statistically affect students' satisfaction. On the other hand, system and content factors significantly influence subject performance. The results of this study show that YouTube videos can stimulate creativity, student interest, satisfaction, and motivation. As a consequence, universities must plan and formulate targeted training and development programs for educators to ensure they remain relevant in fast-changing educational settings.

Keywords: YouTube, Learning Satisfaction, Subject Performance, Technology, Quantitative

CULTIVATING A CULTURE OF TRUST: ENHANCING ORGANIZATIONAL ENGAGEMENT IN MALAYSIAN TECHNICAL EDUCATION

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Abstract

Effective leadership in professional teaching and learning within educational institutions depends heavily on trust. Although research has emphasized the crucial role of trust, its complex nature and various dimensions still require further exploration. While institutional leadership has historically received significant attention, the role of middle leaders in nurturing student learning experiences is equally important. In this quantitative study, the researchers seek to determine the levels of trust among teaching staff at Polytechnic Kuching Sarawak, measure their levels of work engagement, and examine the relationship between trust level and workplace engagement. The researchers randomly selected 71 lecturers and collected data through a questionnaire, using instruments adapted from McAllister (1995) and a streamlined version of the UWES Trust Scales (Schaufeli & Bakker, 2003). The research findings demonstrate a significant correlation between trust in middle leaders and the level of engagement among teaching staff in technical educational institutions. Middle leaders who establish and maintain channels of communication play a crucial role in creating an environment conducive to building trust. These conditions are essential for interactive and effective teaching and learning processes, aligning with the broader goals of educational excellence.

Keywords: Trust, middle leaders, engagement.

THE EFFECTIVENESS OF THE GDB COMPILER: ONLINE TOOL FOR STUDENT LEARNING IN PROGRAMMING C++

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Abstract

The concept of debugging is one of the hardest things for students to understand when it comes to the subject of computer programming, particularly in the C++ language. Identifying and correcting errors in lines of code is a complex process that consists not only of knowledge of programming concepts but also of expertise in using special software designed to facilitate the search for errors. Among all of these tools, the GDB compiler is one of the most dependable choices because it helps programmers locate problems in C++ code and correct them. Online education continues to evolve and offers a new and engaging option for aspiring programmers. This study aims to identify the effectiveness of the GDB compiler as an online tool for student learning in Programming C++. A total of 136 students from semester 2 in the Department of Information Technology and Communication at Politeknik Mersing Johor, who are taking the Programming Fundamentals course, were chosen as respondents for the study. The performance of the students in using the GDB compiler as an online tool in Programming C++ was utilized as quantitative data and analysed using the Statistical Package for the Social Sciences (SPSS) by t-Test and one-way ANOVA. This study demonstrates how the GDB compiler may aid in the learning of the C++ programming language while also attempting an assessment and evaluation of its effectiveness in the teaching process. In the initial stages of knowledge development in the field of programming, it is extremely important to teach students how to work with debugging tools because the demand for programmers remains high.

Keywords: GDB Compiler, Online Tool, Programming C++, Student Learning

THE USEFULNESS OF STEPS TO EFFECTIVE PRESENTATION (STEP) FOR BEGINNERS MODULE IN IMPROVING STUDENT PRESENTATION SKILLS AT SARIKEI COMMUNITY COLLEGE

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Abstract

This study aims to identify the usefulness of StEP for Beginners module, which is developed to enhance student presentation skills at Sarikei Community College. The analysis study on the need for StEP for Beginners module shows that students are not confident and have weak body language and vocals during presentations. The respondents of this study consist of 43 students from the first semester at Sarikei Community College. Data collection was conducted using a questionnaire instrument and a presentation rubric. The questionnaire consists of four sections, which include usefulness, ease of use, ease of learning, and user satisfaction. The presentation rubric consists of two components, which include body language and vocal. The questionnaire analysis indicated that the minimum score for the usefulness of this module was at a high level. The researchers also found improvements in student presentation skills based on the data collected using the presentation rubric. The obtained data will be considered for further improvement of StEP for Beginners module.

Keyword: StEP For Beginners Module, Presentation Skills, Usefulness

THE PERCEPTION OF MECHATRONIC ENGINEERING DIPLOMA STUDENTS AT POLYTECHNIC SULTAN AZLAN SHAH TOWARDS THE IMPLEMENTATION OF INTERACTIVE AUGMENTED REALITY (AR) VISUALIZATION FOR AUTONOMOUS VEHICLE ROBOTS

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Abstract

Developing attractive learning experiences that are convenient to use and meet the diverse learning needs of polytechnic students is challenging. However, advances in simulation technologies, such as augmented reality (AR) and virtual reality (VR), enable such alterations. This study aims to investigate the perceptions of Mechatronic Engineering Diploma students at Polytechnic Sultan Azlan Shah towards the implementation of interactive Augmented Reality (AR) visualization for Autonomous Vehicle robots. Therefore, the lecturers at Sultan Azlan Shah Polytechnic have used AR product visualization methods to bring out better learning outcomes through engagement and interactivity. This study used a Likert-scale questionnaire for data collection. Data was collected through an online questionnaire, which was sent to 36 students in the second and fourth semesters of the Mechatronics Engineering Diploma via Google Form in April 2024. All of the participants have completed the questionnaire. Six elements were evaluated: effectiveness, fun, the response of usefulness, satisfaction, individual impact, and continued use. The descriptive analysis found that the continued use element got the highest average value of 4.847, while effectiveness and individual impact got the lowest average of 4.757. This study found that the Mechatronic Engineering Diploma students at PSAS have a positive perception of the use of the use of augmented technology in their teaching and learning processes. It also provides clear information that students believe this augmented technology will be effective and fun to use, and they would likely suggest to lecturers that they continue using AR in the future. This study contributes to the understanding of the effectiveness of using AR technology in the context of teaching and learning among lectures..

Keywords: Student Perception, Augmented Reality, Descriptive Analysis

AN ANALYSIS OF GRAMMATICAL ERRORS IN STUDENTS' WRITTEN ASSIGNMENT: A THOROUGH LOOK AT DIALOGUE WRITING

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Abstract

Producing a piece of writing requires certain skills that someone needs to master. Based on the observation, the students of community college have problems producing written assignments, particularly in dialogue writing, whether in their practice or in graded-continuous assessment. The problems are obvious in terms of their grammatical aspects, such as in terms of the use of articles, spelling, wrong or misused words, and others. The objectives of this research are to (1) identify the grammatical errors in students' written assignments; (2) analyze the grammatical errors in terms of frequencies and percentages; and (3) provide possible recommendations to improve the students' performance in writing. Qualitative and quantitative methods are used in this study. 90 dialogues are collected based on purposive sampling, which covers various courses: Certificate of Information Technology, Certificate of Fashion and Apparel, Certificate of Furniture Design, and Certificate of Building Maintenance. Data analysis is conducted manually by calculating the frequency and percentage. Findings showed that students need to practice more on English writing, refer to models, and practice using English in their everyday lives. Some of the pedagogical implications of this research are to give insights to the curriculum developer as well as students and lecturers about the importance of writing appropriately in assignments and to provide guidance to students about the fundamental grammatical aspects of writing. Future research may focus on the factors that affect students' performance in writing.

Keywords: Writing, Assignment, Grammatical errors, Pedagogical implications

THE DEVELOPMENT OF SWITCHLESS KIT FOR MULTI-LEVEL USERS

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Abstract

This research focuses on the development and use of IoT module sets. The switchless kit innovation is based on the Internet Controlled Switch via smartphone. A rocker switch is commonly used to light an electric bulb. In demand of new technology, IoT (Internet of Things) is a developing technique that is more useful to control or monitor appliances via the internet. Nowadays, many smart home and office appliances are connected to smart switch boxes that enable users to control their appliances anytime and anywhere. The switchless kit innovation is developed to switch on the light through a smartphone interface. The lamp is connected to the WiFi network using an ESP32 microcontroller. Arduino 1.8.19 is implemented in NodeMCU ESP32, and it can be accessed through mobile applications. An electric light controller is designed using a Remote XY based on the NodeMCU ESP32 microcontroller. This system only applies if the condition of the AC voltage originating from the local power supply is ON. The control system is managed using the RemoteXY interface, and the C programming language is used for coding and execution. This tool works on a WiFi connection. This innovation was found to be very efficient, practical, and cost-saving for electricity. This switchless light control system can make it easier for users to cut electricity usage. The IoT module set is being used for training sessions and was found to be very user-friendly for secondary school students, higher education, and trainer training. The IoT technology is being empowered amongst students, and lecturers are aligning with the IR 4.0 revolution by attending training that enables students to apply this technology in their final year projects.

Keywords: IoT, switchless, NodeMCU ESP32

THE EFFECTIVENESS OF IOT LEARNING KIT: IMPROVES THE UNDERSTANDING OF COURSE PARTICIPANTS AMONG DIPLOMA MECHANICAL STUDENTS AND INDUSTRIAL WORKERS

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Abstract

The Internet of Things (IoT) is one of the nine pillars promoting the progress of the Industrial Revolution (IR 4.0). Thus, IoT has become a crucial agenda item in the era of globalization, including in the field of education and across multiple industries. IoT elements have been tremendously applied in higher education syllabuses to produce quality education. However, the rapid development of this technology causes the teaching and learning process for IoT to become more challenging and difficult to deliver. The IoT Learning Kit has been developed to be suitable for different backgrounds of users. This learning kit consists of IoT development hardware and software that help course participants recognize hardware and software, assemble circuits, and write practical programs during teaching and learning sessions. The objective of this paper is to provide an overview of the development and usage of the IoT Learning Kit and to compare feedback findings among IoT Learning Kit course participants between students and industrial workers. This research is a descriptive survey study, and the feedback data analyzed shows that the IoT Learning Kit was found to be very helpful and interesting for both students and industrial workers who need the IoT technology. These analysed data give an excellent reliability analysis value. Compared to other kits, this learning kit is more simple, compact, and customized with minimal cost. Appropriately, this IoT kit was given recognition and awarded a T-AIGS 2024 grant for being a pioneer in empowering IoT technology practically among Polytechnic Nilai Mechanical Engineering students and industrial workers.

Keywords: Industrial Revolution (IR 4.0), IOT Learning Kit, Mechanical Engineering.

FACTORS INFLUENCING RETAIL STUDENT'S PREFERENCE TO PURSUE A DIPLOMA IN RETAIL MANAGEMENT

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Abstract

The objective of this study is to examine the factors influencing retail students' preference to pursue a diploma in retail management at Politeknik Sultan Azlan Shah. A diploma in retail management is designed to provide students with the opportunity to obtain knowledge in a challenging and competitive retail environment. Retail management is one of the areas that plays an important role in the retail industry. Therefore, this study is about the interest of students in pursuing a diploma in retail management, where three factors (external influence, job-related factors, and personal interest) should be considered. Retail students from semester 1 until semester 6 were used as a sample for this study. Data were collected using survey questionnaires distributed to the retail students who have taken the retail management program at Politeknik Sultan Azlan Shah. A total of 100 questionnaires were collected. The results from this study show that factors that influence retail students (external influence and job-related factors) have significant positive impacts on pursuing a diploma in retail management. Besides, personal interests had a negative influence on continuing education in retail management. This study recommended that retail lecturers introduce teaching techniques that may increase and encourage students' interest in pursuing retail management. With this, students' capabilities may improve, and they may be more inspired to pursue retail management.

Keywords: Retail Management, Family Performance, Job-Related Factors and Personal Interest

"TIKTOK ADDICTION AND ITS IMPACT ON ACADEMIC PERFORMANCE AMONG TEENAGERS"

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Abstract

This study aimed to investigate the impact of using the Tiktok app on the academic performance of Polytechnic Sultan Abdul Halim Mu'adzam Shah (POLIMAS). A total of 164 respondents came from the Commerce Department at POLIMAS. Data gathering was carried out using a survey on the use of social media and academic achievement. The data indicates that TikTok is the most preferred social media platform, with a 70.3% favorability rating. Instagram, at 24.4%, was closely followed by YouTube, which had a mere 4.8% representation. On average, users dedicate 34 hours each month to the app. 124 participants, accounting for 75.2%, utilize the app for social purposes, while 12.1% use it for gaming, and 8 individuals, representing 4.8%, use social media for academic reasons. Most survey participants believe that Tiktok moderately affects academics, with an average score of 3.36. Social media was demonstrated to improve students' communication abilities.

Keywords: Tiktok, Academic Performance

COMPACT SOLAR FISH DRYER

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Abstract

There are three methods commonly used for fish drying: sun drying, oven drying, and cabinet-type dryers with controlled heat and air circulation. In the program structure of Sijil Pemprosesan dan Kawalan Mutu Makanan in Kolej Komuniti Pasir Salak, students in semester 1 used a food dehydrator machine in Processing Fish Products and Marine Products subjects. The machine takes 10 to 30 hours to produce dried fish. The machine needs to be in switch-on mode for a long time without monitoring due to the end of the learning session and office hours. Food dehydrator machines are prohibited from operating after office hours and without a monitoring person for safety purposes. The objective of this study is to develop a compact solar fish dryer that can increase drying efficiency, reduce costs, and enhance portability.
This dryer used aluminum as a frame and a clear polycarbonate panel as a cover. It's equipped with a solar-powered fan to assist in the drying process. Data on temperature, air humidity, and airflow are taken throughout the drying period. The weight of the fish before and after drying is calculated to determine the fish recovery rate. The drying time was about 36 hours with a temperature between 35 and 38 degrees. The recovery rate of fish after drying is 75%. Dried fish produced in this compact solar fish dryer is preferred because it is clean and more protected than contamination and safety.

Keywords: Fish Drying; Compact Solar Dryer; Recovery Rate

ENGAGING CULINARY STUDENTS THROUGH GAME-BASED LEARNING: ASSESSING THE CULINARY CONQUEST BOARD GAME

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Abstract

This study evaluates the effectiveness of the Culinary Conquest board game as a tool for enhancing learning outcomes in culinary education. The research involved 60 students from Langkawi Tourism Academy at Kolej Komuniti Langkawi, assessing their knowledge retention, engagement, and motivation before and after using the board game. Using a single-group pre-test and post-test design, students' knowledge was evaluated through tests administered before and after a week-long intervention involving structured game sessions. The pre-test and post-test scores demonstrated a significant improvement, indicating enhanced understanding and retention of culinary concepts. Descriptive statistics revealed high levels of student engagement and satisfaction, with students reporting strong enjoyment, motivation, and practical skill enhancement. The weak correlation between pre-test and post-test scores suggests that the game was particularly effective for students who initially struggled. These findings indicate that the Culinary Conquest board game is a valuable educational tool, significantly improving student performance and engagement in culinary arts education. The study supports the integration of game-based learning into educational curricula to enhance learning outcomes and student involvement. The implications of this research are substantial, suggesting that students benefit from more interactive and engaging learning experiences, while institutions can enhance their educational offerings and improve student satisfaction and performance.

Keywords: Game-Based Learning, Culinary, Education, Board-Game

SELF-DIRECTED LEARNING READINESS AMONG ELECTRICAL ENGINEERING STUDENTS, SULTAN HAJI AHMAD SHAH POLYTECHNIC

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Abstract

The globalization era has presented Malaysia with various challenges. To become a fully developed country, Malaysia needs to improve the quality of world-class education. Self-learning is an important aspect of improving the quality of education in the context of globalization. This study was carried out with the aim of identifying the level of self-learning readiness among second-semester students in the Department of Electrical Engineering at Sultan Haji Ahmad Shah Polytechnic. This study also aims to identify the relationship between the level of self-learning readiness and the results of Grade Point Average (GPA). This study is a survey that uses Guglielmino's Self-Directed Learning Readiness Scale (SDLRS) questionnaire. The results of this study were analyzed using the "Statistical Package for the Social Science" (SPSS) software. The respondents consisted of 38 students in the second semester of Session 2, 2023/2024. The respondents are students of the Diploma in Electrical and Electronics Engineering (DEE) and Computer Electronics Engineering (DTK) programs. The results of the study found that the mean score of self-learning readiness among students in the aspects of self-management, desire to learn, and self-control is at a high level. In addition, the results of the analysis found that there is a significant positive relationship between the level of self-learning readiness of self-management and the desire to learn with GPA. However, the level of self-learning readiness from the aspect of self-control does not have a significant relationship with GPA. Although the level of self-learning readiness is high, it can influence the results of GPA where the higher the level of self-learning readiness, the higher the value of GPA obtained. Therefore, lecturers need to play a role in improving self-learning skills among students who have low GPA.

Keywords: Self-learning , Self-Directed Learning Readiness Scale (SDLRS)

THE DEVELOPMENT OF JAWI TUTOR MOBILE APPLICATION USING KODULAR

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Abstract

The development of Jawi Tutor, an educational game application for children aged 7 to 9, aims to address the challenge of making Jawi script learning engaging and effective. This project transforms the traditionally daunting task of learning Jawi into an enjoyable experience through a game-based approach, fostering a positive attitude towards this script among young learners. Kodular was utilized as the primary development platform due to its user-friendly drag-and-drop interface and robust integration capabilities. Interactive educational games featuring vibrant visuals and stimulating challenges were designed using Kodular. Additionally, Firebase integration provided real-time data management, user authentication, and cloud storage, ensuring a seamless and responsive user experience. The development process demonstrated the application's potential to engage children in learning activities, making the process both educational and entertaining. The interactive nature of Jawi Tutor could enhance children's motivation and retention of Jawi script. Using Kodular to develop Jawi Tutor proves highly effective in creating an accessible and enjoyable learning platform. This project emphasizes the potential of integrating educational content with interactive technology, offering significant implications for educators seeking to enhance their teaching methods and create dynamic learning environments.

Keywords: Kodular App Development, Interactive Learning Tools, Jawi Script

MAKER MARKET USE: CASE SURVEY

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Abstract

Science, Technology, Engineering, and Math Education (STEM) is an interdisciplinary approach that helps students succeed in college and in their future careers. The use of Maker Market by students could enhance their skills in Science, Technology, Engineering and Math (STEM). However, findings from observation show that the level of Maker Market use by students at Temerloh Community College seems to be low. A questionnaire was used for the collection of data, and the study population consisted of 157 students at Temerloh Community College. Data was analysed with the use of frequency counts, percentages, the mean, and the standard deviation. The result of the study demonstrates that among all users, 58.6% male and 41.4% female are aware of Maker Market. It has been found that 42.5% of students understand the variety of things they can create using makerspace facilities. When asked if respondents about either they will build, make, or create more if makerspaces were more available on campus, 39.5% strongly agreed. Approximately 38.2% of respondents indicated that they would attend hands-on workshops to learn new skills, machines, or technologies. Based on the findings, it was recommended that the college's lecturers and staff should use every opportunity they have to encourage the students to use Maker Market in order to enhance their STEM skills.

Keywords: Maker Market, use of Maker Market, maker, education, technology.

PORTABLE SOLAR KIT AS A TEACHING TOOL FOR SEE 10013 COURSE: ELECTRICAL FUNDAMENTALS ELECTRICAL TECHNOLOGY CERTIFICATE PROGRAM.

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Abstract

Photovoltaic is the most effective method of generating electricity by using solar cells to convert energy from sunlight or solar energy into a flow of electrical energy electrons. The use of solar energy as an example of a renewable energy source is the simplest example that can be shown to students during the teaching and learning session of the course, SEE 10013: Fundamentals of Electricity. However, due to high cost constraints, the process of converting solar energy into electricity is difficult to demonstrate to students. Portable solar kit is a teaching tool developed to take advantage of the use of renewable energy, which is sunlight, to meet the needs of the teaching and learning process for students. A set of questionnaires was used as a research instrument to determine the effectiveness and suitability of the portable solar kit being used as a teaching aid for SEE 10013: Electrical Fundamentals of the Certificate of Electrical Technology at Kuantan Community College. During the implementation phase, a total of 27 students from semester 1, session 2, 2023/2024 have been chosen as the sample for this study. The results of the study show that the overall mean score is 4.12, with a high level of tendency. Based on the findings of the study, it can be concluded that the portable solar kit is suitable as a teaching aid for the topic of sources and generation of electricity, especially to explain renewable energy.

Keywords: Teaching tool, renewable energy, portable solar kit

THE IMPACT OF ENTREPRENEURSHIP INCUBATORS ON SHAPING STUDENTS' CAREER CHOICES TOWARDS ENTREPRENEURSHIP

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Abstract

This quantitative study examines the impacts of entrepreneurship incubator programs on the career preferences of 50 students from commerce and engineering disciplines who have completed apprenticeship training within these programs. Through the analysis of survey data, the research investigates the extent to which entrepreneurship incubators influence participants' perceptions, skills development, and inclination toward entrepreneurship. The research identifies key factors within entrepreneurship incubators, such as mentorship, experiential learning opportunities, and networking activities, that contribute significantly to shaping students' entrepreneurial aspirations. This research contributes valuable insights into the efficacy of entrepreneurship incubator programs in fostering an entrepreneurial mindset among students within commerce and engineering fields. The findings emphasize the importance of experiential learning and mentorship in shaping entrepreneurial intentions and underscore the potential of such initiatives to cultivate a culture of innovation and entrepreneurship within academic institutions. The study's quantitative approach provides empirical evidence of the impact of entrepreneurship incubators on students' career choices, offering valuable implications for policymakers, educators, and practitioners seeking to enhance entrepreneurship education and support strategies.

Keywords: Entrepreneurship Incubator, Mentorship, Experiential Learning.

STUDENTS' LEVEL OF SKILLS, UNDERSTANDING, AND INTEREST THROUGH AN INNOVATIVE PRODUCT DEVELOPMENT WORKSHOP AS A LIFELONG LEARNING PROGRAMME

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Abstract

The Lifelong Learning Unit, PMM held an Innovative Product Development Workshop where the content consisted of the techniques of designing, coding, assembling, and testing remote-controlled ESP32 robots. Respondents were also trained to select and use appropriate materials, tools, and techniques in designing and making innovative products. 100 participants took part in the study consisting of semester 2 students, 60 male students, and 40 females from the Department of Electrical Engineering, Politeknik Merlimau, Melaka (PMM). The questionnaire instrument used a Likert scale with five levels. 3 aspects of the research construct, namely skills, understanding, and interest, consist of 7,5 and 5 items each. Statistical Package for Social Science (SPSS) Version 25 was used to extract data from questionnaires descriptively. The mean score interpretation showed all items in the skill section between 4.33 to 4.78, the understanding section (4.29 to 4.41), and the interest section (4.15 to 4.31), are at a high level. This mean score shows the skills are at a high level, understanding, and interest that are interrelated and help student achievement in product development. Overall, the Innovative Product Development Workshop can increase students' skills, understanding, and interest in innovation, which ultimately supports their lifelong learning.

Keywords: Product Development Workshop, Life Long Learning, Arduino Course

STAKEHOLDER PERSPECTIVES ON THE EFFECTIVENESS OF INDUSTRY ENGAGEMENT IN REFINING IT FINAL YEAR PROJECT TITLES

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Abstract

This study examines stakeholder perspectives on the effectiveness of industry engagement sessions within Final Year Project (FYP) programs for Diploma in Information Technology students. These sessions aimed to refine FYP titles and foster broader interaction between students and industry professionals in tracks such as Software and Application Development, Information Security, and Networking Systems. Participants – students, supervisors, and industry panel members – rated various aspects of these sessions using a Likert scale. The research explores how these sessions contribute to enhanced FYP ideas, industry collaboration, and graduate employability. Descriptive statistical analysis revealed generally high stakeholder satisfaction, with industry panel members unanimously endorsing the sessions' benefits. Students reported significant improvements in project development and understanding of marketability. While acknowledging potential workload increases, supervisors recognized the value of the sessions. This research emphasizes the importance of stakeholder collaboration in optimizing FYP outcomes and proposes directions for future improvements and research.

Keywords: Final Year Project (FYP), industry engagement sessions, student-industry interaction, stakeholder perceptions, FYP Title.

"ESP NEEDS ANALYSIS OF CORPORATE COMMUNICATION UNIT BUKIT AMAN (RMP)"

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Abstract

This study intends to assess the English language needs of the Corporate Communication Unit (CCU) at Bukit Aman in relation to their job responsibilities. Four research questions are addressed in this study mainly to discover the proficiency and motivation level of English literacy among CCU officers, the language skills required, difficulties in using English, and suitable ESP activities that will encourage English usage among CCU police officers. This study uses a quantitative approach and employs a survey research design that is distributed among 26 police officers of the Corporate Communication Unit (CCU) in Bukit Aman, Kuala Lumpur. The findings displayed that (1) most of them rated speaking and writing skills and other sub-skills like grammar and vocabulary are their weakest points and the highest motivational factor of learning English is because it will assist in their job performance effectively (2) speaking and writing skill are the most required skills (3) prominent difficulties aspects are in mastering speaking and writing in English (4) suitable activities based on Communicative Language Teaching or CLT were suggested. The results of this study will give a brief insight to scholars and instructors in preparing English language courses for police officers in Malaysia.

Keywords: ESP, Needs Analysis, ESP For Police Officers

THE USE OF PUBLIC SPEAKING PROGRAMS (OUT-OF-CLASS ACTIVITIES) TO IMPROVE POLYTECHNIC STUDENTS' SPEAKING SKILLS

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Abstract

English language nowadays is a global language, and it has become a compulsory subject in every school, polytechnic, and other educational institution. In Polytechnic, English subject is a must-pass subject for students to graduate. Honestly, for some students, English is not their favourite subject, so it is not strange when some students show a lack of interest in the English language because of their perception that English is difficult to learn and that it is not the main language in Malaysia. To help students master the language, English teachers/lecturers need to be equipped with sufficient knowledge and skills to teach in school. Empowering English is normally related to classroom learning but we do need to remember that learning English is sometimes also a process beyond classroom learning. This study aimed to discover the use of public speaking programmes would have on Polytechnic students' speaking skills. The quantitative data were collected from the quasi-experimental study (n=100). The data were collected using a set of questionnaires, and a pre and post-test. The data from the questionnaires were analysed using descriptive statistics (percentages and means). This study was conducted on 100 students, where 50 students were the experimental group that joined the programmes while the remaining 50 students did not join the programmes. The findings of the study indicated that there was a significant difference in students' speaking performance after joining these programmes as it helped the students to use English to speak. In conclusion, some ideas have been made to encourage student's participation to join these programmes.

Keywords: Public Speaking, Speaking, English

DEVELOPING A MOBILE-ASSISTED LANGUAGE LEARNING (MALL) APPLICATION TO SCAFFOLD ESL STUDENTS' SPEAKING SKILLS IN UNSUPPORTIVE ENVIRONMENTS.

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Abstract

Employers consistently stress the significance of English proficiency and communication skills as vital employability factors. Nonetheless, within our specific ESL contexts, students frequently exhibit reluctance and hesitancy in speaking English, potentially impacting their academic performance and future career opportunities. Our previous research has identified that students are mindful of the importance of using English both in and out of the classroom to enhance their speaking skills. However, they face challenges from unsupportive environments, which affect their motivation, impede learning progress, and influence their future job prospects. Current studies advocate for adopting a mobile-assisted language learning (MALL) approach. In response, our team has created the "CE2 Speaking Buddy" mobile app, aligned with the course syllabus, to provide a platform for students to practice speaking skills anytime, anywhere. We utilised Thunkable software, following the System Development Life Cycle (SDLC) prototyping approach, involving four phases: analysing user requirements, developing the prototype, conducting user testing and feedback, and revising the product. Throughout the development process, we gathered the necessary data qualitatively, primarily using open-ended questions and supported by semi-structured interviews. Data was analysed using a thematic analysis approach. The findings revealed a positive reception of the app, with students as users acknowledging its user-friendliness, convenience, and, importantly, effectiveness in improving language skills. However, their suggestions for enhancing app features highlighted challenges such as the time and cost associated with developing apps for different operating systems and the need for consistent updates and support. Therefore, we recommend funding for further research and innovation in this area.

Keywords: Mobile-assisted Language Learning (MALL), System Development Life Cycle (SDLC), ESL, TVET English, Communicative English.

A STUDY AT COMMUNITY COLLEGES: STUDENTS' ATTITUDES TOWARDS INSTITUTIONAL ENTREPRENEURSHIP PROGRAMS

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Abstract

In response to the ever-evolving job market and the increasing need for graduates to be equipped with entrepreneurial skills, educational institutions have been implementing entrepreneurship programs. These programs aim to foster students' interest in entrepreneurship, equip them with relevant skills, and help them identify potential business opportunities. Entrepreneurship is seen as a career path and also as an alternative for graduates to find income. This is because graduates nowadays have to compete for jobs. In order to educate students to be interested in entrepreneurship, institutions need to promote entrepreneurship through various entrepreneurship programs. Entrepreneurship has become a very important program to educate students to find ideas and recognize any business opportunities. Today there are many entrepreneurship programs on campus, but do students benefit from this program? Do students have a positive attitude towards the program? Therefore, to answer these questions, this study was conducted to identify students' attitudes towards the institution's entrepreneurship program. The selected study sample was the students of Kolej Komuniti Kuala Langat Cawangan Sepang, Kolej Komuniti Kuala Langat, Kolej Komuniti Jasin and Kolej Komuniti Pasir Mas. The instrument used to obtain data is a 5-point Likert scale questionnaire distributed online. The sampling technique used is random sampling. The study data were analysed using descriptive analysis. The research data will be analysed using SPSS software. SPSS (Statistical Package for the Social Sciences) is a software package used for statistical analysis in various fields, including social sciences, business, health sciences, and market research. The results of the study found that the majority of students have a positive attitude towards entrepreneurship. Students found that through the entrepreneurship program, students' skills, knowledge, and interest in entrepreneurship improved. This study is important to evaluate all forms of entrepreneurship programs that are relevant, interesting, and suitable for the age level of students in order to attract interest in entrepreneurship. As a conclusion, the findings of this study shed light on the attitudes of students towards institutional entrepreneurship programs in community colleges. Despite the competitive job market, the majority of students exhibit a positive attitude towards entrepreneurship programs, recognizing their role in enhancing skills, knowledge, and interest in entrepreneurial ventures. These results underscore the importance of designing and implementing relevant and engaging entrepreneurship programs tailored to students' needs and interests.

Keywords: Attitudes; Entrepreneurship Program; Student Kolej Komuniti

ANALYSIS ON MALAYSIAN POLYTECHNIC STUDENTS SUCCESSFUL COMMISSIONED RELASIS BRIGADE CO-CURRICULUM CREDIT COURSES TOWARDS PRODUCING QUALITY TVET GRADUATES

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Abstract

Credit co-curriculum is one of the requirements that all polytechnic students must take in order to qualify a student to be awarded a polytechnic diploma. This credit co-curriculum is divided into two parts, namely the Uniformed Body credit co-curriculum and the Sports, Club and Association credit co-curriculum. This study was conducted to analyse Malaysian polytechnic students that successfully commissioned RELASIS Brigade co-curriculum credit courses. The objective is to identify the number of Polytechnic students enrol for the RELASIS Brigade course from year 2021 until 2023 and to analyse the trend of students that successfully commissioned for the RELASIS. The methodology used in this study is a quantitative survey data obtained from the student Information Management System (SPMP) developed under the item 'i-KOKO'. The findings obtained from the study found that the percentage of students who chose the RELASIS Brigade co-curriculum was very low when compared to students who registered for the first semester. There are only 39% of the 23 Malaysian Polytechnics that offer the RELASIS Brigade have first semester students who choose the RELASIS Brigade co-curriculum compared to 61% of the number of polytechnics that enrol in the RELASIS Brigade. The number of students who successfully completed the RELASIS Brigade co-curriculum up to the certification level was reduced compared to 75% of the number who registered for the co-curriculum in the first semester. The results of this study can help the Department of Polytechnic Education and the Community College and Volunteer Department of Malaysia (RELA) formulate a strategy to increase the number of RELASIS Brigade credit co-curriculum membership and attract polytechnic students to join the RELASIS Brigade. The RELASIS Brigade credit co-curriculum syllabus also needs to be improved by applying elements that are a favorite of today's students.

Keywords: Co-Curriculum, Credit, RELASIS Brigade, Students

A CASE STUDY: ASSESSING THE IMPACT OF ACADEMIC ADVISORY SYSTEM (SPAK) ON STUDENT SATISFACTION AT NILAI POLYTECHNIC

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Abstract

Academic Advisory System (SPAk) acts as an approach towards the formation of students who are knowledgeable, responsible, capable and competitive in forming students with superior qualities. This study aims to identify the effectiveness of the Academic Advisory System (SPAk) towards Polytechnic Nilai (PNS) students for academic session 1 2023/2024. PNS is using the Polytechnic Information Management System (SPMP) as a tool of gathering the information throughout the Polytechnic Malaysia. One of the interface menus at SPMP is about Academic Advisor (iPAD) that gathers all the report, students' information and feedback from other lecturers for easy access and monitoring. This study uses a quantitative approach which applies a questionnaire instrument to identify the effectiveness of SPAk. The respondents consist of students from semester 1 to semester 5 for Academic session 1 2023 2024 for three main departments at Nilai Polytechnic which is a total of 1043 students in the Department of Commerce (JP), 351 students in the Department of Mechanical Engineering (JKM) and 567 students in the Department of Biotechnology and Landscape (JAB). Based on findings, Students are chosen face to face as their meeting or communication method with their PA as compared to online meetings and phone calls. The finding indicates an average total value for mean score range is 3.69 at excellent satisfactory level for overall evaluation of Academic Advisor and Academic Advisory System. This data highlights the significance of PA in determining the efficiency and effectiveness of SPAk. This is due to a positive relationship between lecturer (PA) and students.

Keywords: Academic Advisory System (SPAk), Academic Advisor (PA), Effectiveness, Satisfaction Level

THE EFFECT OF *VITIS VINIFERA* 'JUPITER GRAPE' SWEETNESS RATE BASED ON FERTILIZER USE

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Abstract

This study aims to see the influence of fertilizer use on the level of sweetness of Vitis Vinifera 'Jupiter grapes' by measuring the Brix level of the fruit. This study was conducted in a rainproof house at Nilai Polytechnic Negeri Sembilan. In addition, this study was also carried out on Jupiter variety vines that have reached fruiting maturity. This experiment was carried out by comparing 3 types of fertilizers, namely NPK Blue 12:12:17 chemical fertilizers, AB solution fertilizers and organic fertilizers. This fertilizer is used in the early stages before pruning, bud opening, and fruit formation up to the harvest stage according to the tree plot. The Brix level of sweetness is measured at the time of fruit maturity (70 days after pruning) until harvest (100 days after pruning) using a refractometer. The reading results showed that all fertilizer treatments significantly increased Brix levels. AB solution liquid fertilizer produced the highest Brix level, closely followed by NPK Blue 12:12:17 chemical fertilizer and organic fertilizer. This study concluded that the use of AB solution liquid fertilizers can increase the sweetness of Jupiter grapes compared to NPK and organic chemical fertilizers. In addition, the quality of the fruit also will be improved with the application of this AB solution fertilizer.

STUDY OF EFFECTS BETWEEN USING FOOD WASTE AND CHEMICAL FERTILIZER FOR BRASSICA RAPA CHINENSIS 'PAK CHOY'

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Abstract

This study examines the effect of using food waste compost and chemical fertilizers on the growth of Brassica Rapa Chinensis 'Pak choy'. This study was conducted in a green house at Nilai Polytechnic Negeri Sembilan for 30 days. The experiment was conducted under controlled conditions with three treatment groups: food waste compost, chemical fertilizers, and control without additional fertilization. The main parameters taken are, including plant height, number of leaves and weight after harvest. The results showed that plants treated with food waste compost showed a significant increase in growth and yield compared to the control group. In terms of number of leaves and height of mustard plants treated with food waste compost showed better growth than other control media. In addition, the weight of pak choy results shows that the use of food compost waste media has a high weight rate compared to other media. These findings show that food waste compost can be an effective and environmentally friendly alternative to chemical fertilizers for the cultivation of Brassica Rapa Chinensis. In addition, the findings of this study can reduce the cost of growing vegetables, especially in cities and also can reduce food waste, especially in big cities.

Key Word: Food Waste , Fertilizer, Pak Choy, Growth

Research Paper
Engineering and Technology

INTEGRATION OF ARTIFICIAL INTELLIGENCE IN EDUCATION: STRATEGIES, IMPLEMENTATION CHALLENGES, AND IMPACT ON LEARNING OUTCOMES

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Abstract

This research paper explores the integration of artificial intelligence (AI) in education, examining the strategies for implementation, the challenges encountered, and the impact on learning outcomes. Through a comprehensive review of literature, case studies, and empirical evidence, the study investigates the various applications of AI in educational settings, including personalized learning, adaptive assessment, intelligent tutoring systems, and educational data analytics. It also analyses the implications of AI integration for educators, students, and educational institutions, offering insights into effective practices and future directions for AI-enabled education and learning practices.

THE SUDY OF LAND SURFACE TEMPERATURE IN KULIM HI-TECH USING LANDSAT OLI 8

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Abstract

Geospatial technology is the integration of remote sensing, Geographic Information Systems (GIS), and Global Positioning System (GPS) that is highly beneficial for environmental studies. This research analyzed the relationship between land use and land cover (LULC) changes and land surface temperature (LST) in the Kulim Hi-Tech area using multispectral and multitemporal satellite imagery. Landsat 8-9 OLI satellite images for the years 2014 and 2023 were obtained from the US Geological Survey (USGS). The spectral radiance model was used to extract LST from Landsat 8-9 OLI data. The "Supervised Classification" method was employed to classify pixels in the Kulim Hi-Tech image. This method involves analyst intervention based on knowledge of the Kulim Hi-Tech area. Subsequently, accuracy assessment and change detection were performed to compare the classification with ground truth and analyze how the area has changed over time. The revealed results further validate the relationship between land surface temperature and land cover. The result showed that there is a significant relationship between land use change and land surface temperature.

BORON CONTENT ANALYSIS IN BLEACHED CIGARETTE STUB WASTE USING FOURIER TRANSFORM INFRARED SPECTROSCOPY (FTIR) AND ENERGY DISPERSIVE X-RAY (EDX)

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Abstract

The high prevalence of smoking in Malaysia, particularly among men and adolescents, poses environmental concerns due to the toxic residues in cigarette stubs, including hazardous elements like boron or boric acid, which persist in the environment for extended periods. Therefore, this element could affect the water source and soil, eventually affecting human health. To reduce the effect of this element, a bleaching process is recommended. A mixture of Sodium hypochlorite, hydrogen peroxide, and sodium hydrosulphite with a ratio of 1:1 (chemical: water) was used in the bleaching process with sample preparation, followed by analysis using Fourier Transform Infrared Spectroscopy (FTIR) and Energy Dispersive X-Ray (EDX). FTIR analysis showed that the peaks are nearly similar for all seven types of sample data those taken 30 minutes post-bleaching, 60 minutes post-bleaching, 90 minutes post-bleaching, 120 minutes post-bleaching, 150 minutes post-bleaching as well as those taken 180 minutes post-bleaching and from already used or smoked materials, and no significant differences were observed, in contrast to what was seen in the EDX analysis. The provided data from EDX indicated that the percentage of boron decreased from 11% to 6% for the sample 90 minutes post-bleaching. The research on the chemical composition of cigarette stub waste, particularly focusing on boron, is of great significance due to its potential impact on the environment and human health. The study investigated the concentration levels of boron in cigarette stub waste, which could help in developing better waste management strategies to protect the environment.

Keywords: Boron Concentration, Cigarette Stub Waste, Waste Management Strategies

INVESTIGATION OF NOISE EMISSION LEVEL ALONG KTM KAJANG RAILWAY TRACK TO KAJANG CITY SURROUNDING RESIDENTIAL

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Abstract

This study delves into the pervasive issue of noise pollution, particularly stemming from transportation vehicles like trains, which significantly impacts the quality of life for nearby communities. The aim is to assess the noise levels along the KTM Kajang railway track and its implications for community health. Utilizing Sound Level Meters, the research measures noise emissions and evaluates the satisfaction of surrounding communities, namely SK Convent Kajang and Taman Pinggiran Kajang in Selangor. The methodology encompasses a multifaceted approach, including data collection from previous studies, onsite noise measurements using the Cirrus Optimus model CR:171A Sound Level Meter, comparison with noise guidelines set forth by the Department of Environment Malaysia, questionnaire dissemination, and statistical analysis using SPSS version 26. Comparative analysis reveals slight deviations in noise readings from guidelines for Noise Sensitive Areas, Low Density, and Suburban Residential Areas, but a notable discrepancy of 12.9dBA for Urban Residence areas, indicating a significant exceedance of noise limits, particularly affecting Taman Pinggiran residents. The findings underscore the adverse impact of train-induced noise on community health, necessitating mitigation measures for improved living conditions. Recommendations include regular noise level monitoring by railway operators, maintenance of train mechanical components, and strategic planning to prevent railway construction in densely populated locales. In conclusion, the study highlights the urgency of addressing excessive noise pollution from trains to safeguard community well-being and advocates for proactive measures to mitigate noise levels and enhance residents' quality of life.

Keywords: Noise Pollution, Train Emissions, Community Health

INFLUENCE OF DIFFERENT DRYING METHODS ON ANTHOCYANINS COMPOSITION AND ANTIOXIDANT ACTIVITIES OF MANGOSTEEN (GARCINIA MANGOSTANA L.) PERICARPS AND LC-MS ANALYSIS OF THE ACTIVE EXTRACT

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Abstract

Mangosteen pericarps (MP) often end up as agricultural waste despite being rich in powerful natural antioxidants such as anthocyanins and xanthones. This study compared the effect of different drying processes and times on phenolic compounds and antioxidant activities of MP. Fresh MP were subjected to 36 and 48 h of freeze-drying (−44 ± 1°C) and oven drying (45 ± 1°C), and 30 and 40 h of sun-drying (31 ± 3°C). The samples were analyzed for anthocyanin composition, total phenolic content (TPC), total flavonoid content (TFC), antioxidant activities, and color characteristics. Analysis of liquid chromatography-mass spectrometry (LC-MS) with electrospray ionization identified two anthocyanins in MP: cyanidin-3-O- sophoroside and cyanidin-3-O-glucoside. Overall, the drying process, time, and their interactions significantly ($p < 0.05$) influenced the phenolic compounds, antioxidant activities, and color in MP extracts. Both freeze-drying after 36 h (FD36) and 48 h (FD48) possessed significantly ($p < 0.05$) higher total anthocyanins (2.10−2.20 mg/g) than other samples. However, FD36 was associated with significantly ($p < 0.05$) higher TPC (~94.05 mg GAE/g), TFC (~621.00 mg CE/g), and reducing power (~1154.50 µmol TE/g) compared to FD48. Moreover, FD36 is more efficient for industrial applications due to less time and energy consumption. Subsequently, obtained dried MP extracts could be further utilized as an alternative to synthetic food colorants.

Keywords: Mangosteen Pericarps, Freeze-drying, Oven-drying, Sun-drying, Anthocyanins

PROGRAMMES EDUCATIONAL OBJECTIVES (PEO) ATTAINMENT FOR DIPLOMA IN ELECTRONIC ENGINEERING (COMMUNICATION) AT POLITEKNIK SULTAN SALAHUDDIN ABDUL AZIZ SHAH

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Abstract

The educational institution's success is measured by academic performance and the quality of graduates produced. All engineering diploma programs follow the requirements of the Engineering Technology Accreditation Council (ETAC) on behalf of the Board of Engineers Malaysia (BEM). The Program's Educational Objectives (PEOs) describe the expected achievements of graduates in their career and professional life within three to five years after graduation. Criteria of good PEOs are defined as distinctive, specific, measurable, achievable, result-oriented, and having a time frame. A diploma in Electronic Engineering (Communication) is offered at the Department of Electrical Engineering at Polytechnic Sultan Salahuddin Abdul Aziz Shah. The study's subject is addressed using dichotomous questions to get information about the graduates' engineering work, professional ethics, entrepreneurial endeavors utilizing technical skills, and successful career progression. The programs' objectives should produce balanced TVET graduates set across four PEOs. The Curriculum Division of the Electrical Engineering Department of Polytechnic and Community College Education prepared the survey. The data analyzed consists of target respondents of graduates from the years 2017 and 2018 of the Department of Electrical Engineering at Polytechnic Sultan Salahuddin Abdul Aziz Shah. All PEOs have achieved their objectives, according to the analysis, despite the target and average values differing higher than targeted achievement for both cohorts.

Keyword: Programme Educational Objectives; OBE; TVET graduates

INNOVATION IN A SUSTAINABLE SYNTHESIS OF REDUCED GRAPHENE OXIDE USING BANANA PEEL EXTRACT FOR ENHANCED PHYSICOCHEMICAL PROPERTIES

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Abstract

The common synthesis approach of reduced graphene oxide (rGO) using toxic reducing agents poses a threat to environmental pollution. In this study, the synthesis of rGO was conducted using banana peel extract as a green reducing agent. Ultrasonication was assimilated to expedite the synthesis process. For comparison, rGO was also produced by reducing GO with hydrazine treatment under conventional stirring. Both morphological and physicochemical studies have revealed that banana peel extract can reduce GO to rGO, although its reducing effect is weaker compared to hydrazine. Despite that, the rGO produced using banana peel extract through the assimilation of ultrasonication technique has a greater interlayer spacing than those formed under the conventional stirring method. In terms of electrical properties, the electrical conductance of hydrazine-produced rGO (5.69 × 10-6 S) is higher than the banana peel extract-produced rGO (3.55 × 10-6 S - 4.56 × 10-6 S). Interestingly, it was found that most of the rGO produced by banana peel extract under ultrasound assistance has higher electrical conductance than the rGO produced by banana peel extract under the stirring method. This result implies the feasibility of using short-period ultrasound techniques to replace conventional stirring methods in rGO synthesis.

Keywords: Electrical Properties; Fruit Extract; Graphene; Green Synthesis; Ultrasound Technique

RASPBERRY PI WLAN CAST AS A TEACHING AND LEARNING AID IN LECTURE HALLS

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Abstract

In large lecture halls, the visibility of the front screen can be a significant issue for many students. This study introduces a device named Raspberry Pi 3, which enhances screen sharing from the presenter to users' personal devices, such as smartphones or laptops, using a wireless network connection. By connecting the Raspberry Pi 3 to the network, the presenter can initiate the screen-sharing process, allowing users to view the presenter's screen display on their devices, no matter their location in the hall. Additionally, the presenter can share files and presentation slides directly with users. Our findings show that this technology greatly improves visibility for students seated far from the front, ensuring they can clearly see the presentation. The study underscores the practicality of Raspberry Pi 3 in educational settings, offering a scalable solution that leverages appropriate programming languages to facilitate large-scale presentations and enhance student engagement.

Keywords: Raspberry Pi 3, Screen Sharing, Large Lecture Halls, Wireless Network.

REMOTE LAB: AN ENHANCEMENT IN TECHNICAL AND VOCATIONAL EDUCATION TRAINING (TVET)

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Abstract

In the dynamic landscape of technical and vocational education training (TVET), the integration of remote laboratories stands as a transformative advancement, addressing challenges in traditional hands-on training methods. This scoping review explores the multifaceted dimensions of remote labs, offering virtual access to practical experiences and simulations, thereby reshaping the educational paradigm. This scoping review aims to comprehensively examine the impact of remote labs on TVET. It seeks to analyse existing literature to discern the effectiveness, challenges, and potential advancements in integrating remote labs, providing insights for educators, policymakers, and researchers. To achieve the research objective, a systematic literature review will be conducted using the Scopus database. Keyword searches will focus on topics related to "remote labs," "IoT in education," and "technical and vocational education." The inclusion criteria will prioritize studies published within the last five years to ensure relevance and currency. The review will summarize recent studies exploring the integration of Internet of Things (IoT) in remote labs for technical and vocational education, highlighting technological advancements and pedagogical implications. A critical analysis of the literature will identify prevalent issues and challenges associated with the implementation of remote labs, such as technical limitations, accessibility concerns, and pedagogical considerations. The scoping review will provide insights into potential avenues for future research and offer recommendations to address identified challenges, fostering continuous improvement and innovation in remote lab integration for TVET. In conclusion, this scoping review emphasizes the transformative role of remote labs in enhancing TVET. The findings underscore the need for addressing challenges and optimizing the integration of remote labs, with recommendations for future research focusing on refining pedagogical strategies, improving technological infrastructure, and ensuring inclusivity in remote learning environments.

Keywords: Remote lab, Internet of Things (IoT), TVET

SWELLING AND SOLUBILITY PROPERTIES OF RICE FLOUR AND STARCH FROM MALAYSIAN RICE CULTIVARS

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Abstract

Starch consists of amylose and amylopectin polysaccharides that vary in different rice varieties. The development of new rice varieties has presented the need for characterization to determine their applications. This study aims to determine the swelling and solubility properties of rice flours and starches from two Malaysian varieties, UPM Putra 2 (P2) and NMR 152 (NMR). P2 and NMR rice grains were processed to form flour, and the rice starch was isolated from the rice flour using acid-base isolation and centrifugation. Both flours and starches were analysed for swelling and solubility properties with commercial white rice (JM) as control. Among rice starch samples, JMS had the lowest swelling power, which coincides with the results for rice flour samples. The swelling power was also significantly higher ($P<0.05$) in starch than their respective flours for all rice varieties. For solubility, the results in this experiment showed no significant differences ($P>0.05$) between all rice flour and starch samples regardless of the varieties, even though P2 and NMR contain different amylose content (23.1%) and NMR (23.4%) and were categorized as medium-amylose starches, while JM (26.6%) was high-amylose starch. In conclusion, the characterization of these rice and starch on swelling and solubility properties will support their techno-functional properties for further processing in various other food products such as noodles. This study provides an insight into the potential applications in the food industry and commercialization of new Malaysian rice varieties which have comparable functionalities to the commercial rice sample.

Keywords: NMR rice starch, Putra 2 rice starch, solubility, swelling, thermal properties

EVALUATION OF PEDESTRIAN WALKWAYS QUALITY AT POLISAS CAMPUS USING P-INDEX AND PLOS METHODS

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Abstract

The P-Index and Pedestrian Level of Service (PLOS) methods were employed to analyse and assess the suitability of pedestrian walkways for users, subsequently interpreted through a star rating system. The star rating is crucial in determining the quality and reliability of pedestrian infrastructure. This research aims to provide an in-depth understanding of the conditions, comfort, and safety of pedestrian walkways within the campus. Identified issues with the pedestrian walkways at Politeknik Sultan Haji Ahmad Shah (POLISAS) include narrow walkways, uneven surfaces, lack of street lighting, and insufficient shelter, leading students to prefer roadway routes. The study has three objectives: to assess the performance of pedestrian pathway facilities, to determine the star rating using the P-Index, and to establish the PLOS of the pedestrian facilities. A quantitative approach was utilised with the P-Index and PLOS methods, calculated through a formula involving four indicators: Mobility (M), Safety (S), Pedestrian Facilities (F), and Accessibility (A). Data were collected manually and analysed using statistical analysis methods. The findings indicate that the P-Index value for all 11 pedestrian walkways is 1 star, while the PLOS rating is PLOS A, indicating that the pedestrian facilities are underutilised due to several factors, including poor performance, lack of safety, and inadequate usability.

Keyword: P-Index, Pedestrian Level of Service (PLOS), Pedestrian

PLC-BASED AUTOMATIC MINI CONVEYOR CONTROL SYSTEM TRAINER PROTOTYPE DESIGN DEVELOPMENT

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Abstract

Proficiency in automatic conveyor control systems and Programmable Logic Controller (PLC) programming is essential for students, especially in Electrical Engineering. This expertise is extensively taught in higher education institutions, including polytechnics in Malaysia, which focuses on technical and vocational education (TVET). Recognizing the importance of hands-on experience among students, universities emphasize practical exposure to PLC controllers in automation systems. To enhance student understanding, concerted efforts are made to develop mini conveyor trainer kits with integrated monitoring systems for student performance assessment, offering an interactive learning experience. Various research projects design PLC-based Automatic Mini Conveyor Control Systems as an educational tool, both in hardware of simulation methods. However, some polytechnics still lack adequate training facilities that meet the syllabus requirement for effectively demonstrating PLC applications in conveyor control systems. To bridge this gap, this research focuses on designing a 24VDC supply PLC-based Automatic Mini Conveyor Control System Prototype as an educational tool that emphasizes hands-on experience. This design enables students to implement PLC program designs directly using CX-Programmer software, enhancing their interest and comprehension in PLC and automation courses. The design will utilize an OMRON PLC as the primary control device, driving the mini conveyor with a DC motor. Additional components include inductive and capacitive proximity sensors and reed switch as inputs and a pneumatic cylinder as the output for the sorting system. Overall, the fully automated mini conveyor system is successfully designed for educational purposes, facilitating practical implementation in the learning process and delivering satisfactory outcomes.

Keywords: Automatic Mini Conveyor System Trainer, Programmable Logic Controller (PLC), Conveyor Control System

THE IMPACT OF INTERSECTION DESIGN ON TRAFFIC VOLUME AND ROAD SERVICE LEVEL

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Abstract

The development of a city towards a developed country is a contributor to the increase in traffic flow. The design of the intersection on Jalan Bukit Ubi has an impact on the service level of the road. This study is to determine the impact of changes in the intersection design at Jalan Bukit Ubi on the volume of traffic and the level of service on the road. The method used to determine the objective of the study is the Traffic Volume Study and the Level of Service (LOS) method. The result of the Traffic volume study is that the volume of vehicles obtained after changing the intersection design for peak hours is a reduction of almost 50% from the original volume. The study shows the findings from the determination of the Level of Service after changes to the design of the intersection at Jalan Bukit Ubi is at Level of Service A, which is at the value of the saturation degree of the intersection 0.27 where the LOS value before was level F with a degree of saturation of 1.02. This research shows that road planning and design play an important role in ensuring a better traffic management system and have a huge impact in ensuring the smoothness of the traffic system in a city.

Keywords: Level of Service, Traffic Volume Study, Intersection, Peak Hour, Saturation Degree.

COMPARATIVE ANALYSIS OF CHARCOAL AND BANANA STEM FIBER FILTERS IN FAT, OIL, AND GREASE TRAPS: A CHEMICAL PARAMETER EVALUATION

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Abstract

The accumulation of fat, oil, and grease (FOG) in wastewater systems can lead to significant problems, including pipe blockages and environmental pollution. This study investigates the effectiveness of using charcoal and banana stem fiber as filter materials in fat, oil, and grease traps to improve the treatment of oily wastewater. The study aims to compare the performance of these two filter materials in removing key parameters such as chemical oxygen demand (COD), biological oxygen demand (BOD), dissolved oxygen (DO), total suspended solids (TSS), and ammoniacal nitrogen (AN) from wastewater. Charcoal and banana stem fiber were evaluated for their ability to remove fat, oil, and grease from wastewater samples, and the results were compared to those of other commonly used filter media. The findings suggest that charcoal and banana stem fiber are effective in reducing the levels of fat, oil, and grease in wastewater, making them viable options for use in fat, oil, and grease traps.

Keywords: Charcoal, Banana Stem Fiber, Fat, Oil, Grease, Wastewater Treatment

POWER CONSUMPTION ANALYSIS OF TM-600 CENTRIFUGAL FORCE APPARATUS

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Abstract

The centrifugal force apparatus TM600 is one of the oldest laboratory machines that has been used since 1999 at Politeknik Melaka (PMK). The function of this machine is to investigate the physical laws of circular motion such as revolution per minute (RPM). Based on its technical data, the maximum power usage is 0.04kW. To verify this machine is still reliable to use, a power consumption analysis has been performed using a socket-type Power Analyzer based on the value of current (A) per RPM and value of power (W) per RPM. Both studies were detailed based on 50 grams mass and 100 grams mass with the same radial distance of 125mm from the centre of rotation. All the data show that a clear correlation between increasing speed and rising power consumption. The difference in masses also can significantly reduce power consumption. At the same time, the value of the power factor during operation is around 0.4 - 0.5 showing that the induction motor operates within a light load. The findings of the study found that the nominal power is still less than 0.04 kW shows that the centrifugal force apparatus TM600 is still in the best operational condition, but future studies must be done focusing on the possible high load and its power consumption for this machine.

Keywords: Centrifugal Force, Power Consumption, Power Factor

DEVELOPMENT OF A WIND-POWERED BATTERY BANK FOR MOBILE PHONE

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Abstract

The increasing reliance on mobile phones in daily life and the need for sustainable energy solutions have prompted the exploration of alternative power sources. This paper presents the development of an innovative wind-powered battery bank designed to charge mobile phones using wind resistance generated by a moving vehicle. The proposed solution harnesses the wind energy created by a vehicle in motion, converting it into electrical energy that can be stored and subsequently used to charge mobile devices. The primary objective is to create a portable, efficient, and eco-friendly solution that provides reliable power in various environments, including remote locations and during outdoor activities. The system comprises a compact wind turbine mounted on the vehicle, a battery storage component, and USB output ports. The turbine captures wind energy and converts it into mechanical energy, which is then transformed into electrical energy, and this electricity is stored in the battery bank, providing a renewable and reliable power source for mobile phones. The stored energy can be used to charge mobile phones through standard USB ports. The results indicate that the wind-powered battery bank can effectively generate and store sufficient energy to charge standard mobile phones, with the performance dependent on vehicle speed and environmental conditions. The study concludes that this innovative approach offers a viable, eco-friendly solution for mobile device charging on the go, promoting sustainability and convenience for users.

Keywords: Wind-powered charging, mobile phone, battery bank, renewable energy

SMART EARLY DETECTION OF RHEUMATOID ARTHRITIS TOOL ON NAILS WITH CERTAINTY FACTOR TECHNOLOGY APPROACH BASED ON IMAGE PROCESSING

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Abstract

Rheumatoid Arthritis is an autoimmune disease that attacks the thyroid gland, generally affecting the elderly. In the case, to diagnose Rheumatoid Arthritis, a medical check-up is required by medical personnel, but it is necessary to know that this disease can also be diagnosed early through a complex nail structure. This research is the first stage to get the design and prototype of Smart Early Detection Rheumatoid Arthritis Tool. The purpose of this stage of research is to get a tool that is able to capture nail images and process them. The stages of this research begin with design, prototype design and trial or evaluation. The results show that this research prototype in the form of a tool or prototype of the Smart Early Detection Rheumatoid Arthritis Tool is able to capture and process nail images. The continuation of this research is the integration of image processing with machine learning.

Keywords: Rheumatoid Arthritis, diagnostics, image processing, machine learning, healthcare

EFFECT OF CHANNEL MODEL ON FLAME STABILITY IN MESO-SCALE COMBUSTOR

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Abstract

Meso combustor is a fuel combustion device with a size between 1 mm and 10 mm. This study aims to determine the characteristics of the butane flame in the meso combustor due to the type of fuel inlet channel. The observed characteristics are flammability limit and flame visualization. The meso combustor is composed of a stainless steel vaporization segment, combustion chamber and quartz glass exhaust channel. In this study, 3 types of meso combustors were used. Type A has fuel and air channels facing each other. Type B meso combustor has side-by-side fuel and air channels with 1.5 mm channel spacing. Type C meso combustor is similar to type B but with 2 mm channel spacing. The results show that flame in meso combustor type A can be stabilized at reactant velocity of 45 - 24 cm/s and equivocation ratio of 1.1 - 1.84. The flame in type B meso combustor can be stabilized at reactant velocity 50 - 26 cm/s and equivalent ratio in the range of 1 - 1.7. Flame on meso combustor type C can be stabilized at reactant velocity 56 - 29 cm/s and equivalent ratio with a range of 1.1 - 1.48. Meso Combustor type A gives the brightest flame at an equivalence ratio of 1.78213 with reactant velocity U = 44.4276 cm/s. There is a bright color at the bottom of the circular arc indicating that the fuel is concentrated in that area. Of the three meso combustor types, type A has the widest or most stable flammability due to good mixing between fuel and air.

Keywords: Meso-scale combustor, Butane, Flammability Limit, Flame Visualization, Flame Temperature.

SUPPORT IN STEM HANDS-ON EDUCATION EXPERIENCE IN MALAYSIA : A DESIGN OF LEARNIFYBOT

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Abstract

In the dynamic landscape of contemporary education, fostering a deep interest in Science, Technology, Engineering, and Mathematics (STEM) among high school students is crucial. This project proposes the development of LearnifyBot, an innovative educational robot designed to address this issue by providing a versatile and engaging learning platform. LearnifyBot aims to enhance mechatronics education by offering practical learning experiences tailored for high school students. It operates using a battery source, ensuring flexibility and accessibility in various educational settings. The robot is built using the Arduino Integrated Development Environment (IDE), making it user-friendly for students, educators, and enthusiasts. Its capability to execute multiple projects, including basic movement, obstacle avoidance, line following, Wi-Fi control, Bluetooth control, and sumo robot functions, enriches learning opportunities and stimulates interest in STEM fields. This project also addresses the lack of dedicated teaching and training tools for mechatronics in the existing curriculum and supports students preparing for mechatronics competitions. By bridging the gap between theoretical knowledge and practical application, LearnifyBot has the potential to transform education and reignite students' interest in STEM, ultimately contributing to the development of a technologically skilled future workforce in Malaysia.

Keywords: STEM education, sumo robot, mechatronics

CLOUD-BASED HYDROPONIC PLANT MONITORING SYSTEM DESIGN USING AIVEN CLOUD MYSQL DATABASE

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Abstract

The "Cloud-based Hydroponic Plant Monitoring System" offers a novel solution to the numerous issues that hydroponic farmers face in maintaining appropriate nutrient levels for plant development. This system, which uses Arduino UNO for sensor interface and ESP32 for IoT connectivity, provides real-time monitoring of critical factors such as pH and NPK levels, which are necessary for plant health. Farmers may use Internet of Things (IoT) technology to remotely access important data on pH and nutrient composition (Nitrogen, Phosphorus, Potassium) via an integrated cloud platform, with Aiven Cloud MySQL Database providing strong data storage. This new framework allows for remote monitoring as well as data visualization and analytics using Node.js, which improves insights into the functioning of the hydroponic system. Deployed on Vercel, the system provides accessibility and scalability while encouraging educated decision-making for accurate nutrition solution modifications. This initiative promotes sustainable farming methods by bridging the nutrient management gap and adopting data-driven agriculture. It increases hydroponic cultivation productivity, keeping up with the changing terrain of modern agriculture.

Keywords: Hydroponic, Aiven Cloud MySQL, Internet of Things

EVALUATING THE POTENTIAL OF TOURISM DEVELOPMENT POTENTIAL AT TRADITIONAL VILLAGES IN SICHUAN

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Abstract

Traditional villages carry historical memory and cultural heritage. Exploring tourism resources and evaluating the potential for tourism development are fundamental to the tourism development of traditional villages. Considering the blank state of research on traditional villages in Sichuan, this paper uses 396 traditional villages in Sichuan as research samples. It selects four target layers: tourism resources, local conditions, development level, and ecological environment. Using the entropy method to determine weights, a tourism development potential evaluation system for Sichuan's traditional villages is constructed. ArcGIS software's spatial analysis functions are employed to classify and visualize the tourism development potential of Sichuan's traditional villages. The results show that Level 3 potential areas are distributed in Danba County in the northwest, Zhaohua County and Tongjiang County in the northeast, and Gulin County in the south. Level 2 potential areas are distributed across 28 counties, relatively scattered, mainly in Aba Prefecture, Luzhou City, and Ya'an City. Level 1 potential areas are primarily distributed in central and northwestern Sichuan. Based on the analysis conclusions, corresponding policy recommendations are proposed: (1) Propose specific development strategies for different potential areas. (2) Pay equal attention to protection and development, and pay more attention to the protection of the ecological environment. (3) Strengthen infrastructure construction and cultural heritage.

Keywords: traditional villages, potential evaluation, tourism development, Sichuan

A REVIEW : THE BENEFIT OF BIM TO ENHANCE DESIGN AND PLANNING STAGE IN CONSTRUCTION

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Abstract

Building information modelling (BIM) significantly enhances the design and planning stages of construction projects through improved visualisation, coordination, accuracy, and efficiency. Detailed 3D visualisations provided by BIM allow stakeholders to better understand and evaluate designs, facilitating early identification of potential issues and informed decision-making. This capability promotes better communication among stakeholders, ensuring a smoother transition from design to construction. Additionally, BIM serves as a collaborative platform where all stakeholders can access and update the project model in real-time, reducing discrepancies and improving coordination among architects, engineers, and other team members. One of the significant advantages of BIM is its capability for clash detection, which identifies conflicts between building components early in the design phase. This feature enhances coordination among different trades and reduces rework, improving overall project accuracy and efficiency. Furthermore, BIM supports better cost estimation through detailed quantity take-offs and integration with estimating software. This enhances the accuracy of cost estimates, reduces the risk of cost overruns, and ensures better budget management. BIM also streamlines the design process by integrating various design tools and workflows into a single platform, enabling designers to quickly explore multiple design alternatives and optimise solutions. This integration facilitates faster project completion and higher-quality designs by supporting parametric design techniques and providing tools for design optimization and analysis. Collectively, these capabilities of BIM contribute to a more accurate, efficient, and successful construction process.

Keywords: BIM, design and planning, clash detection, cost estimation, visualisation

THE PRODUCTION OF BIOCHAR FROM SUGARCANE BIOMASS UNDER SLOW PYROLYSIS PROCESS

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Abstract

Deforestation from charcoal production is a major environmental threat, contributing to climate change and biodiversity loss. This study explores biochar production from sugarcane biomass as a sustainable alternative. With rising charcoal demand in developing countries and improper sugarcane waste disposal, biochar offers a solution to both issues. The research focuses on optimizing conditions for sugarcane biomass production, identifying the best biochar production methods, and assessing the physicochemical properties of the resulting biochar. Two biomass conditions—coarse and fine—were evaluated during the pre-pyrolysis process, with pyrolysis conducted over 8 hours. Post-pyrolysis testing characterized biochar properties such as pH, calorific content, electrical conductivity (EC), total dissolved solid (TDS) reduction, and bulk density. Optimal conditions were identified at a 5 kg load over 8 hours, yielding 0.8 kg of biochar. Key findings include a pH of 7, calorific content of 39.974 MJ/kg, EC ranging from 0.8 to 2.5 deciSiemens/m, 18% TDS reduction, and bulk density of 0.08 g/ml. This research provides valuable insights into sustainable biomass conversion and efficient pyrolysis methods, highlighting critical physicochemical properties of biochar. These findings support environmentally friendly and economically viable practices, offering a sustainable solution to deforestation and waste disposal challenges. This study not only addresses immediate environmental concerns but also paves the way for future research and applications in biochar production and utilization, contributing to environmental conservation and sustainable development.

Keywords: Sugarcane Biomass, Pyrolysis, Biochar

THE DEVELOPMENT AND EVALUATION OF INDOOR HYDROPONIC SYSTEM IN PLANT CARE

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Abstract

This study presents the development and evaluation of an advanced indoor hydroponic system designed to minimize human intervention in plant care. Utilizing the waterfall model for its development, the system integrates sensors, a Raspberry Pi 3B+, and a Telegram bot to monitor and manage environmental parameters such as light, water level, and pH value. The primary aim was to create a sustainable and efficient gardening solution suitable for urban settings with limited space and resources. The literature review highlights the advantages of hydroponic systems, including higher crop yields and improved water use efficiency. The implementation involved phases of requirements analysis, system design, implementation, testing, deployment, and maintenance. Results demonstrated the system's effectiveness in maintaining optimal growing conditions and reducing manual input. The discussion addresses the challenges encountered, such as sensor calibration and communication consistency, and the measures taken to resolve them. This project underscores the potential of integrating modern technologies with traditional agricultural practices to enhance urban food security and sustainability. Future research directions include refining sensor accuracy, improving user interfaces, and exploring additional automation features to further increase the system's scalability and efficiency. The findings suggest that advanced indoor hydroponic systems can significantly contribute to sustainable agriculture and promote innovative practices in urban environments.

Keywords: Hydroponics, Sustainability, Automation, IoT, Telegram Bot.

DEVELOPING MOBILE-ASSISTED LANGUAGE LEARNING (MALL) APPLICATION TO SCAFFOLD ESL STUDENTS' SPEAKING SKILLS IN UNSUPPORTIVE ENVIRONMENTS

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Abstract

Employers consistently stress the significance of English proficiency and communication skills as vital employability factors. Nonetheless, within our specific ESL contexts, students frequently exhibit reluctance and hesitancy in speaking English, potentially impacting their academic performance and future career opportunities. Our previous research has identified that students are mindful of the importance of using English both in and out of the classroom to enhance their speaking skills. However, they face challenges from unsupportive environments, which affect their motivation, impede learning progress, and influence their future job prospects. Current studies advocate for adopting a mobile-assisted language learning (MALL) approach. In response, our team has created the "CE2 Speaking Buddy" mobile app, aligned with the course syllabus, to provide a platform for students to practice speaking skills anytime, anywhere. We utilised Thunkable software, following the System Development Life Cycle (SDLC) prototyping approach, involving four phases: analysing user requirements, developing the prototype, conducting user testing and feedback, and revising the product. Throughout the development process, we gathered the necessary data qualitatively, primarily using open-ended questions and supported by semi-structured interviews. Data was analysed using a thematic analysis approach. The findings revealed a positive reception of the app, with students as users acknowledging its user-friendliness, convenience, and, importantly, effectiveness in improving language skills. However, their suggestions for enhancing app features highlighted challenges such as the time and cost associated with developing apps for different operating systems and the need for consistent updates and support. Therefore, we recommend funding for further research and innovation in this area. (251 words)

Keywords: Mobile-assisted Language Learning (MALL), System Development Life Cycle (SDLC), ESL, TVET English, Communicative English.

EFFECTIVENESS OF BIOPESTICIDES AS A SUSTAINABLE ALTERNATIVE FOR CONTROLLING PESTS ON LACTUCA SATIVA (GREEN CORAL SALAD)

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Abstract

This study evaluates the effectiveness of biopesticides as a sustainable alternative to chemical pesticides for controlling pests on Lactuca sativa (green coral salad). Given the health risks associated with pesticide residues on raw vegetables, safer pest management practices are needed. Biopesticides derived from neem oil, soap, chili, and garlic were tested for their ability to control aphids, grasshoppers, and caterpillars. The experiment was conducted on two plots, each containing 30 pots of salad. One plot was treated weekly with the biopesticide spray, while the other served as a control. Pest infestation and damage were monitored over 8 weeks. Results showed a significant reduction in pest damage in the biopesticide-treated plot, with only 5 damaged plants (16.7%) compared to 10 damaged plants (33.3%) in the control plot. These findings highlight the potential of biopesticides as effective and environmentally friendly alternatives to synthetic chemicals. The use of biopesticides can reduce health risks associated with chemical residues, promote food safety, and offer a sustainable pest management solution for both commercial growers and home gardeners. Further research is recommended to optimize biopesticide formulations and application methods to enhance their efficacy and explore their impact on beneficial insects and soil health.

Keywords: Biopesticides, Neem Oil, Soap, Chili, Garlic, Pest Control, Lactuca sativa, Sustainable Agriculture, Food Safety

USE OF ALOE VERA AS AN ALTERNATIVE TO ROOTING HORMONE IN PETUNIA HYBRIDA

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Politeknik Nilai, Malaysia

Abstract

This study investigates the efficacy of Aloe Vera as an alternative to the commercial rooting hormone Indole-3-butyric acid (IBA) in promoting root development in Petunia hybrida cuttings. A total of 60 cuttings were divided into three groups: 20 treated with Aloe Vera gel, 20 with IBA, and 20 serving as a control group with no rooting hormone. Over a 14-day period, root length was measured and compared. The results showed that cuttings treated with IBA produced a significantly higher average root length (5.2 cm) compared to those treated with Aloe Vera (average of 3.5 cm in length). The control group exhibited the lowest performance, with an average root length of 2.7 cm. Statistical analysis confirmed the differences between the groups as significant. These findings suggest that while IBA remains the more effective rooting hormone for Petunia hybrida, Aloe Vera presents a viable natural alternative, especially beneficial for cost-saving and sustainable practices in ornamental plant cultivation, particularly in regions like Malaysia with favorable climates for such species. Future research should explore optimizing Aloe Vera application and its long-term effects on plant health.

Keywords: Aloe Vera, Indole-3-butyric acid (IBA), Petunia hybrida, Rooting Hormone, Ornamental Plants, Sustainable Agriculture, Malaysia

INTEGRATING BIOMIMETIC DESIGN PRINCIPLES FROM THE NAMIB DESERT BEETLE INTO LANDSCAPE RAIN HARVESTING SYSTEMS TO ENHANCE WATER COLLECTION EFFICIENCY AND SUSTAINABILITY

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Abstract

This study explores the potential of integrating biomimetic design principles inspired by the Namib Desert beetle into landscape rain harvesting systems to enhance water collection efficiency and sustainability. Utilizing an online questionnaire, data was collected from 30 students enrolled in the Diploma in Landscape Horticulture program at Nilai Polytechnic. The survey assessed students' knowledge, perceptions, and potential applications of biomimetic designs in landscape rain harvesting. Results indicated a strong interest in innovative water management solutions and a recognition of the Namib Desert beetle's unique water harvesting capabilities. Students proposed various novel applications, including fog and dew harvesting mesh panels, biomimetic roofing systems, pervious pavements, and living walls. The findings highlight a significant gap in the current literature on the practical implementation of beetle-inspired designs in landscape architecture. This research underscores the importance of interdisciplinary education in fostering sustainable landscape practices and provides a foundation for future studies aimed at developing efficient and sustainable water harvesting systems.

Keywords: Biomimetic design, Rain Harvesting, Sustainability

NUMERICAL STUDY OF THE THERMAL CHARACTERISTICS OF AN INTEGRATED SOLAR COLLECTOR-STORAGE SYSTEM

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Abstract

Typical Solar Water Heaters (SWHs) use separate solar panels and insulated tanks. Sunlight heats the panels, which then warms up water stored in the tank for later use. However, bulky equipment and slow return on investment hinder SWH installation. This article proposes a new, combined system: a compact solar collector-storage unit. It will be a cylindrical tank containing phase-change materials (PCMs) with a central pipe. While the water flows through these pipes, it absorbs heat stored by the PCMs. To assess this new system's performance, researchers created a computer simulation. The simulation analyzes how the flow rate of incoming water affects the system's efficiency. They built a mathematical model to compare the thermal properties of regular solar collectors with those that incorporate PCMs. This model relies on established scientific principles and has been verified using data from the PCM manufacturer.

Keywords: Solar water heater system (SWHS) -Thermal energy – Solar Collector – Phase Change Materials

FABRICATION OF CAT BATH STATION USING FOOT PADDLING SYSTEM

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Abstract

In modern pet care, addressing challenges in routine tasks like bathing cats requires innovative solutions that prioritize animal welfare and caregiver efficiency. This project introduces a cat bath station designed with a foot paddling system to enhance the bathing process's safety, efficiency, and comfort. Traditional methods of cat bathing often led to stress for both cats and caregivers due to manual handling and water aversion issues. The proposed cat bath station integrates a foot-controlled water valve, allowing caregivers to manage water flow hands-free while focusing on gently handling the cat. Materials such as fiberglass and mild steel ensure durability, corrosion resistance, and structural integrity, reflecting a commitment to sustainable and efficient design practices. Aligned with Sustainable Development Goal 9, the station optimizes water usage and promotes animal welfare through its adjustable design and non-slip surface for safety. Methodologically, the project encompasses design, material selection, fabrication, and testing, emphasizing affordability and quality. Testing results demonstrate significant reductions in water usage and caregiver stress levels, highlighting the station's practical benefits. This innovation represents a pivotal advancement in pet care technology, offering a humane, efficient solution applicable in pet shops, grooming facilities, and veterinary clinics, with potential broader applications in animal care and beyond.

Keywords: Foot paddling system, Water conservation, Pet care technology

CRASHING INFRASTRUCTURE PROJECTS CONSIDERING SCHEDULING FLEXIBILITY

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Abstract

This paper explores a systematic approach to project crashing, a technique used to expedite project completion by allocating additional resources. The research methodology involved Crashing with Budget Constraints Three case studies were conducted where projects were crashed under predefined constraints crashing budget maximum and minimum permissible durations for activities. Linear Programming Formulation a mathematical model was developed using linear equations to optimize crashing costs while considering the constraints mentioned above. Integer variables were used to represent the crashing durations. Solving with Simplex Method The case studies were solved using the simplex method a common technique for solving linear programming problems. Key Findings, The paper presents the optimal crashing durations for various activities in each case study along with the associated crashing costs. For example, in the first case study, crashing resulted in a 40-day reduction in project duration at a cost of 278,479 Saudi Riyals.Crashing impacted the critical path (the sequence of dependent activities that determines project duration) by reducing the overall project completion time. In one case study, crashing reduced the completion time by 10.27%. The paper acknowledges that traditional construction methods rely on factors like technology adoption, patience, flexibility, and workforce adaptability to meet project demands. Additional Exploration A fourth case study explored three different methods for completing a specific activity (plastering) - using robots versus two manual approaches. Overall, this paper presents a data-driven approach to project crashing that considers both time and cost constraints. It demonstrates the effectiveness of this method in reducing project completion time while highlighting the associated cost implications.

Keywords: project management, critical path, flexibility, management , project crashing , scheduling flexibility

COMPARISON OF MICROSTRUCTURE AND MECHANICAL PROPERTIES OF DP1000 STEEL BEFORE AND AFTER DEFORMATION

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Abstract

Dual-phase (DP) steels are widely used in the automotive, aircraft and space industry where strength and formability properties are sought. In automotive applications, they offer weight reduction through energy absorption for collision zones, along with ease of shaping during production. The microstructure of DP steels consists of a combination of ferrite and martensite phases. While hard martensite grains provide strength, the ductile ferrite phase provides formability. The strength level of DP steel is related to the amount of martensite in the microstructure. In this study, the microstructure and mechanical properties of dual phase steels called DP 1000 were examined before and after forming. Mechanical properties were determined by hardness and tensile tests. No noticeable change was observed in microstructural examinations carried out via an optical microscope. In hardness measurements, the hardnesses before and after deformation were measured as 300 HB and 350 HB, respectively. In the tensile test, the most significant difference was observed in the elongation values. Before deformation, DP1000 steel exhibits an elongation of 35% in the homogeneous plastic deformation region, while after deformation the vu value is around 15%.

Keyword: Dual Phase Steel, Microstructure, Mechanical Properties, DP Forming, Deep Drawing

DEFORMATION CHARACTERISTICS OF WELDED CONNECTIONS, ANALYSIS USING DEEP DRAWING AND FINITE ELEMENT METHOD

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Abstract

Dual-phase steels are widely used in the automotive and manufacturing industries thanks to their high strength and good formability properties. Dual phase steels are known as DP. The coexistence of ferrite and martensite phases in these steels gives the material superior mechanical properties. However, deformations that may occur in welded connections and the behaviour of these deformations under deep drawing process can significantly affect the performance of the material. In this study, the microstructure and mechanical properties of dual-phase steels were examined under the influence of thermal cycles occurring during the welding process. In this experimental study, the deformation effects of DP1000 steel sheet materials, which are commonly used in the automotive industry, were joined by electric resistance butt welding and analysed in detail by deep drawing.

Keyword: Deep drawing, dual phase steel, electric resistance butt welding, welded links.

Research Paper
Health and Life Science

PRELIMINARY INVESTIGATION ON THE USE OF ORGANIC WASTE AS A MEDIUM FOR FAST ACTING BIOFILTRATION SYSTEM

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Abstract

Environmental disasters and water crises can make access to clean water a critical challenge for many communities, often leading to severe health risks. The high costs and complexities of rapid filtration systems exacerbate this problem. This study aims to address these challenges by developing a biofilter that uses various fruit waste materials—specifically orange peels, sugarcane bagasse, and watermelon rinds—as filtration media. Turning fruit waste, which typically contributes to environmental pollution, into a resource for water treatment offers a sustainable approach, especially during times of crisis. To assess the effectiveness of these biofilters, we evaluated their performance using multiple criteria, including chemical oxygen demand (COD), biochemical oxygen demand (BOD), total coliform count, total ammoniacal nitrogen, pH, total dissolved solids (TDS), total suspended solids (TSS), and filtration rate. We compared the results to the Class IIB National Water Quality Standards (DOE, 2023) to determine whether the fruit waste biofilters meet required water quality levels. The analysis revealed that sugarcane bagasse was the most effective filtration medium, followed by orange peels, with watermelon rinds being the least effective of the three. These findings offer important insights into using fruit waste for biofiltration and suggest a cost-effective, sustainable solution for emergency water treatment. This research contributes to innovative methods of fruit waste utilization, addressing the pressing need for accessible clean water in the wake of environmental disasters and water crises.

THE EFFECTIVENESS OF TANNIC ACID FROM TEA WASTE AS A COAGULANT FOR REDUCING SOLIDS AND COD IN WASTEWATER TREATMENT

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Abstract

Tea is one of the most popular beverages globally, second only to water. The worldwide demand for tea is growing rapidly, a trend expected to continue for the next decade. While this surge in production meets market demand, it also generates substantial tea waste, contributing to environmental issues. This study explores the sustainable use of tea waste by extracting tannic acid and investigates its potential as a solid coagulant, which could function similarly to aluminum sulfate. Municipal wastewater typically contains a mix of suspended particles, organic matter, and pathogens, with organic materials ranging in size from under 0.001 µm to over 100 µm. Untreated wastewater can introduce organic and solid waste into water bodies, causing undesirable changes in color, turbidity, and dissolved oxygen levels. To avoid these environmental impacts, regulations set limits on total suspended solids (TSS) and biochemical oxygen demand (BOD) in municipal wastewater discharges. Given the need for effective wastewater treatment, this study aims to test tannic acid extracted from tea waste as a coagulant in comparison to aluminum sulfate. The research involves four key tests to assess coagulant efficiency in wastewater treatment: total dissolved solids (TDS), total suspended solids (TSS), total solids (TS), and chemical oxygen demand (COD). By evaluating these parameters, the study seeks to determine if tea waste-derived tannic acid can be a sustainable and effective alternative for treating municipal wastewater, reducing environmental impact, and providing a beneficial use for tea industry by products.

Keywords: Environment, wastewater treatment, coagulant, tannic acid

THE POTENTIAL OF SHRUB PLANTS AS SOIL EROSION CONTROL

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Abstract

This study aims to identify the suitable plant to prevent soil erosion at slope areas. This study was also conducted on two types of shrubs plants namely Duranta Gold and Excoecaria chocinchinesis and also compare with Axonopus Compressus turf to get best result. This study has been carried out through plotting system where artificial slope has been built with nine-meter square feet and data was collected after two months in consideration of these shrubs and turf has been well growth. Data collection for soil erosion was pick with two main parameter which is volume of soil runoff and the volume of water runoff. Findings shown that the percentage of between shrubs and turfing for soil erosion control has low significant where Excoecaria chocinchinesis has been recorded the lowest volume with 225.5grams/minutes, followed by Axonopus Compressus turf with 226 grams and the highest volume recorded is Duranta Gold with 227 grams. This finding shown that all these types of plants have good root density and root length density as to hold soil structure and has potential to prevent soil erosion. For water runoff, there have significant findings between current soil erosion control using vegetation method by using Axonopus Compressus as compared with Excoecaria chocinchinesis and Duranta Gold. Based on this finding, the ability of shrubs, especially Duranta Gold, is able to compete with Axonopus Compressus turf where the difference in the amount of water accumulated for a period of one minute between these two plants is only in the range of 0.12 liters. Axonopus Compressus turf was recorded 0.53 liters per-minutes while Duranta Gold recorded 0.65 liters per-minutes and regarding to this finding shown that shrubs plants also have potential for soil-erosion control. Based on the results, this study can conclude that these two shrubs Duranta Gold and Excoecaria chocinchinesis has almost similar ability with current method on soil erosion control by using Axonopus Compressus turf in slope area. Other than that, by using shrubs also has an advantage where it can give an aesthetic value for slope with shrubs plants. The main factor that contribute for soil strength that can be holding soil structure are plant root system which is root density and root length density. For growth rate data, findings shown all plants have similar growth rate and the differentiate each of them has shown in a small number. All these sample of plants growth such of plants height, root depth, and number of leaves in average rate shown that shrubs also have a potential for soil erosion control. The use of vegetation, such as grasses, shrubs, trees, and ground cover plants, is a cost-effective and environmentally friendly approach to reducing soil erosion.

Keywords: soil erosion, shrubs trees, vegetation control, slope control approach

EVALUATION OF THE ANTI-DIABETIC PROPERTIES OF ANDROGRAPHIS PANICULATA EXTRACT IN SILICO ANALYSIS

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Abstract

Diabetes mellitus is a metabolic disorder caused by high blood glucose levels and has been treated with various groups of drugs for many years. However, the administration of anti-diabetic medication has been showing adverse effects and signs of toxicity resulting in suggestions in trying alternative herbal treatment. Andrographis paniculata, is a plant that has been widely used in Ayurveda and Siddha for many years with Andrographolide as its main phytochemical exhibiting hypoglycaemic properties. Nevertheless, extensive studies are required towards other useful phytochemicals in the plant that contribute to better enzyme inhibition. This study aims in evaluating the anti-diabetic properties of Andrographis paniculata extract by in silico analysis. Nineteen phytochemicals were screened via molecular docking to identify their binding affinity towards α-amylase and α-glucosidase. The result shows that among 19 phytochemicals screened, 3,4-dicaffeoylquinic acid (xanthone), has the highest binding energy which means high inhibition potential towards both α-amylase (9.27 kcal/mol) and α-glucosidase (9.27 kcal/mol) as compared to the Andrographolide which has the binding energy of 7.34 kcal/mol. The compound possesses 18 to 19 interactions towards the catalytic residues and forming numerous bonds with the enzyme's active site (3 hydrogen bonds, 8 hydrophobic interactions and 4 pi-pi interactions) hence, should be the most promising compound in preventing the breakdown and absorption of glucose in the intestine. Previous study showed that this phytochemical has no side effects when given on its own or in combination with other drugs thus promising as an excellent solution to overcome the growing issue of diabetes mellitus.

Keyword: Diabetes mellitus, Andrographis paniculata, α-amylase, α-glucosidase, 3,4-dicaffeoylquinic acid, Xanthone

EFFECTS OF LOW KOMBUCHA ALCOHOL ON ORGANOLEPTIC PROPERTIES, SHELF LIFE AND NUTRITIONAL QUALITY

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Abstract

Kombucha, a fermented non-alcoholic beverage, is produced through symbiotic fermentation of sweetened tea with SCOBY and tea starter. This study investigates low alcohol kombucha formulations (3%, 5%, 10%) over 7 and 14 days, assessing organoleptic properties, shelf life, and nutritional quality. Two production methods were employed: cold shock at 4°C for 5 days, yeast removal, and sugar reduction; or pasteurization at 55°C for 7 days or 66°C for 14 days. Sensory tests with 50 panellists favoured the 14-day control for its sweetness and fizziness. Shelf life was evaluated microbiologically, showing inconsistent acetic acid bacteria counts post-pasteurization: decreasing by day 7 (0.95 ± 0.3 CFU/ml) and increasing by day 14 (1.05 ± 0.2 CFU/ml). Alcohol analysis indicated the 14-day control (0.05% w/w) had the lowest alcohol content. Its low pH (2.7) conferred tartness and high acidity (4.3 g/ml). Antioxidant DPPH increased from day 7 (0.376%) to day 14 (0.417%). Total phenolic content rose to 18.34 ± 0.3 mg GAE/ml, while total flavonoid content decreased to 0.52 ± 0.080 mg QE/ml. The first method (14-day control) produced preferred organoleptic properties despite shelf life and nutritional quality inconsistencies.

Keyword: Low Alcohol Kombucha, Organoleptic, Shelf-Life, Nutritional Quality

A REVIEW: CLIMATE CHANGE INCREASES THE RISK OF INFECTIOUS DISEASES AND SOLUTIONS TO ADDRESS THE ISSUES

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Abstract

Earth's climate has been shifting since the middle of the 20th century due to human activity. Increasing global temperature reported by IPCC is projected to increase. Changes in climatic factors including temperature, precipitation and severe weather events result in epidemiological changes of the infectious disease. This review aims to identify the epidemiology of infectious diseases driven by climate change, its factor and solution to the issue of climate change and infectious diseases. English searches of this literature review were conducted in ScienceDirect, Google Scholar, PubMed and WILEY Online Library with a limited period of search which is between the years 2018 and 2024. The incidence of vector- borne disease, mosquito-borne disease, tick-borne disease, and food and water-borne disease had been accelerated along the year globally, attributed by climatic factors such as temperature and precipitation. Warmer temperature enhances their development and survival as well as the pathogens they brought along. Increased precipitation events lead to waterborne disease outbreaks, with flooding overwhelming sewage systems and contaminating drinking water. To address this issue, surveillance plays a vital role in identifying and managing outbreaks, yet requires systematic data collection and analysis. Furthermore, adaptation strategies are crucial for reducing vulnerability to climate change. It includes early warning systems and epidemic forecasting tools. Vaccination strategies and vector control are vital components of mitigation efforts. Meanwhile, health education campaigns are also necessary to raise awareness and empower communities to mitigate risks associated with climate change and infectious diseases.

Keywords: Climate Change, Infectious Disease, Temperature, Precipitation

EFFICIENT PRODUCTION OF DOCOSAHEXAENOIC ACID (DHA) BY AURANTIOCHYTRIUM SP. USING PINEAPPLE PEEL EXTRACT AS AN ALTERNATIVE SUBSTRATE.

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Abstract

Thraustochytrids such as Aurantiochytrium sp. has attracted the attention of researchers and industry due to its ability to produce high amount of polyunsaturated fatty acids (PUFA) especially docosahexaenoic acid (DHA, C22:6 ω-3). Nevertheless, the need to use expensive substrates, such as refined carbon sources during the cultivation process has contributed to the increase in the commercialization cost of DHA from thraustochytrids. Therefore, in this study, pineapple peel waste (PPW), which is one of the main wastes of the agricultural industry in Malaysia has potential to be used as a cheaper alternative carbon source for the production of DHA from Aurantiochytrium sp. SW1. This study provides crucial insight to obtain the optimal amount of sugar from relatively complex recalcitrant PPW via pretreatments such as autoclave, acidic and alkaline treatment methods with different concentrations. The results showed that the hydrolysate produced from autoclave treatment had the highest sugar content (39.6 g/L) followed by the acidic and alkaline treatments recovered sugar content in the range of 31-38 g/L total sugar respectively. Then, the ability of Aurantiochytrium sp. SW1 to utilize all sources of PPW hydrolysates as the sole carbon source was screened and compared. It was found that the usage of PPW hydrolysate with 100mM H2SO4 treatment along with additional nutrients produced the highest biomass (7.74 g/L) while the highest lipid content (60.7%) was produced when SW1 was cultured using PPW hydrolysate with autoclave treatment without added nutrients. The highest DHA production (0.68 g/L) was achieved when Aurantiochytrium sp. SW1 was cultured using PPW hydrolysate with 100mM H2SO4 treatment along with additional nutrients where it was 10-35% higher when compared to production using other PPW hydrolysates. This study can be the basis for the production of cheaper DHA from thraustochytrids by using PPW as an alternative carbon source.

Keywords: Aurantiochytrium sp., Docosahexaenoic acid, pineapple peel waste, pretreatment

DESIGN AND IMPLEMENTATION OF REMOTE CONTROL MONITORING AND MOBILE WATERING SYSTEM

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Abstract

The progress in agriculture technology has resulted in the creation of inventive approaches targeted at maximizing water consumption and guaranteeing effective irrigation methods. Using soil moisture sensors and microcontroller technology, this project focuses on the design and implementation of a remote-control monitoring and mobile watering system. To continuously monitor soil moisture levels, the system makes use of a network of sensors that are strategically distributed throughout the agricultural area. A microcontroller is interfaced with these sensors, and it processes the data before sending it wirelessly to a remote-control unit. With the help of the remote-control unit's user-friendly interface, farmers can keep an eye on the soil moisture levels in real time and decide on irrigation schedules with knowledge. The progress in agriculture technology has resulted in the creation of inventive approaches targeted at maximizing water consumption and guaranteeing effective irrigation methods. Using soil moisture sensors and microcontroller technology, this project focuses on the design and implementation of a remote-control monitoring and mobile watering system. To continuously monitor soil moisture levels, the system makes use of a network of sensors that are strategically distributed throughout the agricultural area. A microcontroller is interfaced with these sensors, and it processes the data before sending it wirelessly to a remote-control unit. With the help of the remote-control unit's user-friendly interface, farmers can keep an eye on the soil moisture levels in real time and decide on irrigation schedules with knowledge. The system also has a transportable watering mechanism that can be a sustainable solution for precision irrigation, contributing to the overall goal of smart farming and resource optimization in agriculture.

QUANTITATIVE DESCRIPTION ANALYSIS (QDA) AND CONSUMER PREFERENCE ON IMITATION CHICKEN NUGGETS FROM GRAY OYSTER MUSHROOM STEMS AND CHICKPEA FLOUR

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Abstract

Emergence of mushroom as the main ingredient in meat-based food products shows the potential of mushroom as meat alternative. However, the stems of mushroom that consider as food waste in food industry have also potential to be applied as meat alternative. Thus, study was conducted to evaluate sensorial properties of four formulations of imitation chicken nuggets from grey oyster mushroom stem (GOMS) and chickpea flour (CPF) which were: A (60 GOMS: 10 CPF), Formulation B (55 GOMS: 15 CPF), Formulation C (50 GOMS: 20 CPS), and Formulation D (45 GOMS: 25 CPS) using Quantitative Descriptive Analysis (QDA) Test compared with commercial chicken nugget. Eight trained panelists (5 males, and 3 females aged between 24 to 42 years) were trained and selected based on their interest. The panelists evaluated fifteen sensory descriptors of ICNs based on appearance, aroma, texture, flavour, and taste descriptors. It was found that ICN B was the most accepted and preferred ($P>0.05$) by consumers among ICNs. Based on a simple questionnaire conducted on 110 respondents, 63.64% consumers usually buy nugget rather than other products which comprised 82.82% chicken nugget. The main criteria consumers seek when selecting nugget is taste (61.62%), and the main reason in buying nugget is easy to cook (55.56%). In general, 51.52% consumer have knowledge in vegetarian nugget, and 68.69% of them tend to buy mushroom nuggets. In conclusion, mushroom stems as the main ingredient in meatless nuggets have found consumers' preference towards meat alternatives.

Keywords: Nugget Sensorial Profile; Nugget Consumer Preference; Imitation Chicken Nuggets; Grey Oyster Mushroom Stems; Chickpea Flour

TELANG FLOWER: A NOVEL APPROACH TO PHARMACEUTICAL INNOVATION IN MALAYSIA

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Abstract

The COVID-19 pandemic has drastically reshaped the global economy, but it has also created new opportunities for the herbal medicine industry. Malaysia, with its rich biodiversity and over 2.000 plant species reported to have medicinal properties, has emerged as a hub for herbal product research and development. The Malaysian government has recognized the potential of this sector, designating herbs as a key economic area and investing heavily in the research and development of high-value herbal products. One such plant that has garnered significant attention is the Telang Flower, also known as Clitoria Ternatea, which is being explored for its potential as a pharmaceutical product. Malaysia's diverse flora, coupled with the government's commitment to the herbal industry, has fueled a surge in scientific research aimed at validating the medicinal claims of various plant-based products. Researchers have shown an increased interest in developing commercialized herbal products, including Telang Flower which is listed as one of the 18 high-value herbs under the government's agriculture initiative. This research will show the ability of Telang Flowers to be innovated as a pharmaceutical product that is safe to use and provides optimal effects to its users.

Keyword: Covid 19 Pandemic, Pharmaceutical Product, Biodiversity, Telang Flower

DEVELOPMENT OF BIO-BOARD FROM REUTILIZATION OF SPENT PLEUROTUS CAJOR-SAJU SUBSTRATE

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Abstract

Spent Pleurotus Cajor-Saju mushroom substrate is considered residual biomass after mushroom cultivation. It is produced in large quantities and often disposed of without consideration for the environment. This project aims to reduce environmental pollution and manage solid wastes by reutilizing the substrates into eco-friendly bio boards. Various formulations of bio boards were produced, and several tests were conducted to determine the most sustainable and durable formulation. After the heat compression process, the density and weight reduction of the bio boards were recorded. Water resistance and strength tests were also performed. The results indicated that formulation E showed the best performance compared to other formulations. It had the highest density, the best water resistibility, and did not exhibit any cracks during the strength test. This suggests that formulation E can serve as the control variable in future efforts to produce high-performance bio boards. In conclusion, the reutilization of Pleurotus Cajor-Saju mushroom substrate can help manage the large amount of spent mushroom substrate generated and recycle it into useful materials, supporting a sustainable circular economy in the mushroom industry. Additionally, bio boards made from mushroom waste can help reduce the need for cutting trees for board production and decrease environmental pollution.

Keyword: Mushroom, Substrate, Pollution, Waste, Bio-board.

Research Paper

Information Communication Technology

AN OVERVIEW OF ARTIFICIAL INTELLIGENCE (AI) IMPACT ON ROYAL MALAYSIA POLICE

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Abstract

This overview study examines the impact of artificial intelligence (AI) on the Royal Malaysian Police, focusing on how it can improve operational efficiency and help ensure public safety. By leveraging artificial intelligence algorithms and advanced data analytics, the Royal Malaysian Police can optimize resource allocation, predict and prevent crime and streamline investigations. The introduction of predictive policing using artificial intelligence algorithms has revolutionized the enforcement strategies of the Royal Malaysian Police. By analysing a wide range of historical crime data, AI can identify patterns, trends and potential hotspots of criminal activity. This enables the Royal Malaysian Police to allocate resources more efficiently and take proactive measures to prevent crime, which ultimately leads to a reduction in crime rates and improved public safety. In addition, AI-powered video surveillance systems, reincluding facial recognition technology, play an important role in the efforts of the Royal Malaysian Police. AI algorithms can analyse live or recorded footage to detect suspicious activity, identify objects and recognize faces. The technology assists the Royal Malaysian Police in locating suspects, identifying missing persons and ensuring a safer environment for the public. Integrating AI into the investigative process has also proven to be of great benefit to the Royal Malaysian Police. AI can analyse reams of data, including criminal records, social media posts and surveillance footage, to help investigators identify relevant information, connections and patterns. This speeds up investigations and leads to more efficient and effective results.

Key words: Artificial intelligence (AI), Royal Malaysia Police, Law enforcement, Operational efficiency, Predictive policing, Resource allocation, Crime prevention, Investigative processes, Video surveillance, Facial recognition technology, Public safety, Cybersecurity, Data analytics, Crime patterns, Hotspots, Ethical considerations, Privacy, Algorithm biases, Transparency, Accountability

DEVELOPING AND USING OF SWITCHLESS KIT FOR MULTI-LEVEL USERS

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Abstract

This research focuses on developing and use of IoT module sets. The switchless kit innovation is based on the Internet Controlled Switch via smartphone. Rocker switch is commonly used to do lighting of an electric bulb. In demand of new technology, IoT (Internet of things) is a developing technique that is more useful to control or monitor the appliances via the internet. Nowadays many smart home and office appliances are connected in smart switch boxes that enable users to control their appliances anytime and anywhere. The switchless kit innovation is developed to switch on the light through a smartphone interface. The lamp is connected to the WIFI network using ESP32 microcontroller. An Arduino ver.1.8.19 is implemented in NodeMCU ESP32 and it can be accessed through mobile applications. An electric light controller is designed using a Remote XY based on the NodeMCU ESP32 microcontroller. This system only applies if the condition of the AC voltage originating from the local power supply is ON. The control system is managed using the RemoteXY interface and C Programming language is used for coding and execution. This tool works on wifi connection. This innovation was found to be very efficient, practical and cost saving for electricity energy. This switchless light control system can make it easier for users to cut electricity usage. The IoT module set is being used for training sessions and was found to be very user-friendly for secondary school students, higher education and for training of trainers. The IoT technology is being empowered amongst students and lecturers aligned with the IR 4.0 revolution by attending training that enables students to apply this technology in their final year project.

Keyword: IoT, switchless, NodeMCU ESP32

MACHINE LEARNING TECHNIQUES TO ANALYZE AND INTERPRET ANTHROPOMETRIC DATA FOR BADMINTON TALENT IDENTIFICATION IN MALAYSIA

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Abstract

This study aims to leverage machine learning techniques to analyze and interpret anthropometric data to identify badminton talent in Malaysia. The dataset utilized in this study comprises a comprehensive list of badminton players who have competed in the Olympic Games over the past 120 years, including critical anthropometric measures such as height, weight, and Body Mass Index (BMI). To achieve the objectives, Random Forest algorithm is employed to cluster potential new players based on their anthropometric data, identifying patterns and groupings indicative of successful badminton players. Additionally, other relevant machine learning techniques are deployed, Support Vector Machines (SVM), to discover latent patterns and enhance the precision of talent identification. The Random Forest clustering provides a robust framework for grouping players with similar physical characteristics, creating a profile of an ideal badminton player. Subsequent analysis using SVM enables the detection of complex, non-linear relationships within the data, offering deeper insights into the attributes that contribute to high performance in badminton. The findings aim to contribute to the field of sports science by providing a data-driven approach to talent identification, potentially transforming how future badminton talents are identified and nurtured. This study not only highlights the importance of anthropometric data in sports but also showcases the efficacy of machine learning methodologies in uncovering valuable insights from historical athletic performance data.

Keyword : Performance, Body Composition, Talent Scouting, Data Driven

STUDY ON THE EFFECTIVENESS OF GOOGLE SITES USAGE IN e-StudentPMK USING GOOGLE ANALYTICS

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Abstract

Google Sites was chosen as a free substitute for email and WhatsApp apps for Politeknik Melaka (PMK) student management software, which uses e-StudentPMK. Because of its many uses as a one stop centre make Google Sites is a useful tool for compiling and giving website users access to the most recent information and notifications for website visitors. The aim is to facilitate the dissemination of updates and current information, as well as the receipt of documents among students, lecturers, and the public. The research instrument used is Google Analytics, which helps determine the effectiveness of this electronic information collection site Google Analytics is a platform provided by google that assists in data from applications or website traffic. This study concentrates on the data outcomes rated to the number of visitors to sub-pages on the website, the sources of visitors traffic and the demographics of visitor locations. The data was collected over a period of one year from April 2023 to April 2024.Using Google Analytics, traffic flow data revealed that a total of 5,566 visitors had visited since the establishment year 2020 including new visitors in April 2023 to 2024. There were 760 new website visitors over the year. In conclusion, Google Sites demonstrates that website visitors are highly prepared to use Google Sites as a medium for accessing the latest information and for easier, faster, and more efficient document receipt and delivery. It also demonstrates the efficiency of organizational management.

Keywords: Website, Google Sites, Google Analytics Management, Information

Research Paper

Logistics and Supply Chain Management

FACTOR-2 INFLUENCES THE SEARCH FOR THE SHORTEST ROUTE IN THE DISTRIBUTION: A SYSTEMATIC LITERATURE REVIEW

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Abstract

In the current era of globalization, logistics activities in Indonesia continue to experience rapid development day by day. Logistics distribution is the process of managing the flow of goods from the point of origin to the final destination. Logistics distribution includes various activities necessary to ensure that products are available at the right place and time, in good condition, and at an efficient cost. Choosing the shortest route in distribution is a crucial decision that affects operational efficiency and costs. This research will identify the types of factors that influence the search for the shortest route in distribution using the Systematic Literature Review (SLR) method. The databases used in selecting articles that match the criteria include: Emerald Online, IEEE Xplore, ScienceDirect, SpringerLink, and between 2020 - 2024, The results of this research show that there are 5 types of factors that influence the search for the shortest route in the distribution, distance is the dominant factor that influences this decision, accounting for (76%) of the factors considered. Cost also had a significant contribution at (9%), followed by travel time (7%), regulations (4%), and environmental factors (3%). These results provide important insights for distribution planning to optimize efficiency by considering these factors holistically. This research provides a basis for developing more efficient and sustainable route strategies in the context of distribution operations.

Keywords: Distribution, SLR, Shortes route, Cost

THE INFLUENCE OF ORGANIZATIONAL AMBIDEXTERITY, BUSINESS STRATEGIES AND SUPPLIER PERFORMANCE ON CUSTOMER STATISFACTION, AND ITS IMPLICATIONS ON LOGISTICS PERFORMANCE AT BANDUNG MAIN BRANCH OFFICE OF POSIND

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Abstrak

This research aims to determine the influence of Organizational Ambidexterity, Business Strategies and Supplier Performance on Logistics Customer Satisfaction at Bandung Main Branch Office of PosIND as well as the influence of Customer Satisfaction on Logistics Performance at Bandung Main Branch Office of PosIND. The total population is 440 customers. The number of respondents was 210 customers determined using the Slovin method. The research results prove a positive and insignificant influence of Organizational Ambidexterity on customer satisfaction. Business Strategies influence customer satisfaction positively and significantly. Supplier performance influences customer satisfaction positively and not significantly. Organizational Ambidexterity, Business Strategies, Supplier Performance influence customer satisfaction positively and significantly. Customer satisfaction affects performance positively and significantly. Based on the results of the research that has been carried out, what should be improved is exploiting the strengths possessed by Bandung Main Branch Office of PosIND and exploring opportunities that exist outside Bandung Main Branch Office of PosIND. PT PosIND has succeeded in proving that the Business Strategies implemented influences Customer Satisfaction. Currently PT PosIND is also establishing a digital transformation Strategies and establishing green logistics. It would be good if there were other researchers who conducted research related to PT PosIND's business Strategies in the form of Digital Transformation and Green Logistics.

Keywords: Organizational Ambidexterity, Business Strategies, Supplier Performance, Customer Satisfaction, Logistics Company Performance.

THE EFFECT AND IMPLICATION OF EXPRESS MAIL SERVICE (EMS) TARIFF, DIRECT FLIGHT AND LOGISTICS COMPETENCE ON SERVICE QUALITY FOR COMPANY PERFORMANCE AT PT POSIND KCU DENPASAR

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Abstract

The author conducted a study on the performance of the Courier and Logistics business at PosIND KCU Denpasar. The issue identified is the continuous decline in revenue from Express Mail Service (EMS), indicating a performance problem within PT PosIND KCU Denpasar. The research aims to analyze the impact of Express Mail Service (EMS) Tariff, Direct Flight, and Logistics Competence on company performance, with Service Quality as an intervening variable. The method used was quantitative, and data analysis was conducted using the smartPLS application. The study population consisted of 250 customers, with a sample size of 154 determined by the Slovin formula.The load factor and Cronbach's Alpha values for all variables were above 0.700, indicating that the data for all variables were valid and reliable. The T Statistics value for EMS Tariff was 3.434, where T Statistics > 1.96 and p-value = 0.001, indicating a positive influence of EMS Tariff on Service Quality. There was a positive influence of Direct Flight on Service Quality, with a T Statistics value of 2.277 > 1.96 and a p-value of 0.023 < 0.050. There was a positive influence of Logistics Competence on Service Quality, with a T Statistics value of 2.661 and a p-value of 0.000 < 0.05. The R Square value was 0.612, indicating a positive and significant influence of EMS Tariff, Direct Flight, and Logistics Competence on Service Quality. Additionally, there was a positive and significant influence of Service Quality on Company Performance, with a T Statistics value of 13.132 > 1.96 and a p- value of 0.000 < 0.05. PT PosIND should evaluate the implementation of direct flights for EMS services to enhance customer service quality and potentially increase company revenue.

Keywords: Express Mail Service (EMS) Tariff, Direct Flight, Logistics Competence, Service Quality, Company Performance

ANALYSIS OF FACTORS THAT INFLUENCE THE EFFECTIVENESS OF EXPORT PERFORMANCE : CASE STUDY AT PT. SINERGI MITRA LESTARI INDONESIA

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Abstract

Exports are one of the important activities that influence a country's economic growth. For companies, especially those engaged in international trade, effective export performance is the key to achieving success and global competitiveness. This research aims to analyse the factors that influence the effectiveness of export performance, with a focus on the company PT Sinergi Mitra Lestari (SMLI). This research identifies and evaluates various internal and external factors that contribute to export performance. The internal factors analysed include product quality, innovation, marketing strategy, operational efficiency, and human resource management. Meanwhile, external factors include government policies, global economic conditions, exchange rate fluctuations, and diplomatic relations between countries. This research methodology uses a quantitative approach by collecting data through surveys and statistical analysis. The data obtained was analysed to measure the influence of each factor on the effectiveness of PT SMLI's export performance. The research results show that product quality and innovation have a significant influence on increasing export value. Apart from that, effective marketing strategies and competent human resource management also contribute greatly to achieving optimal export performance. This research concludes that to increase the effectiveness of export performance, PT SMLI needs to focus on improving product quality, innovation, and developing appropriate marketing strategies. Support from government policies and global economic stability are also very important in creating a conducive environment for export activities. It is hoped that the recommendations resulting from this research can help PT SMLI and similar companies in formulating more effective strategies to improve export performance and competitiveness in international markets.

Keywords: Effectiveness of export performance, product quality, innovation, marketing strategy, PT Sinergi Mitra Lestari.

CHALLENGES AND STRATEGIES FOR RICE PRICE STABILITY: A SYSTEMATIC REVIEW OF SUPPLY CHAIN DYNAMICS IN INDONESIA DURING CRITICAL PERIODS

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Abstract

The challenges of rice price stability in Indonesia, with a focus on critical periods such as Ramadan and Idul Fitri. Using a logical framework approach, we analyze the supply chain dynamics and its impact on price volatility. The study evaluates government policies, distribution networks, and production factors that affect rice prices The methods used include a systematic review of the literature and analysis of market data. Results showed that limited supply, surges in demand, and weak anticipation contributed to price instability during the holiday period. Key factors identified include production costs, logistical issues, and international market fluctuations. The study proposes strategies for price stabilization, including agricultural intensification, improved distribution systems, and strategic reserve management. The findings show that early anticipation, coordinated policies, and improved supply chain efficiency are crucial to maintaining rice price stability. The study also emphasizes the important role of the National Logistics Agency (Bulog) in managing national rice reserves and stabilizing market prices. The proposed strategy aims to achieve rice price stabilization in the 2025 Idul Fitri period and increase national reserves. In conclusion, a multidimensional approach involving various stakeholders is needed to address the complexity of rice price stability. This research provides valuable insights for policymakers and market players to reduce price volatility and ensure food security in Indonesia in a sustainable manner. [2]

Keyword: Rice Price Stability, Supply Chain Dynamics, Logical Framework, Price Volatility, Critical Periods

ANALYSIS AND IMPLEMENTATION OF THE USER-CENTERED DESIGN METHOD IN DESIGNING A WEB-BASED BIDDING PARTICIPATION INFORMATION SYSTEM: A CASE STUDY AT PT POS INDONESIA (PERSERO)

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Abstract

This research aims to design a web-based information system for monitoring PT Pos Indonesia's bidding participation activities using the User-Centered Design (UCD) methodology. The UCD approach ensures that the system is tailored to meet the needs and preferences of its users, thereby enhancing usability and user satisfaction. The study begins with a detailed analysis of the current bidding management processes at PT Pos Indonesia, identifying key challenges and requirements. Through iterative design and continuous user feedback, the proposed system is developed to streamline the bidding participation workflow, improve data accuracy, and facilitate better decision-making. The findings indicate that implementing a UCD-based information system significantly improves the efficiency and effectiveness of managing bidding activities. Users reported higher satisfaction levels due to the system's intuitive interface and enhanced functionality. Moreover, the system's ability to provide real-time data and analytics supports better strategic planning and operational decision-making. In conclusion, the study demonstrates that a user-centered approach to system design can lead to substantial improvements in both user experience and organizational performance. The web-based bidding information system developed for PT Pos Indonesia serves as a model for other organizations looking to enhance their bidding management processes through technology.

Keyword: User Centered Design, Bidding Management, Bidding Participation, System Information, UCD.

THE CRITICAL SUCCESS FACTORS (CSFS) & BARRIERS IN DIGITAL TRANSFORMATION (DT) IN LOGISTICS SERVICE PROVIDERS (LSPS) : LITERATURE REVIEW

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Abstract

This research aims to promote a deeper understanding of trends and advances in related literature, enabling the identification of CSFs and barriers faced by LSPs in facing digital transformation. The systematic literature review (SLR) method, also known as a systematic literature review, is a method that identifies, reviews, evaluates, and interprets every available piece of research. This method was used to compile this scientific article. The results of the research carried out were that there were 40 articles related to the analysis of digital transformation in LSPs. The conclusion is that based on the systematic literature review analysis carried out, it can be concluded that we found 19 Critical Success Factors and 16 Barriers in digital transformation in Logistic Service Providers. The most dominant CSFs discussed in the article are Collaboration among the parties in a supply chain, Aligning business & IT Strategies, Process Standardization & Data Integration. Meanwhile, the most dominant Barriers discussed are Lack of resources including skilled resources. High Investment & High Cost, Poor digital culture, Data protection & Security Breach, Lack of Highly qualified Specialists in digital logistics.

Keywords: Digital Transformation, Logistics Service Providers (LSPs), Logistic, systematic literature Review.

THE IMPACT OF DIGITAL TRANSFORMATION, LOGISTICS CAPABILITIES, LEADERSHIP TRANSFORMATION ON BUSINESS MODEL INNOVATION AND ITS IMPLICATIONS FOR COMPANY PERFORMANCE

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Abstract

This research investigates the impact of digital transformation, logistics capabilities, and leadership transformation on business model innovation, as well as their implications for company performance. Using a quantitative analysis approach, data are collected through surveys and analyzed using statistical techniques. The questionnaire was distributed to PT POS employees at the head office. The research results show a significant relationship between digital transformation, logistics capabilities, and leadership transformation with business model innovation. In addition, business model innovation was found to play an important role in improving company performance. The implications of these findings are discussed in the context of corporate development strategy and human resource management. This research provides important insights for business practitioners and academics in understanding the dynamics of change in today's digital and competitive era.

Keyword: Digital Transformation, Logistics Capabilities, Leadership Transformation, Business Model Innovation , Company Performance.

A LITERATURE REVIEW : ANALYSIS OF COURIER BUSINESS STRATEGIES IN FACING GLOBAL CHALLENGES

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Abstract

Indonesia's courier sector is expanding rapidly as a result of new technology such as e-commerce and shifting consumer behavior. The Courier Express Parcel (CEP) section accounts for more than half of total production, with a projected 12.55% increase in 2029. This study investigates the elements that influence profitability fluctuations, focusing on liquidity, company size, and appropriate capital structure. A future study should look into scale verification, customer patience impact, digitalization effects, implementation difficulties, and expectations for new technology. Optimisation strategies for courier dispatching systems and collaborative models are also covered. This study will be identified using a literature study with 12 articles selected between 2017 and 2022.

Keywords: Study Literature, Courier Business, Strategies, Global Challenges

APPLICATION OF BLOCKCHAIN TECHNOLOGY TO IMPROVE TRANSPARENCY AND TRACEABILITY OF FOOD SUPPLY CHAIN IN INDONESIA

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Abstract

This research aims to analyze the potential implementation of blockchain technology in improving the transparency and traceability of Indonesia's food supply chain and strengthening national food security and resilience. The problem identified is the need for more visibility in the food supply chain, leading to uncertainty regarding the origin and quality of food products. This research methodology uses a quantitative approach with data obtained through questionnaires to the public aged 20-27 years. This population was chosen because this age group is active in the use of technology. The questionnaire used a Likert scale model with 18 questions to measure attitudes, opinions, and perceptions of blockchain applications. Primary data were obtained directly from respondents, while secondary data were taken from literature studies and previous research. The results showed that blockchain can increase transparency and traceability in Indonesia's food supply chain. Blockchain can reduce the risk of fraud, make it easier to trace product origin and increase consumer confidence in food quality and safety. In addition, blockchain also provides economic benefits to producers and distributors by reducing operational costs and increasing efficiency. This study concludes that the adoption of blockchain technology in the food supply chain in Indonesia can have a significant positive impact on national food security and resilience. However, achieving these benefits requires collaboration between the government, private sector, and educational institutions to overcome technical, regulatory, and academic challenges. This research makes an essential contribution to understanding the potential of blockchain and offers recommendations for practical implementation in Indonesia.

Keywords: Blockchain, transparency, traceability, food supply chain.

LEVERAGING BLOCKCHAIN TECHNOLOGY TO IMPROVE FOOD SUPPLY CHAIN INTEGRITY IN INDONESIA : FROM FARM TO FORK

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Abstract

This research aims to analyze the potential implementation of blockchain technology in improving the transparency and traceability of Indonesia's food supply chain and strengthening national food security and resilience. The problem identified is the need for more visibility in the food supply chain, leading to uncertainty regarding the origin and quality of food products. This research methodology uses a quantitative approach with data obtained through questionnaires to the public aged 20-27 years. This population was chosen because this age group is active in the use of technology. The questionnaire used a Likert scale model with 18 questions to measure attitudes, opinions, and perceptions of blockchain applications. Primary data was obtained directly from respondents, while secondary data was taken from literature studies and previous research. The results showed that blockchain can increase transparency and traceability in Indonesia's food supply chain. Blockchain can reduce the risk of fraud, make it easier to trace product origin and increase consumer confidence in food quality and safety. In addition, blockchain also provides economic benefits to producers and distributors by reducing operational costs and increasing efficiency. This study concludes that the adoption of blockchain technology in the food supply chain in Indonesia can have a significant positive impact on national food security and resilience. However, achieving these benefits requires collaboration between the government, private sector, and educational institutions to overcome technical, regulatory, and academic challenges. This research makes an essential contribution to understanding the potential of blockchain and offers recommendations for practical implementation in Indonesia.

Keywords: Blockchain, transparency, traceability, food supply chain.

APPLICATION OF TIME SERIES DEMAND FORECASTING USING THE POM FOR WINDOWS APPLICATION TO DETERMINE STAMP DUTY SALES BY POS INDONESIA

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Abstract

A stamp duty is evidence of tax payment, typically in the form of a label affixed to specific documents to indicate that the relevant tax or duty has been paid. Stamp duties are used for various legal and administrative purposes, including contracts, powers of attorney, deeds, and agreements. The use of stamp duty aims to provide legal validity to documents and serves as a source of government revenue. Recently, the Directorate General of Budgeting, as the issuer of official stamp duty, was alarmed by the issue of "Fake Stamp duty," which has seen significant sales, even on online marketplaces. Pos Indonesia, tasked with distributing and selling official stamps, feels obligated to help minimize this criminal activity. One of the reasons for the emergence of counterfeit stamps is unmet demand in certain areas that go undetected by the government and Pos Indonesia. To address this, they have implemented demand forecasting. The goal of forecasting is to determine future sales forecasts to meet consumer demand, allowing for strategic sales planning. Based on the forecasting results using the POM for Windows application, the Time Series forecasting calculations were performed using the Naive Method, Moving Average Method, Exponential Smoothing Method, and Trend Projection Method, as shown in Table 2. The Forecast Error Comparison indicates that the best method among the four is the Trend Projection Method, with a Mean Absolute Deviation (MAD) of 2,348,682, Mean Squared Error (MSE) of 1,892,160,000,000, and Mean Absolute Percentage Error (MAPE) of 0.06%. The forecast for the next month is 47,543,540 pieces/sheets of stamps. This forecast serves as the basis for decision-making in formulating the Annual Work and Budget Plan (RKAP) for Pos Indonesia in 2024. Effective and efficient planning is crucial for minimizing company risks.

THE INFLUENCE OF LOGISTICS QUALITY SERVICE ON CUSTOMER SATISFACTION AND LOYALTY AT PT POS INDONESIA MAIN BRANCH OFFICE BANDUNG

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Abstract

PT Pos Indonesia (Persero), abbreviated as POS IND, is a state-owned enterprise whose business is to provide postal and courier services. To support its business activities, until the end of 2021, POS IND has 6 Regional Office units, 42 Main Branch Office units, and 168 Branch Office units spread throughout Indonesia. During the year 2023, POS IND Bandung Main Branch Office achieved revenue from mail and package services of 86% of the target set by the Company. Based on data obtained from POS IND Bandung Main Branch Office, there are reports of complaints or complaints through Customer Service at the Bandung Main Branch Office during 2023 as many as 383 complaints or complaints received by Customer Service officers, which include complaining that there are still delivery delays, packages that have been sent are not picked up, packages are held at drop points, wrong package delivery, inaccurate tracking and no updates by the company. Therefore, service quality is one of the important factors that can affect customer satisfaction. This study aims to determine the effect of Logistics Service Quality at POS IND Bandung Main Branch Office on customer satisfaction and customer loyalty at POS IND Bandung Main Branch Office. Data processing is done using a quantitative approach and this type of research is causal research. The variables used in this study are logistics service quality, customer satisfaction, and customer loyalty. The data analysis technique used is SEM analysis using the SPSS and AMOS programs. This study uses a sample of respondents who have made transactions or sent packages and/or documents at POS IND Bandung Main Branch Office with the number of samples used being 135 respondents. The results of this study indicate the influence of Logistics Service Quality on customer satisfaction and customer loyalty at POS IND Bandung Main Branch Office.

Keywords: Logistics Service Quality, Customer Satisfaction, Customer Loyalty, Structural Equation Modeling

INTEGRATING ADVANCE TECHNOLOGY AND LOGISTICS CUSTOMER SERVICE FOR OPTIMAL LOGISTICS PERFORMANCE: A STUDY AT SHOPEE EXPRESS PANGALENGAN BRANCH

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Abstract

The expansion of e-commerce has elevated the importance of package tracking and delivery for logistics companies, who now combine cutting-edge technology with customer-focused services. This study examines the integration of Advance Technology (AT) and Logistics Customer Service (LCS) to optimize Logistics Performance (LP) at Shopee Express Pangalengan Branch. This research employed an explanatory cross-sectional survey approach, gathering data through questionnaires administered to 96 Shopee Express users located in Pangalengan. The study utilized Partial Least Squares Structural Equation Modeling (PLS- SEM) for data analysis. Findings revealed that both Advanced Technology and Logistics Customer Service significantly and positively impact Logistics Performance. Advance Technology contributes through improved operational efficiency and shipment visibility, while Logistics Customer Service improves customer satisfaction and loyalty. The findings confirm the importance of integrating advanced technology and superior customer service in e- commerce logistics strategies. Practical implications include recommendations for continued investment in technology and improved customer service quality that enable e- commerce logistics companies to optimize their performance in the digital age.

Keywords: Advance Technology, Logistics Customer Service, Logistics Performance, E-commerce Logistics, PLS-SEM.

THE IMPACT OF AMBIDEXTROUS LEADERSHIP, LOGISTICS ORGANISATIONAL CULTURE, LOGISTICS ORGANISATIONAL STRUCTURE , ON LOGISTICS INNOVATION AND ITS IMPLICATIONS FOR COMPANY PERFORMANCE PT POS INDONESIA BANGKALAN BRANCH OFFICE

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Abstract

The author conducted a study on the performance of PT Pos Indonesia Bangkalan Branch Office 69100, focusing on parcel revenue in 2023. The parcel revenue recorded was IDR 3,015,510,283 from a target of IDR 3,666,031,000, which means only 82.26% of the target was achieved. The failure to meet the target indicates a performance issue at PT Pos Indonesia Bangkalan Branch Office 69100. The author conducted the study titled "The Impact of Ambidextrous Leadership, Logistics Organisational Culture, and Logistics Organisational Structure on Logistics Innovation and Its Implications for the Performance of PT Pos Indonesia Bangkalan Branch Office." The population was 229 customers, with a sample size of 146 respondents determined based on the Slovin formula. All indicators had values greater than 0.7 and were declared valid. All dimensions had Cronbach's Alpha values above 0.7 and were declared reliable. There was a positive and significant influence of Ambidextrous Leadership on Logistics Innovation with a path coefficient value and a p-value of 0.001. There was a positive and significant influence of Logistics Organisational Culture on Logistics Innovation with a path coefficient value of 0.207 and a p-value of 0.010. There was a positive and significant influence of Logistics Organisational Structure on Logistics Innovation with a path coefficient value of 0.253 and a p-value of 0.034. There was a positive and significant simultaneous influence of Ambidextrous Leadership, Logistics Organisational Culture, and Logistics Organisational Structure on Logistics Innovation with an R Square value of 0.577. There was a positive and significant influence of Logistics Innovation on the Performance of PT Pos Indonesia Bangkalan Branch Office with a path coefficient value of 0.762 and a p-value of 0.000. PT Pos Indonesia Bangkalan Branch Office should continue to innovate to increase revenue

Keywords: Ambidextrous Leadership, Logistics Organisational Culture, Logistics Organisational Structure, Logistics Innovation , Company Performance

RISK MANAGEMENT DESIGN IN OPTIMIZING EMPLOYEE PERFORMANCE WITH THE APPROACH OF ENTERPRISE RISK MANAGEMENT (ERM)

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Abstract

In running a company will definitely face risks. Risks that arise come from the external environment and the internal environment of the company that makes the company suffer losses. The research method used is a descriptive qualitative research method with journal literature study data collection techniques. In this study using the Enterprise Risk Management (ERM) method. In applying this method, it starts by identifying risks, conducting performance assessments and controlling risks. With the application of the Enterprise Risk Management (ERM) method, the company can find the risks that occur in the company based on the categories of low, medium, high. The purpose of this study is to identify the risks that may occur in the Company and then create a risk matrix to determine the risk constraints that occur based on the lowest to heaviest order for control prioritisation. The results showed that the dominant risk that occurred in the company was delayed delivery of nuggets, stale nuggets when the freezer died, work accidents occurred during work, damage to vehicles transporting nuggets.

Keywords: Risk Management, Enterprise Risk Management

THE IMPACT OF EXPORT PARCEL PRICE, PARCEL SERVICE QUALITY, AND LOGISTICS SERVICE INNOVATION ON PURCHASING DECISIONS AND THE IMPLICATIONS FOR COMPANY PERFORMANCE AT PT POSIND KCU DENPASAR

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Abstract

The author conducted a study on the Export Parcel revenue performance at PT PosIND KCU Denpasar, which has been continuously declining from 2022 to 2024. The ongoing decrease in revenue indicates an issue that will impact the performance of PT PosIND KCU Denpasar. This research aims to determine the effect of Export Parcel Price, Parcel Service Quality, and Logistics Service Innovation on Company Performance with Purchasing Decision as an intervening variable. The method used in this causal research is PLS-SEM with data analysis using SmartPLS software. The population consists of 270 customers, and the sample size determined using the Slovin formula is 161 customers. The load factor and Cronbach's Alpha values for all variables are above 0.700, indicating that all data are valid and reliable. The research results show a positive influence of Export Parcel Price on Purchasing Decision, with a T Statistics value of 3.348 > 1.96 and a p-value of 0.001. There is a positive influence of Parcel Service Quality on Purchasing Decision, with a T Statistics value of 2.473 > 1.96 and a p-value of 0.032 < 0.050. There is a positive influence of Logistics Service Innovation on Purchasing Decision, with a T Statistics value of 2.301 and a p-value of 0.032 < 0.05. The study results indicate an R Square value of 0.553, meaning there is a positive and significant effect of Export Parcel Price and Parcel Service Quality on Purchasing Decision. Additionally, there is a positive and significant effect of Purchasing Decision on Company Performance, with a T Statistics value of 12.987 > 1.96 and a p-value of 0.000 < 0.05. PosIND must continue to innovate its services to acquire customers from competitors and increase revenue.

Keywords: Export Parcel Price, Parcel Service Quality, Logistics Service Innovation, Purchasing Decision, Company Performance

THE IMPACT OF DEDICATED STORAGE AND CLASS-BASED STORAGE METHODS ON THE WAREHOUSE LAYOUT OF KPK POSIND JAKARTA CENTRUM ON THE DISTANCE AND TIME OF ITEM MOVEMENT

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Abstract

The Directorate of Social Community of the Corruption Eradication Commission (KPK) collaborates with PosIND in the distribution of socialization materials to various regions in Indonesia. These materials are temporarily stored in the KPK PosIND warehouse at Jakarta Centrum before distribution. Observations of the warehouse conditions revealed several issues, including the lack of clear labeling and grouping of items, poor cleanliness, and an unstructured layout, which hinder workflow efficiency. This study aims to analyze the impact of the warehouse layout at KPK PosIND Jakarta Centrum using dedicated storage and class-based storage methods on the distance and time of item movement. The study results indicate that changes in the warehouse layout using dedicated storage and class-based storage methods led to a reduction in item movement distance by up to 59.38% and item movement time by up to 57.2%. Therefore, changes in the warehouse layout significantly reduce the distance and time of item movement.

Keywords: warehouse layout, dedicated storage, warehouse efficiency, warehouse management

PROPOSED LOGISTICS DISTRIBUTION PATTERN FOR REGIONAL HEAD ELECTION IN BULUKUMBA REGENCY : CASE STUDY OF REGIONAL HEAD ELECTION

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Abstract

The General Election Commission (KPU) of Bulukumba Regency is an institution that organizes general elections as stipulated by law governing the conduct of general elections in Bulukumba Regency. One of the crucial stages for the successful organization of elections is the accurate and efficient distribution of election logistics. The KPU of Bulukumba Regency needs to conduct mapping and understand the characteristics of the area to facilitate the determination of distribution patterns, distribution scheduling, mode of transportation, budget preparation, and collaboration with relevant agencies. PT. Pos Indonesia Bulukumba Branch, as a State-Owned Enterprise engaged in courier and logistics services, can provide solutions for the KPU Bulukumba in selecting transportation modes, scheduling distributions, and determining optimal logistic distribution routes for the 2024 Regional Head Election in Bulukumba Regency using the capacitated vehicle routing problem approach by considering distances from Google Maps and using the nearest neighbor algorithm to determine the shortest distance between points. The proposed distribution pattern provided by PT. Pos Indonesia Bulukumba Branch includes four (4) units of CDD Box, three (3) units of CDD Long Box, and 1 unit of CDE Engkel. The route used is 6 routes with a total of 3 trips, and the distribution schedule is carried out in 1 day starting in the morning with an estimated completion of distribution and all transportation modes returning to the KPU warehouse in the evening.

Keywords: Election logistics distribution, distribution pattern, capacitated vehicle routing problem, nearest neighbor

INTERNET OF THINGS (IOT) ADOPTION IN SUPPLY CHAIN AND LOGISTICS MANAGEMENT: A LITERATURE REVIEW

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Abstract

Internet of Things adoption is affecting carbon emission in the supply chain and logistics sector. Much of the focus surrounding the Internet of Things adoption has targeted the technology and organization in the supply chain and logistics sector. A few systematic reviews have been carried out on the impact of the Internet of Things adoption in environmental aspects among supply chain and logistics practitioners. The present article sets out to examine the existing literature on Internet of Things (IoT) adoption towards the impact of carbon emission in the supply chain and logistics sector. With guidance from the PRISMA Statement (Preferred Reporting Items for Systematic reviews and Meta-Analysis) review method, a systematic literature review within two databases, the Scopus and Web of Science identified nineteen related studies. Further review of these articles provides insight into the focused issues of the impact of the Internet of Things adoption on supply chain and logistics according to the clarification of findings for each article. The outcome shows that, although an increase on the internet of things adoption practices in supply chain and logistics can be perceived, the only technical context has been extensively discussed in the literature. In particular, the management context is less researched and provides an opportunity for further study. Several suggestions are highlighted like conducting more studies that are related with the management perspective on the Internet of Things Adoption on low carbon supply and logistics and to have precise and a standard systematic review method for guide research synthesis in the context of internet of things adoption in low carbon supply chain and logistics management.

KEYWORDS: Internet of Things (IoT), Adoption, Carbon Emission, Low Carbon Logistics, Environmental

THE EFFECT OF EXPRESS MAIL SERVICE (EMS) TARIFF, DIRECT FLIGHT, AND LOGISTICS COMPETENCE ON SERVICE QUALITY AND THE IMPLICATIONS FOR COMPANY PERFORMANCE AT PT POSIND KCU DENPASAR

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Abstract

Express Mail Service (EMS) revenue at PT PosIND Main Branch has experienced a decline, indicating performance issues within the company. The author intends to investigate the influence of EMS Tariff, Direct Flight, Logistics Competence on Service Quality, and the influence of Service Quality on Company Performance. The research results indicate that the average values of all variables range from 2.760 to 3.448, categorizing them as variables that are not yet very good but suitable for investigation. The load factor values for all variables are above 0.700, indicating that all data for all variables are valid. The Cronbach's Alpha values are above 0.700, confirming that all data for all variables are reliable. The research findings reveal that the T-statistics value for EMS Tariff is 3.434, where T- statistics > 1.96 and p-value = 0.001, indicating a positive and insignificant influence of EMS Tariff on Service Quality. There is a positive and significant influence of Direct Flight on Service Quality, with a T-statistics value of 2.277 > 1.96 and a p-value of 0.023 < 0.050. There is also a positive and significant influence of Logistics Competence on Service Quality, with a T-statistics value of 2.661 and a p-value of 0.000 < 0.05. The research results further explain that the R-square value is 0.612, indicating a positive and significant influence of EMS Tariff, Direct Flight, and Logistics Competence on Service Quality. There is a positive and significant influence of Service Quality on Company Performance, with a T-statistics value of 13.132 > 1.96 and a p-value of 0.000 < 0.05. It is advisable to establish direct flight transportation from Denpasar to cities in Australia without passing through Jakarta Soekarno-Hatta and Singapore.

Keywords: Express Mail Service (EMS) Tariff, Direct Flight, Logistics Competence, Service Quality, Company Performance

THE ROLE OF DYNAMIC LOGISTIC CAPABILITIES WHICH IS INFLUENCED BY CUSTOMER EXPERIENCE AND OPERATIONAL EXCELLENCE FOR PT POS INDONESIA REGIONAL WEST JAVA

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Abstract

This research aims to determine and analyze the influence of Customer Experience and Operational Excellence on the Dynamic Logistic Capabilities of PT Pos Indonesia (Persero) West Java. The type of research used in this research is quantitative research. The data collection method was carried out by interviews, with a list of questions (questionnaire). The population in this study were customers of PT Pos Indonesia (Persero) located in 20 cities and districts in West Java Province. The research sample used the sampling / census method. In this study the number of respondents from the population was relatively small, namely 55 people. Data processing was carried out using Partial Least Square SEM (SmartPLS), which resulted in a positive and significant influence between customer experience (X1) and Operational Excellence (X2) on the Dynamic Logistic Capabilities (Y) of PT Pos Indonesia (Persero) West Java.

Research Paper
Social Science

CONSUMER RIGHTS: WHAT CONSUMERS SHOULD KNOW IN DEALING WITH E-COMMERCE TRANSACTIONS

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Abstract

The use of online platforms for shopping has significantly increased and has emerged as a popular trend and a convenient way to buy goods without the need to leave home. Consumers can easily browse through websites or any relevant social media platforms and make purchases without having to physically visit stores. Nevertheless, the intricate landscape of e-commerce can create uncertainty regarding consumers' legal rights. This research explores the persistent obstacles of online shopping through social media channels such as Shopee, Instagram, TikTok, and Facebook, emphasizing crucial details for consumers to uphold their legal rights. It cites pertinent legislation related to online purchasing concerns to offer insights into consumer protections. The data collection was through library research. The library research was conducted to seek relevant information. All collected data was analyzed using legal doctrinal methods. All data collected mainly include textbooks and journal articles by scholars to constitute the legal basis of this study by critically analyzing the various opinions expressed in these materials. Thus, the findings of this study may represent the consumers' capacity to make well-informed decisions to safeguard their rights and play a role in indirectly building a robust contemporary society relating to e-commerce transactions.

Keyword: Law, Consumer Protection, E-commerce

TAHAP PENGUASAAN KEMAHIRAN GENERIK PELAJAR KOLEJ KOMUNITI WILAYAH SARAWAK DALAM PROSES PENGAJARAN DAN PEMBELAJARAN MELALUI KURSUS MPU

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ABSTRAK

Various initiatives and approaches to improve the generic skills of students in institutions of higher learning have been carried out, but issues related to weaknesses in the mastery of generic skills among graduates are still often emphasized by the industry in the career realm. The purpose of this study was to examine the extent to which students in Sarawak Regional Community Colleges mastered the generic skills in the teaching and learning process through General Courses (MPU) as well as the significant difference between the students who followed the ten (10) programs offered at Sarawak Regional Community Colleges. The design of this study was quantitative involving 321 community college students throughout Sarawak Province through a simple random sampling method. Questionnaire instruments were adapted and available (Amiruddin et al., 2016), (Norzailawati Mohd Nor et al., 2008) and (Othman & Syed Ali, 2019). The data of this study was analyzed through Statistical Package for Social Science (SPSS) version 27.0 and presented in the form of mean score, standard deviation, One-way ANOVA test, and Post Hoc test. The results of the analysis showed that the mean level of mastery of generic skills of Sarawak Regional Community College students in the teaching and learning process through the MPU course is at a high level (mean = 4.12, SP = 0.40). There was a significant difference in the level of mastery of generic skills of Sarawak Regional Community College students. This study can be used as a guide and reference for the Curriculum Division, Department of Polytechnic Education and Community College (JPPKK) for the implementation of the current curriculum and the MPU unit at Sarawak Regional Community College especially to improve the curriculum that is being implemented for all MPU Courses.

Keyword: Generic Skills, General Courses (MPU)

MODERN LANDSCAPE DESIGN APPROACH FROM MALAY TRADITIONAL ARCHITECTURE

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Abstract

Landscape architecture is defined as an activity of the arrangement of open spaces, aiming to add natural elements that could not be found in urbanized landscapes. Malaysia is known for its diversity of cultures which has a high impact on landscape architecture design. Cultural landscape or adding cultural elements into designing a landscape is the most complex since it involves the interactions between man, nature, cultural values, and the associated built environment. The traditional Malay Landscape involves a balanced interaction between these aspects which contains unique and interesting features for each state in Malaysia. The landscape design characteristics for each state in Malaysia have unique features that slightly differentiate them from each other. In Malaysia, there are 13 states and each state has its unique landscape architecture that symbolizes its unique customs and culture. This study covers several objectives that comprise the characteristics of Malay culture on landscape architecture design and explore Malay culture characteristics in landscape architecture. Several questions have been raised to derive this study such as the artistic value of landscape architecture that portrays Malay symbolism, how Malay culture influences landscape architecture, and the importance of preserving the traditional Malay design in landscape architecture. This study has been conducted through interviews by selecting several expert persons in landscape architecture fields and analyzed by Nvivo software, Version 4. Findings show most of the expert persons agreed the main element that should be considered in landscape architecture design with Malay architecture can be divided into several elements such as hardscape, softscape, arrangement, and functional. The most priority parts are hardscape and functional elements. To improve and extend this study, the identification of elements can be blended with current innovation materials slightly has similarities with traditional architecture design.

Keyword: Landscape Architecture, Malay Traditional Architecture

THE IMPACTS OF ONLINE LEARNING ON STUDENT'S SATISFACTION

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Abstract

Online learning has become the new normal in many educational institutions today. Satisfaction with online learning is a significant aspect of contributing to successful educational processes. There are a few factors contributing to the satisfaction. Consequently, this study aims to evaluate the level of instructors, interaction, and technology in online learning. Additionally, correlation research is conducted to see if there is a connection between the instructors. interaction and technology (independent variables) on student satisfaction (dependent variable). In this study, data were gathered using a questionnaire as part of a survey approach and a quantitative research design. 150 students were selected randomly, and the respondents were the students from the Commerce Department (Politeknik Nilai). The findings show that generally the factors highly contributed to the student's satisfaction with online learning. Considering the outcomes of this, some recommendations have been suggested to improve on the part that they are weak on so that it becomes better in future online learning.

Keywords: Instructor, Interaction, Technology, and Online Learning.

DEVELOPMENT OF TOFU SAUSAGE TOMYAM

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Abstract

Tofu sausage tomyam is the development of a meat-free food innovation product which is a sausage based on tofu from soybean products and tomyam paste. The combination of tofu and tomyam paste in making sausage is rich in nutrition and low in calories. This is in contrast to commercial sausages which are a mixture of processed meat, including internal organs, and contain preservatives that can increase the risk of various diseases and cancer. A study was done by investigating three (3) formulations developed which are F1, F2, and F3. The determination of the best formulation was done based on the results of a hedonic test conducted on 30 untrained panelists. The attribute values analyzed are in terms of colour, aroma, texture, taste, and overall acceptance. The sensory test for all formulations reveals that these products were acceptable with the highest rating among the formulations from the F2. In addition, a market study was also conducted on this product with a total of 41 respondents involved. In this study, a questionnaire was used as a research instrument and the data collected were analyzed with the Statistical Package for Social Sciences (SPSS 21.0) statistical program in the form of descriptive values. 75.6% of the respondents agreed that the sausages in the market contain ingredients that cause disease. The result of the study also found that 92.7% of respondents agreed tofu sausage tom yam is nutritious. This study demonstrated the potential of tofu and tomyam paste to be processed into sausages which is acceptable and can be beneficial in many ways due to their high value as a source of nutrients as well as a healthier alternative product for consumers.

Keywords: Tofu, Tom Yam, Sausage, Meat-Free Products

THE EFFECT OF AUDIT EXPERIENCE AND AUDITORS' PROFICIENCY ON TAX AUDIT PERCEPTIONS: PERSPECTIVE OF SMES IN MALAYSIA

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Abstract

Tax audit is an essential part of the tax assessment system. In Malaysia, the Inland Revenue Board of Malaysia (IRBM) focuses on a combination of enforced and voluntary compliance in its tax audit approach. Considering that there is an increased emphasis by the IRBM on using a soft approach strategy in conducting tax audits, this study aims to identify the effect of tax audit experience and proficiency of tax auditors on tax audit perceptions. The data was collected through online questionnaires and the 54 responses from small and medium enterprises (SMEs) were analysed using SPSS. The results indicate that the SMEs have a favorable experience with tax audits, and they claimed that the tax audit process was transparent and did not take too long to settle. In addition, the SMEs did not agree with the fact that tax auditors are likely to be more interested in finding mistakes and penalising the company than helping to do the right thing. The SMEs viewed the fairness of the tax audit process and assistance provided by tax auditors positively. As they highly believe that they are treated respectfully during the audit process, they will perceive the tax audit positively. All these findings indicate that SMEs have had a positive perception of IRBM's current tax audit practices over the past five years, as IRBM has emphasized elements of awareness, education and services in all tax activities as well as in the introduction of the tax amnesty programme. It is interesting to note that these findings are different from what has been found in the literature, which showed that taxpayers had strong negative perceptions towards tax audits. These findings extend some of the literature on tax audits in Malaysia and provide IRBM with some current insights on how it can strengthen its tax audit activities.

Keywords: Tax Audit Perceptions, Audit Experiences, Proficiency Tax Auditors

RETAIL MANAGEMENT EDUCATION IN MALAYSIA: IDENTIFYING AND INTEGRATING ESSENTIAL SKILLS

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Abstract

The primary objective of this research is to identify the key retail skill sets among retail management students at Malaysian Polytechnics. This is crucial to ensure that graduates are adequately prepared to manage a retail business effectively and contribute to economic sustainability. A focus group discussion was conducted involving: one senior officer from the Curriculum Division of JPPKK, and two senior lecturers from Politeknik Nilai with expertise in retail management. The discussion lasted one and a half hours. The interview transcripts were translated, transcribed, and analyzed to extract key findings. The perspectives of both academicians and retail industry practitioners were extracted from the interview transcripts. The main skills identified were interpersonal, communication, numeracy, analytical, knowledge, practical, and leadership skills. The transcripts were analyzed using Word Cloud software to confirm the frequently mentioned skills during the discussion. A follow-up survey was conducted with the focus group panel to reach a consensus on the most important skills from an academic perspective. The academicians ranked the essential skills as follows: knowledge skills, communication skills, and practical skills. Meanwhile, industry input highlighted a different set of priorities: communication skills as the most essential skills, with leadership skills as the least important skills. This study highlights the disparity between academic and industry perspectives on the essential skills for retail management students. By addressing these findings, Malaysian Polytechnics can better prepare retail management students to meet industry demands and contribute effectively to the retail sector and the broader economy.

Keyword: Retail Management Skills, Workforce Preparedness, Academic-Industry Alignment, and Malaysian Polytechnics

STUDENTS' INTENTION TOWARDS SUSTAINABILITY: THE MODERATING ROLE OF EMOTIONAL INTELLIGENCE

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Abstract

Education plays a crucial role in the foundation of a civilized society. A thriving civilization prioritizes the development of its future leaders, nurturing them to embrace compassion and open-mindedness while instilling an appreciation for history and the pursuit of a brighter future. An individual's worldview is fundamentally altered through education, which increases their tolerance. Nevertheless, when we talk about sustainability, it goes beyond education. Thus, the objective of this cross-sectional study is to explore the potential influence of students' beliefs and attitudes on their intention toward sustainability. The research investigates the relationship between emotional intelligence and sustainability, as well as the interplay between these variables. A survey was carried out on a sample of 196 students from the Commerce Department, Politeknik Muadzam Shah, Pahang. To collect the data, a 26-item questionnaire was created. Using SPSS (Statistical Package for The Social Sciences), data was gathered and descriptively examined. The findings indicate that those students who have higher emotional intelligence have a greater desire to learn about sustainability. This implies that emotional intelligence has a direct impact and could be an important factor as a moderator variable to increase their intention to practice sustainability. Furthermore, to build a more sustainable future for all, it was recommended to foster emotional intelligence in individuals.

Keywords: Belief, Attitude, Intention, Emotional Intelligence, Sustainability

LITERASI KEWANGAN PELAJAR DIPLOMA PENGAJIAN PERNIAGAAN JABATAN PERDAGANGAN POLITEKNIK UNGKU OMAR

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[1,2]Jabatan Perdagangan, Politeknik Ungku Omar, Perak Malaysia

Abstrak

Kenaikan harga secara berterusan menyebabkan peningkatan kos sara hidup di pelbagai peringkat usia terutama golongan yang berpendapatan tetap dan golongan yang tiada pendapatan seperti pelajar di institusi pengajian tinggi. Kehidupan sebagai pelajar wang menjadi keperluan untuk memenuhi tuntutan sebagai seorang pelajar iaitu membeli buku rujukan, alat tulis, perbelanjaan makan seharian, rumah sewa dan juga yuran pengajian. Pelajar perlu bijak dan mempunyai kemahiran dalam menguruskan kewangan di saat situasi ekonomi di Malaysia yang tidak menentu. Kemahiran literasi kewangan penting untuk mengelakkan berlakunya kes kebankrapan apabila melalui fasa bekerja kelak. Objektif kajian ini adalah untuk mengkaji tahap literasi kewangan dalam kalangan pelajar (pengetahuan kewangan, tingkah laku pengurusan kewangan, pengalaman kewangan) dan mengkaji kefahaman pelajar tentang konsep keperluan dan kehendak. Kaedah analisis deskriptif digunakan dalam kajian ini, borang soal selidik secara google form sebagai instrumen dan diedarkan secara dalam talian kepada pelajar. Sampel kajian melibatkan seramai 110 orang responden dimana terdiri daripada pelajar Diploma Pengajian Perniagaan yang telah mengambil kursus Microeconomics dan Macroeconomics di Jabatan Perdagangan Politeknik Ungku Omar. Hasil kajian mendapati tahap pengetahuan kewangan dan tahap tingkah laku pengurusan kewangan berada pada tahap tinggi. Walaubagaimana pun item tahap pengalaman kewangan berada pada tahap yang sederhana. Hasil kajian ini juga mendapati, pengetahuan mengenai konsep keperluan dan kehendak dalam kalangan pelajar adalah sangat baik. Selain itu skor min tertinggi ialah tahap pengetahuan kewangan. Oleh itu, kajian ini diharap dapat membantu pelajar dalam menguruskan perbelanjaan kewangan harian mereka pada masa akan datang.

Kata kunci: Literasi Kewangan, Pengetahuan Kewangan, Keperluan dan Kehendak

BOLD EFFECTS OF BIOFEEDBACK TRAINING ON HEART RATE VARIABILITY AND PERFORMANCE OF COLLEGE GOLF PLAYERS

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Abstract

The purpose of this study is to conduct a 4-month experiment using biofeedback training on golf athletes, analyzing its effects on golf performance, and HRV indicators of golf athletes. Results indicate that the performance of the dexterity project in time domain indicators (SDNN, RMS-SD, PNN50) and frequency domain indicators (TP, LF, LF/HF, LFnorm) were significantly lower than those of the Bodhi tree and archery projects, among which the decreases in SDNN, RMS-SD, PNN50 and TP, LF, LF/HF, and LFnorm reached very significant levels ($p<0.01$), while HFnorm was very significantly higher than the other two groups ($p<0.01$). In addition, the VLF index in the dexterity project was significantly lower than that in the archery project ($p<0.05$). In the later training, the time domain indicators (SDNN, RMS-SD, PNN50) and the frequency domain indicator TP of the Bodhi tree and archery projects were significantly improved ($p<0.01$ and $p<0.05$), while the LF/HF ratio and LFnorm gradually decreased over time, while HFnorm gradually increased. In the Bodhi tree and archery events, the time domain indexes in the middle training period were significantly lower than those in the early training period ($p<0.01$ and $p<0.05$), while the LF/HF ratio was higher in the middle training period than in the early training period. After continuous training, the time domain indexes in the late training period were significantly higher than those in the early training period ($p<0.01$ and $p<0.05$). Long-term biofeedback training can positively affect the performance of golfers to a certain extent. Through biofeedback training, they can improve their self-regulation ability and their sports performance.

Keyword: Biofeedback Training; Heart Rate Variability; Sports Performance; Collegiate Golfers

LEVELS OF STUDENT INVOLVEMENT IN GREEN PROGRAMS AND THEIR IMPACT ON ENVIRONMENTAL STEWARDSHIP ATTITUDES

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Abstract

Environmental harm issues have recently received much attention in the media and studies. Many Green Programs have been implemented to enhance student understanding, either by higher education institutions or industry, functioning as indirect initiatives to raise awareness of green technologies and environmental problems. As a result, researchers determined that it was critical to undertake a study to examine the amount of involvement in green programs and to determine the influence of student participation in green programs on environmental attitudes. The participants in this study were students from Politeknik Muadzam Shah. 121 respondents from the Department of Commerce completed a set of questionnaires provided online. A questionnaire was employed as the data collection tool. This study is a quantitative study. Descriptive analysis was the analysis technique employed, and SPSS v.26 software was used. This research shows that student involvement in green programs is moderate. Nonetheless, respondents agreed that green programs favorably influence their views about environmental care. Therefore, this study concludes that green initiatives should be offered with more engaging activities to increase student participation.

Keywords: Student Involvement, Green Programs, Environment.

ISLAMIC DIGITAL MARKETING TEMPLATE FOR ASNAF IN PERLIS

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Abstract

The rise of social media marketing has transformed how businesses connect with their audiences, play as medium of engagement, inform, and build relationships with consumers. However, the basic marketing mix elements of the 4Ps—Product, Price, Place, and Promotion can be applied in social media marketing to form new strategy in marketing which is known as digital marketing. In addition, integrating Islamic value in digital marketing is one of the initiatives to support the economy of Perlis, particularly for the asnaf. Product strategies should focus on providing Halal and Tayyib products that meet the specific needs of the asnaf, ensuring ethical and wholesome offerings. Price strategies must emphasize fairness and justice, incorporating Islamic principles like Zakat to make essential goods affordable for the underprivileged. Place involves creating distribution channels that ensure accessibility for the muslim community, leveraging local mosques and community centers to reach rural and marginalized areas. Promotion should adhere to ethical marketing practices, promoting honesty and integrity, and utilizing community outreach to build trust and awareness. Thus, this innovation contributes in developing an Islamic digital marketing template in order to assist asnaf in their business activities. This innovation proves in promoting Visit Perlis 2024. The template is ready through hardcopy and softcopy which act as reference and copy editing. This template benefited asnaf by increasing their knowledge, give awareness about the digitalization phase and drive them to use Islamic digital marketing. Besides, this template has potential to be commercialize to infant entrepreneurs, micro businesses and youth entrepreneurs.

Keywords: Digital, Islamic marketing, asnaf

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Abstract Compilation
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Innovation

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4	i-RIC2024_PI-022	SensEnergy: Harnessing Human Sensing for Energy Efficiency with IoT
5	i-RIC2024_PI-037	The Development of Digitronics Trainer as a Teaching Aid for Digital Electronics Course in Sultan Haji Ahmad Shah Polytechnic
6	i-RIC2024_PI-039	Multi Purpose Cleaning Robot with AI:Pureshine
7	i-RIC2024_PI-056	Biosorption and Decolorization of Dyes Using Expired King Oyster Mushroom
8	i-RIC2024_PI-057	Water Sample Collector
9	i-RIC2024_PI-077	Voice Link Trainer for Fiber Optic Communication
10	i-RIC2024_PI-078	Semi-Auto Currypuff Crimping Machine For Medium-Sized Industries

Innovation

Health and Life Science		
1	i-RIC2024_PI-015	Innovation in Bone Implant: No More Second Surgery After Bone transplantation
2	i-RIC2024_PI-035	PP Fermented Burger
3	i-RIC2024_PI-043	A Comparative Study of Pre-Germination for Improvement Quality of Mung Bean Sprout
4	i-RIC2024_PI-044	SugarPine Paper
5	i-RIC2024_PI-045	Baxtiles : Bacterial Cellulose-based Textiles
6	i-RIC2024_PI-049	The Effectiveness of Wood Vinegar As An Organic Pesticides
7	i-RIC2024_PI-058	Inclusive Design Planter Box

Information Communication Technology		
1	i-RIC2024_PI-016	ePolikuExam System
2	i-RIC2024_PI-026	Integrated Asset Management System (IAMS)
3	i-RIC2024_PI-042	My Selenggara@POLYCC
4	i-RIC2024_PI-053	Monitoring Dashboard (i-MONITOR_FE@POLYCC)

Innovation

Logistic and Supply Chain Management		
1	i-RIC2024_PI-052	Solar Fushion Pro
2	i-RIC2024_PI-067	Pure Wood Soap

Social Science		
1	i-RIC2024_PI-005	A Virtual Holographic Prayer Mat for Muslim
2	i-RIC2024_PI-012	Digital Marketing Communications Strategy The Arista Hotel Palembang After Pandemic
3	i-RIC2024_PI-020	Paper Wallets: Sustainable Event Souvenirs
4	i-RIC2024_PI-025	Magnifera Calamansi Flakes
5	i-RIC2024_PI-032	MyLPsolver
6	i-RIC2024_PI-040	Biodegradable Palm Container (BioPaC)
7	i-RIC2024_PI-069	EcoBanana GrowMedia

Innovation
Business and Management

ESG COMPLIANCE

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Abstract

ESG is an important framework for Malaysian business due to many issues like climate change, employee welfare, and corruption. The Malaysian government has recently strongly encouraged business entities to incorporate ESG into their operational activities. However, ESG is still new, and many are not familiar with its complex requirements. In addition, businesses do not have the expertise and technical knowledge to blend ESG into their operations. Thus, the purpose of this innovation is to develop an ESG Compliance product that involves a summary checklist of ESG guidelines. The user can easily use this checklist to ensure their business activities are consistent with ESG requirements. This product development comprises three major processes and methodologies. In Stage 1, various international and local ESG guidelines were reviewed and analyzed. In stage 2, the detailed guidelines will be classified and categorized according to their importance and nature. In the final stage, or Stage 3, company activities will be cross-examined based on the checklist constructed. This innovation is original as it blends international and local requirements that are more suitable for the Malaysian context and local business environments. By using this product, it will increase ESG compliance by the business, attract more investment for the business, and avoid penalties for non-compliance with ESG. In conclusion, companies that practice ESG in their business strategy are more likely to attract stakeholders who are looking for stability and long-term growth. Thus, ESG integration is becoming an important consideration for businesses to continuously expand their businesses and achieve significant competitive advantage.

Keyword: ESG, Environment, Social, Governance, Sustainability

I-UMRAH APPLICATION: A DIGITAL SOLUTION FOR STREAMLINING THE UMRAH PILGRIMAGE EXPERIENCE

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Abstract

The i-UMRAH application was developed to address the challenges pilgrims face in planning and performing the Umrah pilgrimage, including difficulties in manual bookings, registering for Umrah courses, managing documents, and issues with pilgrims getting lost in the Holy City of Mecca as well as Medina. These problems often cause additional stress and a lack of focus on the spiritual aspects of the pilgrimage. The main objective of this project is to provide a comprehensive and user-friendly digital platform that simplifies all aspects of performing Umrah. The methodology used includes gathering user requirements through surveys, developing an Android-based application, and testing by experienced stakeholders. The results show a significant increase in user satisfaction, ease of locating lost pilgrims for the mutawwif, reduced paper usage in the registration and documentation process, and improved communication efficiency between pilgrims and Umrah agencies. In conclusion, i- UMRAH successfully meets its objectives by providing an effective and intuitive solution. The impact of this application empowers pilgrims to focus entirely on their worship by providing a more organized and less stressful travel experience, thereby contributing to the overall improvement in the quality of Umrah worship and travel management.

Keyword: Umrah Pilgrimage, Digital Platform, User Satisfaction, Pilgrim Tracking

SMART E-KEYS

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Abstract

Lecture rooms including workshops and laboratories in institutions are places or facilities used by students to gain knowledge. A safe and effective lecture room management system can ensure the safety of students and assets in the room while also the smoothness of the learning session. Existing key management at Department of Commerce in Politeknik Nilai causes numerous issues, including misplaced keys, failure to return and document the use of keys, and low-key security system. The goal of developing this invention is to solve the issues by utilizing the Smart E-Keys system. Observation, interviews, and questionnaires were utilized to identify issues and assess the effectiveness of this approach. The findings shows that the Smart E-keys system can solve the keys problem. This innovative material is expected to assist not only the management of the commerce department in key management but also to provide similar benefits to other institutions and organizations.

Keyword: Keys, Security, Institution

BOOKING HAIR CUTTING SERVICE BARBERHOOD APPLICATION

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Abstract

Hair cutting services are necessary for all men and women to treat their hair. However, using a service has several difficulties, such as waiting time to cut hair, inability to determine whether a store is operating at the desired time, and problems in managing phone reservations. For this reason, the BarberHood application was developed to enable customers to schedule haircut services via the Android platform. The Software Development Life Cycle (SDLC) methodology is used in implementing the app development process. To ensure prototype effectiveness, one evaluation using the Technology Acceptance Model (TAM) questionnaire will be distributed to 20 stakeholders in the haircut services, including the owner shop, staff, and target customers. The evaluation results show the ability usage and convenience of use are high, therefore using the BarberHood application is beneficial to booking hair cutting services. Impact of Barberhood application: Customers can simply plan appointments, and obtain comprehensive details regarding the kind of haircut or services offered including service cost. It also helps owners store the customers' information, manage the schedule more efficiently, and avoid double booking. In conclusion, this application can help users make reservations easily and anytime. As for the shop owner, it will help in more efficient management of business operations to become more systematic.

Keyword: Software Development Life Cycle (SDLC), Hair Cutting Services , Application

ISENS : A COLLABORATION WITH BAKERS' NEED INGREDIENT SUPPLY STORE

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Abstract

iSenS (intelligent Sensor System) was developed for Baker's Needs Ingredient Supply, a store that sells bakery ingredients and provides surprise delivery services in Sendayan Negeri Sembilan to ensure the safety of the store, mainly from retail burglaries. iSenS is a smart integrated surveillance system that can effectively detect, record, and respond to break-ins into the store. iSenS applied the CDIO (Conceive, Design, Implement, and Operate) design thinking method and adopted Internet of Things (IoT) technology to develop an effective low-cost surveillance system. It applied Arduino, an open-source software and Tapo device and application that were also linked to the owner's handphone via the Telegram application. It integrates four main components, which are Tapo CCTV, a sensor, an alarm and the owner's smart phone. iSenS works in such a way that when the sensor detects any break-in into the store, the CCTV will record it automatically and the alarm will sound. At the same time, iSenS will alert the store owner via the Telegram application on their smart phone so that the owner can take quick action to handle the situation. iSenS has been installed in the store for use, and it is hoped that it could benefit not only the store but also other small retailers that need a low-cost, low-maintenance surveillance system.

Keyword: Internet of Things, CDIO, Arduino

POLYMART PRO MOBILE APPLICATION

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Abstract

The mart or cooperative store in any academic institution is a place to buy essentials such as stationery, snacks and drinks. However, there are difficulties when many students, academic or non-academic staffs and visitors who visit this store have to queue for a long time to pay for the goods, especially during peak hours. With that problem, a mobile application development has been proposed, that is PolyMart Pro Mobile App. The development methodologies using design thinking steps involving empathy, requirement, ideate, prototype development and testing. Among design tools being used are wireframe, user interface/user experience (UI/UX), entity relationship diagram (ERD) and flowchart. After the prototype was completed, it was being tested by evaluating the acceptance by the stakeholders. The Technology Acceptance Model (TAM) was being used to evaluate and analyse the findings. This mobile application can save users' time when purchasing essential goods without having to wait in long queues at the store. Users can place orders through this mobile application and make payment using QR code. Cash payment can be accepted during order pick up. The completion of every order can be done upon self-pick up at the cooperative store.

Keyword: Mobile Application, Cooperative Store In Academic Institution, Design Thinking Methodology. Technology Acceptance Model.

SMART SENSOR TRASH CAN

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Abstract

This study explores the critical role of trash cans in food establishments in maintaining cleanliness and preventing pest infestations. The research employs a mixed methods approach: surveys and observations to understand consumer and staff experiences with waste disposal, data analysis to correlate trash can presence with hygiene standards and pest control and comparative studies of establishments with and without trash cans. Key findings reveal that accessible trash cans significantly improve cleanliness, with customers more likely to dispose of waste properly, leading to a tidier environment. Trash cans also effectively manage food waste odours, and their absence correlates with increased pest activity. Customers expressed greater satisfaction with the convenience of nearby trash cans, enhancing their overall dining experience. The study concludes with several implications. Policymakers are encouraged to develop regulations mandating adequate trash can provision in food businesses, specifying placement, size, and maintenance. Food business owners should prioritize trash can availability, conduct regular inspections, and train staff on waste disposal practices to maintain a clean environment. Future research should investigate the impact of different types of trash cans on cleanliness and pest control, explore cultural variations in waste disposal habits, and conduct longitudinal studies to assess the sustained effects of trash cans over time.

Keyword: Trash Can, Satisfaction, Food Waste

ULPL@POLINILAI WEBSITE

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Abstract

The Fourth Industrial Revolution (4IR) is the integration of physical, digital, and biological technologies, rapidly evolving due to the interconnectedness and openness of the world. In Malaysia's efforts to advance in digitalization and sustainable growth, greater efforts are needed to ensure relevance with current developments to maintain competitiveness in the future. Therefore, in response to the Nation's 4IR Policy, a website related to the management of Training and Continuing Education Unit (ULPL), Nilai Polytechnic, encompassing Training Management, Lifelong Learning Program Management (PSH), and ULPL Facility Booking has been developed under the website ULPL@POLINILAI. The development objective of the ULPL@POLINILAI website aims to facilitate users in booking ULPL facilities, PSH programs, and viewing related training information offered by Nilai Polytechnic online, while aiding management in monitoring, updating, and recording user-required information. User acceptance studies of this website have shown overwhelmingly positive responses among respondents, who find it facilitates booking processes and information dissemination, is innovative, and user-friendly. The website also demonstrates that 4IR technology integration can be utilized through advancing digital innovations towards sustainable resource optimization and environmental issue resolution. It is hoped that the outcomes of this website development will enhance Nilai Polytechnic's image in training and facility management aspects for staff and the community, aligning with current technological advancements.

Keywords: Booking, Online, Facilities, 4IR Revolution

POLY_THRIFTHY USED ITEM WEBSITE

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Abstract

Student communities are becoming more in need of cost-effective solutions and sustainable consumption in today's changing economic environment. Students attending polytechnics sometimes struggle with a lack of resources and money, making it difficult for them to buy new purchases or properly dispose of their unwanted items. Furthermore, as environmental sustainability becomes more widely recognized, there is an urgent need for platforms that make it easier for products to be recycled and reused. Online marketplaces are common however, they don't fully satisfy the unique requirements and limitations of polytechnic students. The objective of our Poly Thrifty used item website is to create a functional, user-friendly website for second hand goods that is especially suited to the needs of Politeknik Nilai students. The development methodologies using System Development Life Cycle (SDLC) and other design tools being used are wireframe, user interface/user experience (UI/UX), entity relationship diagram (ERD) and flowchart. After the prototype was completed, it was being tested by evaluating the acceptance by the stakeholders. The Technology Acceptance Model (TAM) was being used to evaluate and analyse the findings. The implementation of this Poly Thrifty used item website is anticipated to reduce waste, promote recycling, and support the financial well-being of students at the Politeknik Nilai.

Keyword: Used Item Website, System Development Life Cycle, Politeknik Nilai.

Innovation
Education, Teaching and Learning

REFLUENT V2: A COLLECTION OF SAMPLING TECHNIQUES RELATED CARTOONS

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Abstract

The traditional learning model, which has adorned the world of education for centuries, is indeed a distinctive feature of our education system. However, many questions arise: Is this model still relevant in today's digital and innovative era? Should we change the way we teach? Now, a visual approach is used to convey abstract concepts of courses that are difficult to understand in textual descriptions, images, and static graphics. Visual methods have become the primary requirement in making the teaching and learning process more enjoyable. The use of teaching aids in visual form also contributes to improving the student understanding and the quality of teaching and learning delivered by the instructor. A combination of multimedia elements such as audio, video, text, animation, and graphics in learning can attract students' interest in learning more, understanding, and improving motivation in group or independent learning activities. Our group has developed an innovative product, Refluent V2 (i.e., a combination of cartoon illustrations and YouTube videos). A cartoon is a funny picture that explains an event. One of the characteristics of cartoons is that they have few words. The message cartoonists deliver is usually more straightforward, fresher, and easy to recognize and understand. It uses a few sentences, and the picture is more straightforward. Refluent will assist the students and lecturers with the appropriate sampling technique for research. This creative note is expected to facilitate teaching and learning about sampling techniques.

Keyword: Cartoons, Interactive, Sampling Technique, YouTube, Research

AR ASSISTANT AT WORK: GUIDING YOUR DAY

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Abstract

This research introduces an innovative Augmented Reality (AR) Assistant designed to facilitate Workplace English learning for low-proficiency students at Community Colleges to improve Workplace English (SUE20021) learning. Conventional language learning approaches may fall short of engaging them effectively, resulting in limited language proficiency and reduced workplace readiness. Leveraging AR technology, this innovation offers an immersive learning environment simulating real workplace scenarios, allowing students to practice language skills contextually. The development involved educators and students in a participatory design approach to ensure alignment with their needs and preferences. Based on this feedback, the AR Assistant was developed, integrating interactive modules and simulations. A usability study was conducted to gather user feedback on design and functionality, complemented by quantitative measures of language proficiency and engagement, indicating the effectiveness of the AR Assistant. Findings indicate a significant enhancement in English language acquisition and workplace communication skills among low-proficiency students using AR Assistant. Immersive scenarios and interactive exercises fostered engagement and active learning, enhancing vocabulary retention and oral proficiency. Both qualitative and quantitative data highlight the AR Assistant's effectiveness in building students' confidence in utilizing English in professional settings. The study underscores AR technology's potential to boost Workplace English (SUE20021) learning outcomes for low-proficiency students, suggesting its viability as an educational tool. These implications highlight the importance of integrating immersive technology into language education to better prepare students for success in the modern workforce.

Keyword: Augmented Reality (AR), Workplace English learning, Low-Proficiency Students, Community Colleges, Immersive Technology AR technology

SEAMLESS LEARNING ACCEPTANCE MODEL (SLAM) FOR B40 UNDERGRADUATES TO ENHANCE ESL LEARNING

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Abstract

This study explores how seamless learning, a technology-driven pedagogy that transcends classroom walls, can be effectively implemented for B40 undergraduates in Malaysia to enhance English as a Second Language (ESL) learning. While seamless learning promises flexible and boundless learning opportunities, socio-economic factors pose distinct challenges for B40 students. Employing a quantitative approach, this study surveyed 301 B40 undergraduates from Malaysian public universities. To understand how B40 students experience technology enhanced seamless learning for ESL, the Seamless Learning Acceptance Model (SLAM), was developed. SLAM builds upon the established UTAUT technology acceptance framework. The innovation was to improvise the existing UTAUT model by incorporating constructs specific to B40 undergraduates' ESL learning context whereby "External Constraints" and "Comprehensible Input" constructs were added. Each construct in the SLAM model was analyzed using PLS-SEM and the analysis revealed that both new constructs directly impact B40 undergraduates' acceptance of seamless learning for ESL acquisition. Notably, "Comprehensible Input" was identified as the most significant factor. This research offers two key contributions. First, by developing SLAM, it provides a framework for understanding how seamless learning empowers B40 undergraduates for effective ESL learning. Second, it highlights the need for inclusive learning resources tailored to B40 students' experiences. By extending the UTAUT model to the B40 ESL learning context, this research paves the way for revolutionizing access to quality ESL education in Malaysia. These findings can bridge the digital divide, foster inclusive seamless learning environments, and ultimately unlock a world of opportunity for B40 undergraduates through enhanced English language skills.

Keywords: Seamless Learning, ESL Learning, B40 Undergraduates, Inclusive Learning, Technology Enhanced Language Learning

COUNT-IT-RIGHT: ADHD LEARNING EDGE

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Abstract

In response to the challenges faced by students in traditional classroom settings and the increasing prevalence of Attention Deficit Hyperactivity Disorder (ADHD), the emergence of a new educational approach represents a pivotal step towards inclusivity and adaptive pedagogy. Seamlessly integrating Google Slides' versatility, it provides an immersive journey for learners, with hyperlinked pathways and themed environments enhancing comprehension and retention. Initially focused on countable and uncountable nouns, its adaptable framework ensures ongoing relevance and effectiveness while accommodating various language focuses. Designed with the Analyze, Design, Develop, Implement, and Evaluate (ADDIE) instructional design framework, the courseware underwent rigorous development phases, guided by expert teachers, affirming its engagement and personalized learning approach. The feedback from the innovation product survey suggests that a majority of respondents (66.67%) strongly agree with the statement that the instructions within the product are clear, indicating a high level of satisfaction or approval with the product. Additionally, one-third of the respondents (33.33%) agree with the statement, further affirming its positive reception. Next, with the majority of the respondents agreeing (66.67%), that the text is easy to read for students with ADHD, the majority of feedback indicates positive reception. Despite (33.33%) of respondents having a different opinion, the overall consensus leans towards the text being considered suitable for students with ADHD. "Count-It-Right: ADHD Learning Edge" not only meets immediate educational needs but also holds promise for fostering lifelong learning and promoting educational equity. "Count-It-Right: ADHD Learning Edge" aligns with contemporary pedagogical principles and holds potential for broader implementation, with potential to incorporate AI for personalized learning paths.

Keywords: Count-It-Right: ADHD Learning Edge, ADHD, Courseware, Self-Directed Learning, ADDIE Model

MONEY PATH: A GAMIFICATION OF FINANCIAL LITERACY

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Abstract

Financial literacy is crucial for developing sound financial habits. Although there is growing awareness of the need for financial education and literacy to attain personal economic success, a considerable portion of Generation Z still lacks knowledge in this area. Insufficient comprehension might result in unforeseen repercussions, such as failing to acknowledge the necessity for increased retirement savings, making imprudent financial decisions, or unnecessarily repaying high-interest debt. Furthermore, there is a dearth of studies on the subject of financial literacy and education, particularly with regard to Generation Z in Malaysia. This study aims to identify and provide assistance for inventive approaches that cater to the distinct requirements of gamification boards to enhance students' comprehension and utilisation of financial ideas. A quantitative study design was employed, utilising data from 40 respondents who were 16 years old. A cluster random sampling method was employed, and the data was analysed using IBM SPSS Version 29. The findings indicated the existence of a prevailing female participant. Over 50% of the respondents showed a high level of financial literacy, with approximately 33% showing a moderate level and the remaining percentage showing a poor level. The primary objective of this research is to elucidate the relationship between financial literacy, individual decision-making, and financial management capabilities. An interactive strategy is necessary to connect with Generation Z. Therefore, providing financial education effectively equips them to develop various financial goals and strategies for the future.

Keyword: Aspiration, Financial Literacy, Gamification, Money Path

AUTOMATIC MINI CONVEYOR CONTROL SYSTEM DEVELOPMENT BASED PROGRAMMABLE LOGIC CONTROLLER (PLC) FOR EDUCATIONAL PURPOSES

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Abstract

Mastery of automatic conveyor control systems and Programmable Logic Controllers (PLCs) programming is crucial particularly for Electrical Engineering students. This skill is extensively taught in higher institutions, including Polytechnic in Malaysia, with focus on technical and vocational education (TVET). Recognized the importance of hands-on experience, universities emphasize practical exposure to PLC in automation system. To enhance student understanding, efforts are made to develop mini conveyor trainer kits equipped with integrated monitoring systems, providing an interactive learning experience. Unfortunately, some institutions still lack adequate training facilities for effectively demonstrating PLC applications in conveyor control systems. Furthermore, low-cost conveyor systems designed specifically to meet the Polytechnic syllabus are also discussed, emphasizing a logical approach to system development and integration into educational programs. To address this gap, a 24VDC supply PLC-based Automatic Mini Conveyor Control System has been developed as an educational tool. This system enables students to directly implement PLC program designs using CX-Programmer software, enhancing their interest and comprehension to the subject DEJ40033 Programmable Logic Controller (PLC) & Automations which is a compulsory course for all fourth-semester students pursuing a Diploma in Electrical Engineering (DEE). The system uses an OMRON PLC as the primary control device, driving the mini conveyor with a DC motor. Additional components include inductive and capacitive proximity sensor as inputs, and pneumatic cylinder as actuator for the sorting system. The fully automated mini conveyor system proves to be successful for educational purposes, delivering satisfactory results and facilitating practical implementation in the learning process.

Keyword: Mini Conveyor System, Programmable Logic Controller (PLC), Automation System, Education Trainer

ELASTICITY JIGSAW PUZZLE

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Abstract

In the context of economic education at polytechnics, Microeconomics is the core course that must be taken by all students who follow the program in the Department of Commerce. Learning microeconomics can also train student's mind so that they become more creative and active. Generic skills such as interpersonal skills, managing and solving problems can also be trained through this courses. Since the content of the Microeconomics course has a direct relationship with everyday life, teaching that only focuses on the mastery of facts and conventional method is not suitable to achieve the goals of this course. In relation to this situation, Elasticity Jigsaw Puzzle is introduced as the innovation to encourage more active learning in the class. This innovation lead to the student-centered learning and outcome based education where active learning is practiced in the class. Students can increase their knowledge and skills in the topic of elasticity for the course of Microeconomics. The teaching and learning process will be attractive and more fun. So, the benefit of using this game technique allows students to better understand the theory and master the calculation skills based on the formula given.

Keyword: Microeconomics, Student-Centred, Active-Learning

C++ NOTEBUDDY

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Abstract

The C++ programming language presents a challenge for new learners due to its complexity and low-level language. Many students struggle to grasp programming concepts because of their limited experience, maturity level, and the intricacies involved in understanding and mastering the logic and syntax of the language. However, C++ serves as a foundational programming language that aids in understanding the core principles applicable to all programming languages. Once one becomes proficient in C++, transitioning to other languages becomes significantly easier. This project named C++ NoteBuddy was aimed at exploring the potential utilization of mobile applications in C++ programming. The mobile applications were developed using the MIT App Inventor based on the Rapid application development model (RAD). A total of 31 students taking Programming Fundamental course were involved in testing the applications. To test the usefulness of the C++ NoteBuddy, we using a questionnaire. The findings indicated that the application is suitable as a learning aid, with its user-friendly interface meeting the users' needs. In conclusion, mobile applications hold great potential for integration into the C++ Programming subject. However, some constraints such as this application only can used by Android user and the operating system speed of mobile phones. Further studies are recommended to address these issues in application development.

Keyword: C++, Mobile Application, Programming Language

DEVELOPMENT OF EMS-BAG (EMOTIONS SHREDDED BAG) AS A TOOL FOR EMOTIONS AWARENESS IN COUNSELLING

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Abstract

The EMS-Bag (Emotion Shredder Bag) is an innovative tool designed to enhance counselling sessions by providing clients with tangible methods to express and manage their emotions. This multifunctional bag consists of four compartments, each offering unique resources to facilitate emotional expression and processing. The first compartment contains stationery items such as colored pencils, pens, and emotion stickers, which clients can use to visually express their feelings. The second compartment includes decorative paper for clients to write down and articulate their emotions. In the third compartment, finger puppets with a family theme are provided to help clients explore and express relational dynamics and emotions in a playful yet insightful manner. The final compartment features a paper shredder machine, enabling clients to symbolically "shred" their negative emotions, thereby embodying the process of letting go. This innovation uses an explanatory research design. Rooted in Gestalt therapy principles, this innovation aims to foster holistic emotional awareness for the client. The primary objective of the EMS-Bag is to offer clients diverse methods to externalize and process their emotions, facilitating a deeper therapeutic engagement. By providing both creative and symbolic avenues for emotional expression, the EMS-Bag empowers clients to actively manage and transform their emotional states, ultimately contributing to improved emotional well-being. This innovation will employ a detailed checklist to gather feedback from clients on the effectiveness of the EMS-Bag. The checklist has been meticulously developed using the Lawshe method, a structured approach to ensure content validity through expert judgement. By incorporating this method, we ensure that the checklist covers all relevant aspects of the EMS-Bag's usability, emotional impact, and overall therapeutic effectiveness. Clients will be asked to complete the checklist after their counselling sessions, providing valuable insights into how well the EMS-Bag helps them express, regulate, and process their emotions. The feedbacks will help to refine and improve the product so that it better meets the emotional and therapeutic needs of clients.

Keyword: Counselling, Tool, Emotions, Well-being, Awareness

KIDS FRIENDLY PLANTER STORAGE

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Abstract

This project is a comprehensive study exploring the use of recycled materials to create efficient 'kids planter storage.' The structural design is made from discarded materials such as PVC pipes. Incorporating recycled materials into the unique and appealing design of the 'kids planter storage' serves the purpose of outdoor planting for children and promoting sustainable agriculture from an early age. Additionally, the motive of this innovative research project is to impact environmental awareness positively. By interacting with nature through planting, children will understand the importance of environmental conservation, the necessity of caring for plants and animals, and the effects of their actions on the environment. Furthermore, children can enhance their scientific knowledge through planting activities, understanding processes like photosynthesis, the life cycle of plants, and their basic needs for survival. Therefore, this project aims to produce a design for 'kids planter storage' for outdoor planting by children. The objectives are to identify various types of suitable recycled materials for the structure of 'kids planter storage' and innovate its design. This approach includes reducing waste, cutting construction costs for building 'kids planter storage,' and producing healthy plants while allowing children to engage in activities together. Moreover, continuous research and the integration of newly available recycled materials can enhance sustainability and efficiency in evolving landscapes for eco-friendly planting practices. This study demonstrates the power of recycling for a greener future.

Keyword: Recycled Materials, Design

MYPOLYCC DYNAMIC PLANNER

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Abstract

MyPolyCC Dynamic Planner is a planner that helps staff and students visualise their planning such as assignment, work, assessment and holiday for the whole semester. Also to enhance self discipline thru proper planning and scheduling for the whole semester and to ensure that all the activities, assessment and work can be spread thru out the semester. This innovation was inspired from the google calendar. However, google calendar only can displayed by month which is it's not describe for the whole semester. Hence, collaboration and initiative of four lecturer from various background of two polytechnics which is Politeknik Nilai and Politeknik Tuanku Syed Sirajuddin innovate this planner with the whole semester calendar interface. Every year, Jabatan Pendidikan Politeknik dan Kolej Komuniti (JPPKK) will planned and distribute the academic calendar for Polytechnics and Community Collage used. This academic calendar consist with several information. The first column of the academic calendar, is the type of institution which is according to the state of the institution located. Next to it, is the column of number of weeks which is refer to the start and last date for one semester. Beside column number two, it is column activities that explain all the general activities and event of JPPKK that will happened thru out that semester. The second last column, will gave the information of public holidays. The information about Industrial Training will shows on the last column. All these information was transform into MyPolyCC Dynamic Planner. MyPolyCC Dynamic Planner was a planner that developed using Excel software and used offline as personal planner. This planner will create better planner for staff and students. They can visualise and planned all the activities during the semester. Furthermore, this planner indirectly will help staff and students in scheduling their work, assignments, assessment and holidays. All they have to do is to type the date and activities and it will be appear in MyPolyCC Dynamic Planner.

Keyword: MyPolyCC Dynamic Planner, Academics Calendar

SMART ORTHOGRAPHIC KIT FOR TEACHING AND LEARNING OF ENGINEERING DRAWING COURSE FOR DIPLOMA IN MECHANICAL ENGINEERING AT POLITEKNIK NILAI NEGERI SEMBILAN

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Abstract

Orthographic projection is a method of presenting a 3-dimensional object in a 2-dimensional drawing form, namely front view, plan view and side view. Students with low visual skills find it difficult to understand the concept and compare the difference between the first and third-angle orthographic projection drawings. According to the Trends in International Mathematics and Science It is found that students have difficulty mastering the field of geometry. Orthographic Projection Box which is a transparent square box that can be opened to allow the real object to be placed in the middle. The Smart Orthographic Kit includes a first and third angle orthographic projection plane, as well as some real-world object models for presentation and gaming activities to help students grasp. To utilise this kit, simply set the real object model in the centre of the first and third corner orthographic projection plane. Drawings of the front, side, and top views can be created directly on the three projection planes. Folding the third flat-three projection planes results in a two-dimensional spreadsheet. Smart Orthographic projection Kit is a translucent box that acts as the first and third orthographic study projection plane. This plane can be expanded into a 2D shape. This kit emphasizes constructivism and can attract interest and enable students in Engineering Drawing (DJJ10013) Course of the Diploma in Mechanical Engineering at Politeknik Nilai Negeri Sembilan to easily grasp complex ideas in Engineering Drawing.

Keyword: Orthographic Projection, Visual Skills, First and Third Angle Orthographic Projection

SMART IB: ENHANCING LEARNING EXPERIENCE IN INTERNATIONAL BUSINESS

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Abstract

SMART IB is an innovative learning platform that educators and students can use with just one click to make learning materials easily accessible. This platform provides free access for five topics through four elements which is E-Book, Slides, Videos, and Practice Exercise Platform can be access thru any electronic device at any time and from anywhere. Furthermore, there are less Bahasa Melayu reference materials available at the Community College level. The purpose of this innovation is to make studying international business a more engaging and interactive learning. Learning process requires creating and implementing an intuitive web platform that incorporates many multimedia assets to facilitate diverse learning tasks, including reading, viewing, and listening. The primary results of the questionnaire indicate that participants highly value SMART IB for increasing their learning efficiency and engagement. Nearly all of the respondents said that their educational experience has been more efficient and more accessible because of SMART IB. Respondents also expressed that the platform's ease of use and the availability of content without requiring a login considerably improved their learning experience. Thus, 97% of respondents were eager to recommend this platform to others and 93.9% felt that this innovation should be commercialized. As a conclusion this research suggests that SMART IB not only facilitates a more interactive and effective learning environment but also supports green initiatives by reducing paper usage. This platform is expected to become a dynamic tool for both students and lecturers in the International Business course.

Keywords: International Business, Interactive Learning, Educational Platform, Multimedia Resources, Green Education

HYDROSTATIC FORCE VISUALIZATION KIT (HFVK): AN INTERACTIVE LEARNING TOOL FOR UNDERSTANDING HYDROSTATIC FORCES ON PLANE SURFACES

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Abstract

Understanding hydrostatic forces on plane surfaces is a fundamental aspect of fluid mechanics and hydraulics, crucial for engineering applications such as dam design and submerged structures. Despite its importance, many students struggle with visualizing and comprehending the theoretical concepts involved, particularly the relationship between fluid pressure, depth, and centroid height. To address this educational challenge, the Hydrostatic Force Visualization Kit (HFVK) has been developed as an innovative teaching tool. The HFVK provides a hands-on, interactive learning experience, enabling students to visualize and measure hydrostatic forces in real-time. The kit consists of a transparent water tank with measurement markings, adjustable plane surfaces (rectangular, circular, triangular) that can be submerged at various angles, and a height measurement scale. It also includes attachable a centroid indicator, and a string and weight mechanism to represent the perpendicular distance from the centroid to the water surface. Using the HFVK, students can conduct experiments to determine the hydrostatic force on plane surfaces in different orientations and depths. The visual and practical components of the kit enhance comprehension of the underlying principles, making the theoretical concepts more accessible and engaging. By bridging the gap between theory and practice, the HFVK improves students' proficiency in solving hydrostatic force problems and deepens their understanding of fluid mechanics.

Keywords: Hydrostatic Force, Centroid Height, Hydraulics Education, Teaching Aid, Visualization, Fluid Mechanics, Innovative Learning Tool

EVALUATING THE IMPACT OF QUIZIZZ GAMIFICATION ON STUDENT PERFORMANCE AND SATISFACTION IN PLANT IDENTIFICATION SUBJECT

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Abstract

Gamification has become a part of students' daily lives, incorporating game-based mechanics to boost student engagement in learning. This method aligns well with contemporary learning styles and trends. One popular gamification platform is Quizizz, introduced in 2015 to facilitate active and interactive learning during classroom sessions. Given the various of educational applications available today, it is essential to assess the current effectiveness of Quizizz. This study aims to evaluate the impact of Quizizz on students' performance and satisfaction, providing insights into its relevance for educators as a teaching and learning tool. Data were collected using an online questionnaire with 30 students from the Diploma in Landscape Horticulture program at Nilai Polytechnic. The questionnaire covered demographic information, learning outcomes, student interest, knowledge improvement, and motivation. The data obtained were analyzed using descriptive statistical analysis. Findings indicate that Quizizz remains relevant and effective for teaching and learning. Most respondents reported positive feedback, noting that Quizizz enhanced their understanding, made learning more interactive and entertaining, and increased their overall engagement. In conclusion, educators can effectively utilize Quizizz gamification in their teaching processes to enhance digital learning skills and technology proficiency among students, ultimately improving their academic performance.

Keyword: Engaging Activities, Plant Identification, Quiziz, Students Performance,e-learning

MY POLY ENTREPRENEUR (MYPE)

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Abstract

In this era of technology and globalisation, we found that business is one of the easiest professions that anyone can involve to. Many of the successful entrepreneurs nowadays found it very easy to gain money through businesses, but how about the young entrepreneurs who just want to start-up their businesses? My Poly Entrepreneur (MyPE) is a website that designed to help entrepreneur students who just want to start their business by getting more information about business by following the law in the country. It is built to help entrepreneurs to have at least a guide for them not only by studying on Entrepreneurship and Digital Entrepreneurship modules, but also to become a successful entrepreneur in the future. From our survey to the Politeknik Nilai students, we found that entrepreneur students are lack of information related to financing or capital for their business. Other than that, students are also not exposed to training or programme related to entrepreneurship either in the campus or any other external institutions. They also do not have a business advertising platform to advertise their businesses. In order to create this website, we prepared several questionnaires through Google Form to be distributed to the students and entrepreneurs in Politeknik Nilai students. Based on our survey, we found that majority if the students are not familiar with any agencies and institutions that can help them a lot in their businesses. In conclusions, MyPE website provides lot of benefits to students or any potential entrepreneurs because it can help to overcome all of their problems to start-up a business.

Keyword: Entrepreneur, information

S-CO

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Abstract

In the world of Islamic finance and banking, the shariah contract is an important instrument used in every Islamic financial transaction. According to the syariah perspective, a contract that wants to be carried out must comply with all payments and procedures required by syariah. Therefore, in Polytechnic Institution, especially for Islamic finance students, sharia contracts need to be well understood by students because they are the basis for the muamalat system. Students need to master the topic of shariah contracts because it is included in every Islamic finance course syllabus from semester 2 until semester 5. Among the problems that students often face is that it is difficult to memorize, understand the modus operandi, and confused in determining the shariah contract that needs to be used in Islamic finance transaction. In relation to that, the S-CO innovation was produced to overcome this problem. students can also access this application wherever they are and it can help increase students' interest in understanding and memorizing shariah contracts.

Keyword: Contract, Shariah, Finance

Innovation
Engineering and Technology

PRECISE FERTILIZATION WITH DRONE-BASED TECHNOLOGY: PRISM-RGB NITROGEN GROWTH ALGORITHM

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Abstract

The concept of producing more with fewer inputs is a significant principle of Precision Farming (PF). PF focuses on precise management in every aspect of farm variability, including fertilizer management. In fact, PF highlights the importance of maintaining environmental quality while performing farming activities without affecting final production. However, PF is not inexpensive and requires a high cost to be implemented by farmers. The high cost of PF and drone-based technology for field operations, such as spraying and aerial mapping procedures, becomes the main issue that hinders wider adoption rates and acceptance among rice farmers and service providers. The innovation is perceived through the precise fertilizer algorithm calculation that is specifically developed according to the actual nitrogen requirements of the rice plant based on various growth stages. The fertilizer algorithm calculation can be practiced with any type of rice planting system and can even be used with both inorganic and organic types of fertilizer. The algorithm is called Prism-RGB Nitrogen Growth, which is mainly developed to enhance fertilizer management in rice farming, especially for precise nitrogen fertilizer application. The algorithm can be integrated with any type of surveillance drone for aerial image acquisition and can be used with any ordinary RGB camera for aerial mapping procedures. The algorithm has achieved 90% accuracy in determining precise fertilizer needs during field applications at larger scales. Thus, the cost and amount of fertilizer application have successfully been reduced by up to 60% to 70%.

Keyword: Precision Rice Farming, Fertilizer Management, Fertilizer Algorithm, Drone, Aerial Mapping.

SMART 3-WHEEL BIKE: TECHNICAL SUPPORT FOR DISABLED ENTREPRENEURS

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Abstract

This study explores the critical role of technology in supporting entrepreneurship, particularly for disabled individuals facing unique challenges. While entrepreneurship is increasingly attractive for people with disabilities due to limited job options, current technology often falls short, hindering their competitiveness. Compared to non-disabled individuals, people with disabilities have lower labor market participation rates, constraining their employment opportunities. This research aims to address these challenges by developing a Smart 3-Wheel Bike (S3WB) to enhance the capabilities of disabled entrepreneurs, facilitating the organization and operation of their businesses. This study attempts to overcome these obstacles by creating a Smart 3-Wheel Bike (S3WB) that will improve the capacities of impaired entrepreneurs and make it easier to organize and operate their business. The study follows a four-phase methodology: analysis, design and development, and implementation and evaluation. Two case studies examining the prototype's needs and acceptance reveal that elements such as performance expectancy, effort expectancy, social influence, facilitating conditions, and behavioural intention have a direct impact on disabled entrepreneurs' use of the S3WB. These findings emphasize the S3WB's ability to address the demands of disabled entrepreneurs, as well as its acceptance by persons with impairments in their entrepreneurial pursuits.

Keyword: Disabled Entrepreneurs, Technology, Entrepreneurship

SUSTAINABLE FOAM (WASTE TO WEALTH)

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Abstract

This project aims to produce recycled polyethylene (PE) foam from waste post-industrial PE. Post-industrial PE is frequently discarded and ends up in landfills, posing significant risks to the surrounding ecosystem due to its non-decomposable properties. Conventionally, recycling post-industrial PE has been used to produce low-value products (downcycling). The plastic foam industry typically incorporates up to 30% recycled materials, with exceeding this threshold falling short of industry standards for PE foam products. Normally, PE foam production relies on virgin PE, which contributes to petrochemical plants releasing tonnes of CO2 gases (~11.54 tonnes CO2 gas/1 tonne of virgin PE) during the production process. In this project, waste post-industrial PE is utilized for PE foam production at a higher percentage, reducing the need for virgin PE and allowing for carbon credits. This sustainable approach indirectly contributes to reducing CO2 emissions from the petrochemical industry. Furthermore, the sustainable foam project aligns with Sustainable Development Goals (SDG) 9 (Industry, Innovation and Infrastructure), 13 (Climate Action), 14 (Life Below Water), and 15 (Life on Land).

Keyword: Waste to Wealth, Polyethylene Foam, Recycling Materials, Sustainable Approach

SENSENERGY: HARNESSING HUMAN SENSING FOR ENERGY EFFICIENCY WITH IoT

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Abstract

Malaysia, one of the largest energy consumers in Asia, faces significant challenges in reducing energy waste due to negligent user behaviours. To address this issue, we have developed "SensEnergy," an innovative IoT-based system that leverages human sensing to optimize energy consumption in real-time. Our system utilizes an array of sensors, including infrared, voltage, and current sensors, to monitor and regulate the energy usage of electrical devices in a room. The system is controlled through an Android application, which provides real-time data on power consumption and allows users to adjust settings remotely. By integrating these technologies, SensEnergy aims to reduce energy waste, lower electricity bills, and promote sustainable living practices in Malaysia. With its user-friendly interface and real-time monitoring capabilities, SensEnergy has the potential to revolutionize energy management and contribute significantly to Malaysia's energy efficiency goals.

Keyword: Energy Consumption, Human Sensing, Internet of Thing, Mobile Application

THE DEVELOPMENT OF DIGITRONICS TRAINER AS A TEACHING AID FOR DIGITAL ELECTRONICS COURSE IN SULTAN HAJI AHMAD SHAH POLYTECHNIC

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Abstract

Teaching aids are one of the most important elements in teaching and learning, used not only in schools but also in higher educational institutions to enhance students' understanding. Similarly, Digital Electronics Course requires teaching aid as facilitation element. Digital Electronics course is related to the basic theory of digital systems and applications. In this course, students need to perform practical work related to Basic Logic Gates, Boolean Operation, Flip-flops, Counters and Registers. The practical work implementation is using a teaching aid which is a digital trainer that is called Digital Logic Tutor.The Digital Logic Tutor is large in size and has many functions that are unnecessary for the course. It requires connection to a power supply using cables to function. Purchasing a new trainer is costly. To address this issue, an innovative teaching aid called the DIGITRONICS TRAINER has been developed. This new trainer is designed to assist second-semester students in the Department of Electrical Engineering at Sultan Haji Ahmad Shah Polytechnic with practical work. Unlike its predecessor, the Digitronics Trainer uses an adaptor instead of a power supply device, reducing costs. Additionally, it has reduced unnecessary applications not related to the course.Moreover, the Digitronics Trainer replaces the Dual In-line Package (DIP) Switch with a more convenient toggle switch, addressing the previous challenges where students had to use pens or other tools to operate the small DIP switches. This improvement has increased students' focus and enthusiasm for their practical work.

Keywords: Digital Electronics, Trainer

MULTI PURPOSE CLEANING ROBOT WITH AI:PURESHINE

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Abstract

At present, people clean their houses as needed to maintain cleanliness and order. However, they encounter various issues during cleaning, such as it being time-consuming, requiring multiple tools, and facing challenges in reaching certain areas like under the bed. Therefore, we propose addressing these issues by introducing our innovative product.Our product is an AI-powered cleaning robot integrated with specialized cleaning tools designed for targeted cleaning. Enhancing the cleaning robot with Artificial Intelligence reduces the daily cleaning burden. These robots use AI to autonomously navigate and clean designated areas. Sensors help them detect obstacles, map the environment, and determine efficient cleaning paths. Once programmed, they operate with minimal human intervention and can be controlled via smartphone, voice commands through devices like Alexa or Google Home, or set on a timer.Our product, named 'PURESHINE', simplifies daily cleaning tasks. In conclusion, utilizing our product can make household cleaning easier, saving time and reducing the need for physical effort, which can then be redirected to other activities.

Keyword: AI, PURESHINE

BIOSORPTION DAN DECOLORIZATION OF DYES USING EXPIRED KING OYSTER MUSHROOM

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Abstract

Water pollution remains one of the most severe issues on Earth. Researchers have developed various technologies to treat or degrade dyes that contribute to water pollution. This study explores the use of expired king oyster mushroom (Pleurotus eryngii) to decolorize dye contaminants, particularly from textile industrial effluents. The objectives of this study include exploring an alternative wastewater treatment method and reducing food waste.The factors influencing the decolorization of bromophenol blue and congo red, used as models for pollutants, were investigated. Expired mushrooms were immersed in dye solutions and observed hourly for up to 5 hours, and in some cases overnight. The study's findings indicate that various operational parameters such as pH level, initial dye concentration, contact time, adsorbent dosage, absorption capacity (degree of hydration), and adsorption kinetics govern the overall decolorization process when expired mushrooms are used as biosorption agents.

The adsorbent dosage influenced the decolorization process significantly, with a reduction of 31% for bromophenol blue and 63.68% for congo red dye. Adsorption kinetics were analyzed using kinetic equations, revealing that the pseudo-first-order model best fits the experimental data. This study demonstrates that king oyster mushrooms have the potential to serve as effective biosorption agents for dye solutions, applicable in various wastewater treatment processes. It is recommended to further explore the use of this mushroom biosorption agent in treating wastewater containing heavy metals.

Keyword: Wastewater, Dyes, Absorption Capacity, Absorption Kinetics

WATER SAMPLE COLLECTOR

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Abstract

The assessment of water quality is essential to ensure the safety and suitability of water for various purposes. Several water quality parameters, such as pH, Dissolved Oxygen (DO), Biochemical Oxygen Demand (BOD), Chemical Oxygen Demand (COD) and Suspended Solids (SS) are typically measured to evaluate the water quality at a specific location and depth. Accurate water sampling procedures using appropriate equipment are crucial for obtaining reliable water quality data. Recognizing the need for an innovative solution and to facilitate the water sampling process, an innovative Water Sample Collector has been designed to facilitate the water sampling process and enable accurate measurements of water quality parameters. This equipment is designed to simplify the handling of water sampling procedures and ensuring the collection of samples at the correct depth. This innovation aims to minimize the cost of water sampling devices by providing affordable and user-friendly equipment for both students and professionals to effectively conduct water quality tests and achieve reliable results. The use of this innovative Water Sample Collector can greatly benefit the students at Polytechnic Sultan Mizan Zainal Abidin, as well as other polytechnic students in Malaysia, who are involved in water quality testing and analysis. It can also assist lecturers and students in the Civil Engineering Department, who are teaching and enroll courses such as DCC 40152 Water Supply & Wastewater Engineering and DCC 40172 Structure, Hydraulic and Water Quality Laboratory, in understanding the actual water sampling procedures. Overall, this innovative Water Sample Collector can enhance the learning and teaching process, providing a more effective and holistic learning experience to understanding water quality assessment.

Keyword: Innovation, Water Sampling, Water Quality Parameters

VOICE LINK TRAINER FOR FIBER OPTIC COMMUNICATION

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Abstract

This presentation showcases the innovative Voice Link Trainer for Fiber Optic Communication, designed to enhance the TVET learning experience at Politeknik Merlimau. This device aims to provide students with a hands-on learning tool for understanding the fundamental concepts of fiber optic. The creativity of educators is crucial in ensuring that teaching and learning objectives are met. The trainer has been used by students enrolled in the Fiber Optic Communication System course in Session I:2023/2023 and Session II: 2023/2024 academic calendar. Key Components of Fiber Optic Communications includes the transmitter, optical fiber and sent to the transmitter. Objectives of the Voice Link Trainer are recognized one-way data flow in the fiber optic communication system, recognize that data is transmitted in two ways through the fiber optic communication system and understand how audio signals travel via free space and duplex optical wires. Observation of the output signal shows clear voice at speaker receiver from the microphone transmitter when oneway fiber optic cable used, clear voice at speaker and microphone from both side at two-way fiber optic cable, noise is present with the output sound when the bent fiber optic cable happen and audio can be heard at a maximum distance of 10cm and lost audio at distances exceeding 10cm without fiber optic cable. The Voice Link Trainer offers valuable hands-on learning for students and professionals in the field of fiber optic communication. By enabling two-way audio transmission, the device helps illustrate the key principles and components of this critical technology. The development of the voice link trainer has achieved its goal of helping to implement the training of TVET in Politeknik Merlimau and it offers a dependable and effective solution for enhancing the TVET learning experience at Politeknik Merlimau.

Keyword: Fiber Optic, Voice Link, Duplex

SEMI-AUTO CURRYPUFF CRIMPING MACHINE FOR MEDIUM-SIZED INDUSTRIES

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Abstract

The semi-automatic curry puff crimping machine is an important innovation in the curry paste production industry. The collaboration between the Semi-auto curry sealing machine project and Intaz Frozen Food provides an encouraging partnership for us. The main objective of developing a semi-automatic curry puff crimping machine is to significantly increase the efficiency of curry puff production, especially for medium-sized industries. These machines minimize the need for manual labor. An increase in productivity of 106% that has been proven by this Semi-auto curry puff crimping machine when compared to existing machines that only achieve an increase of 62.9% and 63%. This refers to manual production with one worker. The production of this machine has also been able to reduce the problem of lack of workers, minimal maintenance, mobile machine, automatic counting display and much cheaper than the existing machines. However, this machine requires a compressor to make the crimping process which can be improved with a dual function either using a compressor or mechanical use.

Keyword: Currypuff, Crimping Machine, Pneumatic, Semi-automatic

Innovation
Health and Life Science

INNOVATION IN BONE IMPLANT: NO MORE SECOND SURGERY AFTER BONE TRANSPLANTATION

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Abstract

In bone scaffold studies, there are challenges in replacing autologous and allograft bone for bone implantation. Aligned with the strategic plan for SDG 3, the incorporation of natural components derived from Fucoidan into the bone graft can enhance the healing process and decrease the risk of infection (of the autograft). This is critical for bone regeneration, as adequate vascularization is necessary to supply nutrients and oxygen to regeneration tissue. By enhancing vascularization, fucoidan can support the growth of new bone and facilitate the healing process. Aim: This research purpose to develop biodegradable implants combination of PLGA, calcium sulphate, and fucoidan that gradually degrade as new bone tissue forms, eliminating the need for a second surgery to remove the implant regulate the inflammatory response. Method: This study is to investigate the ability of scaffolds to reduce inflammation in human mesenchymal stem cells (hMSCs) that will be activated by lipopolysaccharide (LPS). This method will be done by measuring the levels of certain interleukins and oxidative stress metabolites (IL-1β, IL-10, and nitrites) that play a role in the immune response. Thus, biomimetic PLGA, nCS, and Fucoidan scaffolds promoting bone tissue regeneration and controlling inflammatory responses are proposed. Results: The results revealed that adding PLGA to the calcium and fucoidan composite enhanced the strength and decreased the degradation rate of calcium sulphate. The new combination composite shows a biodegradable material. The degradation test showed a fucoidan-dependent increase in the PLGA/CS/Fu pH compared to PLGA/CS. Conclusion: Based on the present in vitro results, it can be concluded that CS and Fu can be successfully introduced into PLGA enhance cell attachment and exhibit anti-inflammatory properties. Thus, it is potential for commercialization for bone implant application.

Keyword: Bone Scaffold, Poly (lactic-co-glycolic) acid, Calcium Sulfate, Fucoidan, Tissue Engineering.

PP FERMENTED BURGER

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Abstract

Tempeh is widely acknowledged as a very good plant-based protein source and as a potential diet meat alternative. However, there are some issues with tempeh prepared from soybeans, such as the fact that soybeans have been identified as an allergen that can cause allergy symptoms and require a long processing time. Furthermore, tempeh's short shelf life limits its marketability. Therefore, the purpose of this work was to produce tempeh from pigeon peas, also known as dhal beans, which are more cost-effective, simple, and time-saving than producing tempeh from soy beans. The tempeh patty burger's quality was also studied, including its water holding capacity (WHC) and cooking parameters (cooking loss, cooking yield shrinkage, and moisture retention). In order to assess the general acceptability of the tempeh patty burger, a sensory evaluation was also carried out using the hedonic 9-scale test. The results demonstrated a considerable improvement in moisture retention and cooking yield, as well as a significant decrease in cooking loss and shrinkage for patty burgers made with pigeon pea tempeh compared to the control, which was made with soy bean tempeh. Generally, the formulated tempeh patty burger seemed to be more accepted by consumers with respect to all organoleptic properties. Finally, it is recommended to use tempeh from pigeon peas as a meat substitute for producing patty burgers at a reduced cost while enhancing health, cooking qualities, and sensory criteria. Thus, this patty burger is recommended for vegetarians.

Keyword: fermented, tempeh, pigeon pea, patty burger, vegetarian

A COMPARATIVE STUDY OF PRE-GERMINATION FOR IMPROVEMENT OF MUNG BEAN SPROUTS

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Abstract

30 Mung bean seeds were soaked in each treatment solution which is pure tap water, pure distilled water, 0.5g/L of sucrose solution, and 2.34g/L of saline solution for 6 hours at room temperature. The treatment solution was refreshed every 12 hours then rinsed with distilled water and sprayed with the solution every 12 hours during the germination for 3 days. Our results showed that sucrose solution significantly increased the growth rate where the length was 0.7cm more than the control and germination rate was 6.7% more than distilled water, and sucrose-treated sprouts had 0.75% more sugar brix (1.9%). However, in terms of phenolic content, antioxidant percentage, vitamin C content, and protein content, the results showed there is no significant difference between the treatments. The key finding in the results is that sucrose shows that vitamin C increased by 17.8272 mg/g than in control (51.1971 mg/g). In phenolic content, saline shows a slight difference, where it had 8.95 mg/g more than the control (53.86 mg/g). The increase of vitamin C contributes to the antioxidant percentage in sucrose-treated sprouts, where the result shows 8.95% (62.81%) more than control. Where protein content shows that distilled water-treated sprouts showed the highest protein content (49.875%). The table shows that there is no significant difference between all of the samples ($p>0.05$) in the sensory data, but there is a significant difference between sucrose and distilled water. The sensory scope is referred from Linkert 5 scope data. Sucrose shows an increase in appearance (0.86), aroma (0.58), taste (0.42), texture (0.76), sweetness (0.34), juiciness (0.68), and general acceptability (0.62) than distilled water

Keyword: Pre-Germination, Mung Bean Sprouts.

SUGARPINE PAPER

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Abstract

Wood serves as the primary raw material in global paper production, a practice that has caused significant deforestation and consequent harm to the environment. This has led to the need to find alternative raw materials for paper production. In this research, sugarcane bagasse and pineapple leaves were identified as potential alternative raw materials due to their abundance and the environmental benefits of utilizing agricultural waste. The sugarcane bagasse and pineapple leaves were mixed in different ratios, namely, 100: 0, 0:100, 50:50, 60:40, and 40:60. These materials were pulped using the soda chemical pulping and bleaching process. The papers obtained were tested for their physical properties (thickness and grammage), absorbency time, water solubility, and biodegradability. Results showed that the average thickness of all the papers produced ranged from 0.27mm to 1.10mm, showing an increase in paper thickness with increasing grammage from 121.37g/m2 to 586.60g/m2. The most absorbent paper (6s) was found to be the 100% sugarcane bagasse and mixture of 60% sugarcane bagasse and 40% pineapple leaves. The solubility rate was highest when pineapple leaves were the predominant component, with 40% of sugarcane bagasse and 60% of pineapple leaves. However, as the proportion of sugarcane bagasse increased, the solubility decreased. Biodegradability data showed that the formulation with 50% sugarcane bagasse and 50% pineapple leaves exhibited the most rapid decrease in biodegradability over the 15-day period. In conclusion, the production of paper from sugarcane bagasse and pineapple leaves is feasible and can be used for various applications. This approach contributes to sustainable practices and reduces the environmental impact of traditional wood-based paper.

Keyword: Paper, Sugarcane bagasse, Pineapple leaves

BAXTILES: BACTERIAL CELLULOSE-BASED TEXTILES

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Abstract

The growing demand for sustainable and eco-friendly fashion has led to significant interest in bio-leather as an alternative to traditional animal-derived leather (Garcia & Prieto, 2018). This research explored the potential of bio-cellulose produced from SCOBY (Symbiotic Culture of Bacteria and Yeast) of fermentation in green tea mediums enriched with fruit waste, such as durian and papaya peels, as a sustainable alternative for leather production (Sun et al., 2010). Durian shells, an abundant bio-resource, have shown promise in various applications, including antibacterial bandages and as a wheat flour substitute (William, 2021; Kusumaningtyas & Syah, 2020). Our study specifically explores the efficiency of bio-cellulose production using durian and papaya peel powder. The findings show that bio-cellulose derived from SCOBY in a durian substrate performs better in thickness (μ=8.475mm), water swelling ration (23%) and flexibility (73 folds) compared to the papaya substrate. This suggests the potential of durian peel waste for sustainable bio-cellulose production, aiding environmental conservation and waste management, simultaneously aligning with Sustainable Development Goal 12 (SDG 12) which emphasizes responsible consumption and production.

Keyword: Bio-Cellulose, Durian Peels, Sustainable Textiles.

THE EFFECTIVENESS OF WOOD VINEGAR AS AN ORGANIC PESTICIDES

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Abstract

Growing concern over the environmental and health impacts of synthetic pesticides has spurred interest in exploring alternative pest management strategies. This study investigates the effectiveness of wood vinegar as an organic pesticide in controlling bugs, a common pest that attacks grapevines, in the environment of Nilai Polytechnic. This research uses a systematic experimental approach, using a controlled environment in a polytechnic winery. Whitefly populations were monitored before and after treatment with wood vinegar, assessing their impact on pest population dynamics and vine health. Furthermore, this study evaluates the ecological implications of using wood vinegar, taking into account its non-toxic properties and potential benefits for soil health. Preliminary results suggest the promising effectiveness of wood vinegar in reducing whitefly infestations while minimizing the environmental risks associated with conventional pesticide use. This research contributes to increasing knowledge about sustainable pest management practices, offering insights into the practical application of wood vinegar as an environmentally friendly solution for pest control in agricultural settings.

Keyword: Wood Vinegar, Insecticides, Vine Tree.

INCLUSIVE DESIGN PLANTER BOX

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Abstract

This research study seeks to address this critical issue by focusing on the development and evaluation of user-friendly boxes designed specifically for wheelchair users. The purpose of this study is identify wheelchair users who have disabilities encounter significant barriers to gardening. Determine the most effective design features, dimensions and materials for planter boxes that cater to the specific needs and preferences of wheelchair users. Today, wheelchair users who have disabilities encounter significant barriers to accessing services. However, it's possible that the lack of knowledge and comprehension of the needs of those with disabilities is what's causing the issue. Obtaining the right accessibility is not just a matter of convenience, it's essential for their independence, safety, and quality of life. By acknowledging the specific challenges and dynamics within the wheelchair users communities, we can contribute to a thriving and harmonious living space for all the Wheelchair users. From the interview, we were able to identify that by creating an accessible planter box for wheelchair users is a fantastic idea to promote inclusivity in gardening. Consider a design with a lower height for easy reach, wide opening path for an easy access, perhaps using material that are durable and most importantly not harmful. In Conclusion, We can infer that everyone can gain from the provision of wheelchair-accessible facilities. This study's primary goal is to give wheelchair users comfort and amenities. Hopefully, more inventive concepts and wheelchair-accessible facilities will be developed in the future. Wheelchair-accessible amenities must to be installed and distributed throughout. Wheelchair users could participate in all family activities and enjoy more free time with their loved ones if there were more facilities available for them.

Keyword: Wheelchair users, Planter box, Height, User-friendly.

Innovation
Information, Communication and Technology

ePolikuExam SYSTEM

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Abstract

The ePolikuExam System is a transformative project developed for the Unit Peperiksaan Politeknik Kuching Sarawak, designed to address and streamline graduation matters and the Credit Transfer and Credit Exemption (CTCE) processes. This web-based system was conceived to fill a critical gap by providing a dedicated online platform for these previously manual and time-consuming procedures. The primary goal of the ePolikuExam System is to enhance the efficiency and effectiveness of managing applications related to graduation and CTCE. Students can easily submit applications for graduation, credit transfer, and credit exemption through an intuitive web interface, which also supports the direct uploading of necessary documentation. Applicants can monitor the status of their submissions in real-time. Furthermore, administrators and department heads can review, approve, or reject applications through a secure and streamlined process. The system was developed using Agile methodology, to ensure that the final product effectively met user needs. Visual Studio was utilized for the development environment, while XAMPP Web Server was chosen for web application deployment and testing. The implementation of the ePolikuExam System represents a significant shift from traditional, manual procedures to a more efficient, integrated, and user-friendly online experience. By transforming how graduation and CTCE processes are managed at Politeknik Kuching Sarawak, it offers a modern, reliable, and user-centric solution that benefits all stakeholders involved.

Keyword: Web-based System, Graduation, CTCE, Unit Peperiksaan, Politeknik Kuching

INTEGRATED ASSET MANAGEMENT SYSTEM (IAMS)

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Abstract

Asset management plays important role in one of the aspects of the governance of an organization. Generally, asset management covering aspects of acquisition, acceptance, registration, use, inspection, maintenance, disposal and write-off of assets. According to lab coordinator of Civil Engineering Lab, some assets are either not properly cleaned after usage or not placed back to its original place. At the same time, an asset audit usually takes a long time while the asset borrowing and lab booking still use the manual method. In order to solve these problems, a system known as Integrated Asset Management System (IAMS) is developed. This main objective to develop this online system is to store and display the information and data of asset, asset borrowing and lab booking. This system is developed by using HyperText Markup Language (HTML), Active Server Pages (ASP), Microsoft SQL Server and Bootstrap. There are three modules in this system namely Asset Database Module, Asset Borrowing Module and Lab Booking Module. The Asset Database Module contains information of asset such as figure of the asset, status of the asset, location of the asset and others. Therefore, IAMS system manages to reduce the duration of asset audit. IAMS system also enable students to borrow asset and to book the lab through online. IAMS system can be replicated and modified to be used at local and private university, government departments and private companies. As a conclusion, IAMS system enable an organization to manage all of its assets effectively.

Keyword: Integrated Asset Management System, asset, system, asset borrowing, lab booking

MySelenggara@POLYCC

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Abstract

MySelenggara@POLYCC is an innovation in the Immovable Asset Maintenance involving application and monitoring of maintenance, upgrades, and emergency works for institutions under the Department of Polytechnic and Community College Education (JPPKK). The development of MySelenggara@POLYCC aims to assist the department and institutions in coordinating allocation and activities related to maintenance, upgrades, and emergencies within JPPKK. This system is developed with several objectives: expanding access to approval of financial allocation requests based on maintenance works requested by institutions; establishing a centralized information hub for timely and effective handling of damage-related issues, in line with Lean Management principles.The innovation addresses identified issues such as incomplete institutional applications, difficulty in accessing information related to application status and approvals due to manual review requirements, and overlapping or repeated submissions by institutions. The study involved 98 respondents from management personnel in institutions: management staff (10.2%), engineers (13.3%), assistant engineers (63.3%), and others (13.3%). The majority (76.5%) were from community colleges, 22.4% from polytechnics, and 0.8% from other institutions. Findings from the study indicate that this innovation is suitable in terms of the competence level of implementers, with an overall minimum score of 4.65, showing agreement with the objectives of MySelenggara@POLYCC in enhancing productivity and management efficiency at institutional levels by reducing turnaround time and establishing data tracking for work monitoring.

Keyword: Maintenance, MySelenggara@POLYCC, Database

MONITORING DASHBOARD (i-MONITOR_FE@POLYCC)

Nik Afiqah binti Kamil,[1], Ts. Mohd Asnawi bin Abd Wahab[2] and Ts. Sharul Nizam bin Yaakop[3]
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Abstract

The Department of Polytechnic and Community College Education (JPPKK) is a department under the Ministry of Higher Education (KPT) that offers education programs in TVET fields. Polytechnics and Community Colleges (POLYCC) comprise 36 polytechnics and 106 community colleges. To ensure the offered academic programs meet the set quality standards, all programs at POLYCC have been accredited by accrediting bodies. This aligns with KPT's goal to enhance the quality of higher education institutions and their programs in Malaysia. In recognizing academic programs for SPM and equivalent graduates, the role played by the Department is crucial in ensuring continuous recognition and adherence to quality standards. One of the considerations is the safety factor of fire extinguishers. Findings and warnings from auditors frequently obtained by institutions relate to unnoticed expiration dates by responsible personnel, leading to major warnings and potentially retracting or shortening the recognition period. This innovation was developed to achieve several objectives, including collecting expiration date data of fire extinguishers from polytechnics and community colleges. Moreover, this database serves as a platform to monitor actions taken on these findings. Additionally, frequent turnover of personnel at institutions results in inadequate updating of current data. This innovation was developed using Google Sites, a tool generally used to create simple websites serving as informational, portfolio, or internal organizational sites. Based on its functionality, the Department can detect institution failures in data updates and take immediate actions before the accrediting body audits the institution. With the data collected, the Department and institutions can request annual or periodic maintenance allocations. In conclusion, this innovation can help institutions monitor and prevent major concerns during the program accreditation process.

Keyword: POLYCC, fire extinguishers

Innovation
Logistic and Supply Chain Management

SOLAR FUSHION PRO

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Abstract

With the rising demand for food delivery services, the reliance on mobile devices, such as smartphones and navigation systems, has become crucial for delivery riders. However, ensuring a reliable power source throughout their shifts remains a significant challenge, particularly in areas like Negeri Sembilan. Through interviews and questionnaires distributed to food delivery riders in Negeri Sembilan, it has been identified that the lack of accessible power sources during shifts poses a significant challenge. Delivery riders often face disruptions and inconveniences due to drained batteries, impacting their efficiency and earning potential. Therefore, the main objective of this project is to design and develop a specialized solution to address the power source challenges faced by food delivery riders in Negeri Sembilan. The proposed solution is a solar-powered portable charger specifically designed for food delivery riders. This solar power bank utilizes renewable energy to charge devices on the go, providing a sustainable and reliable power source during shifts. With durable construction and convenient features such as multiple charging ports and a compact design, it aims to enhance the productivity and efficiency of delivery riders in Negeri Sembilan. In conclusion, this project aims to address the pressing issue of power source accessibility for food delivery riders in Negeri Sembilan through the development of a specialized solar power bank. By providing a reliable and sustainable charging solution, this project endeavors to improve the working conditions and overall experience of delivery riders, ultimately contributing to the efficiency and effectiveness of food delivery services in the region.

Keyword: Delivery Services, Rider, Portable Charger.

PURE WOOD SOAP

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Abstract

In general, the principle of a sustainable environment refers to the evolution that establishes a balance between resource consumption trends and levels of resource depletion. This paper addresses an innovative product from wood waste so-called Pure Wood Soap with an eco-friendly, cost-effective, versatile, durable and aesthetically pleasing material. Wood waste is a renewable resource that can be recycled into usable products. This product innovation focused on wood waste generated from wood pallets that help to reduce the amount of waste sent to landfills, where it can take decades or even centuries to decompose. It was formulated using wood waste added with natural plant-based ingredients without artificial fragrances suitable for all especially industrial workers in the construction, automotive, and manufacturing industries. The natural ingredients help to dissolve and dilute stubborn dirt, allowing it to mix more readily with water before being scrubbed off and rinsed away. According to the pilot survey, 93.6% of the respondent's reaction towards the soap is unique and new to the market segmentation while 96.8% of the respondents will recommend the soap to a friend or colleague. This soap is believed as one of the methods that are environmentally preferable because it reduces the number of unwanted and unused wooden pallets other than removes dirt, grease and grime across surfaces. By making use of recycled wood, manufacturers can save money while reducing their environmental impact and creating a more sustainable future.

Keywords: Wood Waste Disposal; Waste Management; Recycling; Sustainability

Innovation
Social Science

A VIRTUAL HOLOGRAPHIC PRAYER MAT FOR MUSLIM

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Abstract

Purpose: This study examines the development and potential impact of the Holographic Prayer Mat, an innovative device that combines advanced technology with Islamic prayer traditions. The research aims to assess how this technology can enhance the prayer experience for Muslims worldwide, particularly in terms of accessibility, convenience, and spiritual connection.
Methodology: The research employs a comprehensive analysis of the device's technical specifications, user interface, and cultural implications. This includes an evaluation of the holographic technology, GPS capabilities, and user experience design. Additionally, the study considers ethical considerations and potential cultural impacts through a review of relevant literature and theoretical frameworks.
Results: The Holographic Prayer Mat demonstrates significant potential in addressing common challenges faced by Muslims in maintaining daily prayer routines, especially when traveling or in non-traditional prayer environments.

Key findings include:
1. Successful integration of holographic technology to project a full-sized prayer mat.
2. Accurate Qibla direction functionality using GPS and sensor technology.
3. Enhanced portability and accessibility compared to traditional prayer mats.
4. User-friendly interface with customization options and additional religious information.

Conclusion: The Holographic Prayer Mat represents a significant advancement in the intersection of technology and religious practice. It offers a solution that maintains the essence of Islamic prayer traditions while adapting to modern lifestyles. This innovation has the potential to foster greater inclusivity and consistency in daily worship practices for Muslims globally. However, further research is needed to fully understand its long-term impact on religious practices and to address any potential ethical concerns regarding the use of technology for the Muslim society.

DIGITAL MARKETING COMMUNICATIONS STRATEGY THE ARISTA HOTEL PALEMBANG AFTER PANDEMIC

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Abstract

This research purposes are to analyze the digital marketing communication strategy of The Arista Hotel Palembang after the pandemic and to analyze the reasons for implementing the digital marketing communication strategy of The Arista Hotel Palembang after the pandemic. The spread of Covid-19 is affecting the hospitality industry around the world. The most significant continent is the continent of Asia. most Asian countries are very fond of their industry and tourism especially Indonesia, directly affects their hospitality industry. With an average of 57.70% in hotel occupancy, as many as 63.4 million employees in the industry decreased income, thus having a greater impact on employment. For negative impacts, several actions were taken. an increase in stimulus with the use of digital marketing can attract visitors to use hotel products at the hotel. This research uses constructivism paradigm with qualitative approach. Determination of key informant as using a purpose sampling technique. The results show that The Arista Hotel Palembang implemented CMC (Computer Mediated Communication) and IMC (Integrated Marketing communication) and succeeded in increasing the revenue earned by The Arista Hotel.

PAPER WALLETS: SUSTAINABLE EVENT SOUVENIRS

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ABSTRACT

Paper wallets are a sustainable and eco-friendly alternative to traditional event giveaways, providing attendees with a lasting reminder of their event. They are practical and reflect attendees' values, reducing environmental pollution caused by non-biodegradable materials. Event planners should consider sustainable alternatives for a positive impact. Paper wallets are made from recycled materials and are designed by collaborating with graphic designers to create visually appealing designs. The manufacturing process involves cutting, folding, and assembling the paper into wallet designs. These eco-friendly, lightweight accessories can be custom printed with event logos, messages, and artwork. The initiative promotes environmental awareness and sustainable event planning practices, highlighting innovative waste reduction solutions. Offering eco-friendly paper wallets as premium souvenirs can attract event organizers, while partnering with eco-conscious brands for co-branded designs can expand market reach. Paper wallets offer a sustainable, practical, and environmentally friendly solution for event souvenirs with significant business potential.

Keyword: Paper Wallets, Sustainable, Event Souvenirs.

MAGNIFERA CALAMANSI FLAKES

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Abstract

Magnifera Calamansi Flakes is an innovation food product which is combination of mango peel and calamansi fruits peel in the form of flakes. Mango peel and calamansi fruits peel contains considerable content of antioxidants and dietary fiber needed to the human body. Besides that, the fruit peel are by-products from the agro-industrial processing can potentially make a significant contribution for widespread consumption. The objectives of this study are to develop a product by determining the best formulation which are F1 and F2 based on hedonic test conducted on untrained panellists. The second objective to conduct market research on this product. Magnifera Calamansi Flakes was developed using blanching and drying method. This product was evaluated for physical and organoleptic properties and sensory characteristics. A sensory test using a hedonic scale was conducted to find out the level of respondent's acceptance of this product which was evaluated by 30 untrained panellists. Meanwhile, a market study was also conducted with a total of 60 respondents involved. The data were analysed using a variance test (ANOVA) through Statistical Package for Social Sciences (SPSS) Version 20. The organoleptic characteristics of this product had an aromatic smell and slightly sour taste. In term of observation, the physical characteristics show a brownish colour, an attractive, have a flaky appearance, a rough and dry texture. The result of the sensory test found that F2 (mean F2=1.53) showed higher acceptance compared to F1 (mean F1=1.80). The results of the market research found that 96.7% agreed that this product is nutritious because produced from the peel of mango and calamansi which are natural and without preservatives. Magnifera Calamansi Flakes was developed from the by-products, are considered to be cheap sources of valuable and nutraceutical ingredients. Processing of by-products reduces waste disposal problem, adds value to the product for food and other industrial use. Overall, the production of Magnifera Calamansi Flakes can have various positive impacts not only on consumers but also to the food industry, economy and environment.

Keyword: Mango Peel, Calamansi Peel, Drying, By-products

MyLPsolver

Raja Nadia binti Raja Ahmad [1], Erna Ruhaily binti Rusli [2], Azua Hanim binti Mohd Said [3], Muhammad Danish Qusaini bin Ediyasni[4] and Muhammad Alifzikry bin Zuzainizam[5]
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Abstract

Linear Programming is one of the topics offered in Engineering Mathematics 3 (DBM30033) taken by engineering's students in Polytechnic. In this topic, students learn how to solve problem using Graphical Method and Simplex Method. To solve the problem in this topic, student must perform manually with long working before getting the final answers. Hence, the chances are high for the students to obtain the wrong answer and they tend to lose their interest, focus and feel demotivated. Based on final examination results, the average mark for this topic, is 12 out of 25 marks. Hence, to create a better understanding of this topic, MyLPsolver was created. MyLPsolver is an educational application created and developed using free Excel software for teaching and learning Linear Programming. This initiative was done by lecturers at JMSK, Politeknik Nilai, and aligns with the latest syllabus requirements, making it suitable for use in Polytechnics offering the same course. This innovation addresses the need for a more interactive and innovative learning environment for Linear Programming. Students and lecturers can access the user-friendly application offline anytime, anywhere. MyLPsolver indirectly aids students in comprehending and solving Linear Programming problems efficiently.

Keyword: MyLPsolver, Linear Programming

BIODEGRADABLE PALM CONTAINER (BioPaC)

Muhammad Irfan Hadi bin Mazlan, Muhammad Amirul Hafiz bin M. Jefridzain, and Adam Fakhri bin Musa

Abstract

As we know, Malaysia isthe second largest oil palm producer in the world which means Malaysia have a lot of palm estate. Day by day, garbage is increasing all the time which has caused the need for more space for garbage disposal. Most of the garbage is made of plastic which is difficult to dispose of. Therefore, we created a Biodegradable Palm Container (BioPaC) that combines palm fronds with a mixture of tapioca flour and rice flour to form a multi-purpose container according to the shape created. The ingredients used are only natural ingredients such as palm fronds, water, tapioca flour and rice flour. The use of this natural material will certainly facilitate the disposal process of the product when it is no longer used because it will not pollute the environment. BioPaC will replace the use of commonly used plastic containers such as stationery containers, plastic pots, plate and trash cans. This will reduce the production of plastic items at the same time reduce waste that cannot be disposed. In conclusion, BioPaC will minimize the increase in waste disposal space and provide options to users to move towards a better world by supporting green technology innovation products.

ECOBANANA GROWMEDIA

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Abstract

EcoBanana GrowMedia is an innovative and sustainable growing medium crafted entirely from 100% banana peel. This groundbreaking product addresses both agricultural efficiency and environmental sustainability, offering an eco-friendly alternative to traditional growing media. Banana peels, often discarded as waste, are rich in essential nutrients like potassium, phosphorus, and calcium, making them an excellent resource for plant growth. The production process involves collecting banana peels, drying them in an oven for 3-4 hours, and then processing them into a fine substrate, which is packaged into small grow media units. This innovative method preserves the natural nutrients within the peels, making them readily available for plant growth. EcoBanana GrowMedia has been shown to significantly enhance plant health and productivity. The unique composition of the growing medium improves soil structure, water retention, and nutrient availability. These benefits lead to healthier root development and more robust plant growth across various applications, including horticulture, urban gardening, and commercial agriculture. This EcoBanana GrowMedia also have been used in class DYL10322 Plant Science while students do their experiments. EcoBanana GrowMedia represents a significant advancement in sustainable agriculture by transforming waste into a valuable resource. This growing medium offers a renewable and organic alternative to synthetic fertilizers and peat-based media, aligning with the principles of the circular economy. By leveraging the nutrient-rich properties of banana peels, EcoBanana GrowMedia addresses global agricultural challenges and promotes environmental stewardship, making it an ideal solution for modern sustainable farming practices.

Keyword: Banana Peel, Grow Media, Sustainable

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