



INTERNATIONAL
TVET
ACADEMIC AND
RESEARCH
CONFERENCE
(ITARC) 2020

**ABSTRACTS
COMPILATION**

“RESEARCH & INNOVATION TOWARDS EXCELLENCE IN TVET”





ABSTRACTS COMPILATION

INTERNATIONAL TVET ACADEMIC
AND RESEARCH CONFERENCE 2020

ITARC 2020

20 FEBRUARY 2020

ORGANIZED BY:





International TVET Academic and Research Conference (ITARC) 2020

“Research & Innovation Towards Excellent in TVET”



PKTM PRESIDENT PREFACE

Praise to Allah s.w.t for His gracious and mercy that this conference is able to be executed with full blessing from Him. The conference assembles together the academicians from engineering, technology and social science backgrounds to exchange and share their experiences and research results and discuss the practical challenges encountered and the solutions adopted.

It is our pleasure to welcome all delegates to the 1st International TVET Academic and Research Conference (ITARC) 2020.

ITARC 2020 is held with the theme *Research & Innovation towards Excellent in TVET* on 20th February 2020 at the venue of Politeknik Nilai, Negeri Sembilan, Malaysia. It is a collaborative effort between Malaysian Technical Doctorate Association (MTDA), Malaysia and Medan Polytechnic (POLMED), Indonesia.

The program consists of invited sessions, and parallel presentations covering a wide range of topics in engineering, technology, science and social sciences. It also provides all attendees with the opportunities to meet and interact with one another, and gain good knowledge and experiences from the presentations.

This booklet covers the compilation of all abstracts from both academicians between this two Asian countries. The various themes of papers presented in this conference are dedicated to reflect good quality research outputs based on the emerging conference theme that portrays a new era in TVET future endeavour.

The committee would like to humbly thank all presenters, participants, and reviewers who have shown a very good spirits in sharing innovative ideas in their expert areas. We also would like to express our gratitude for the overwhelming support given by the Director General of Polytechnic and Community College Department, Ministry of Education Malaysia, the management team of Polytechnic Nilai and Polytechnic Medan in assuring the success accomplishment of this conference.

Wishing the best and enjoyable academic and social gathering to all delegates of ITARC 2020, and look forward to seeing you all in ITARC next conference.

20th February, 2020

Conference Organizing Committee



DIRECTOR OF MEDAN STATE POLYTECHNIC PREFACE

First and foremost, let us all express the highest gratitude to Allah swt for His generosity and blessings towards the ITATRC 2020 Seminar to be organised. On behalf of the Medan State Polytechnic, I want to congratulate those involved directly and indirectly in organising ITARC 2020 especially the team from PolMed itself, the Malaysian Technical Doctorate Association (PKTM), Nilai Polytechnic (PNS) and Kota Bharu Polytechnic PKB).

The implementation of ITARC2020 is the collaboration between PNS and PolMed which aims to conduct excellent researches to enhance the education services PNS and PolMed while contributing to the development of two countries, namely Malaysia and Indonesia.

It is my hope that everyone will benefit from the implementation of ITARC2020 seminar in terms of knowledge, skills, economic improvement and more for mutual ease. It is also hope to provide opportunities for students, faculty, and researchers and all through ITARC 2020 as a forum for discussion and sharing of knowledge, experience and skills. It is my anticipation that this kind of scientific activity will continue from time to time in various fields of knowledge and skills.

Thank You

20th February, 2020

Direktor of Medan State Polytechnic



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INTERNATIONAL TVET ACADEMIC RESEARCH AND CONFERENCE (ITARC) 2020 PROGRAMME TENTATIVE

Tarikh: 20 Februari 2020

Masa: 7.45 pagi - 5.30 petang

Masa	Aktiviti/Tempat
7.45–8.30 pagi	Pendaftaran dan Sarapan Pagi (Tempat: Lobi Pentadbiran)
8.30–10.30 pagi	Sesi Pembentangan Selari 1 (Tempat: Bilik Kuliah Pusat Pembangunan Kompetensi, Pusat Penyelidikan & Inovasi)
10.30–11.00 pagi	Rehat
11.00 pagi–1 tengahari	<ul style="list-style-type: none"> • Majlis Perasmian oleh: Abdul Rahman, S.E, Ak, M.Si. CA Direktur Politeknik Negeri Medan (POLMED) • <i>Keynote Speech</i> oleh: Dr. Zulkefle Ismail Assistant Professor Universiti Teknologi Brunei (Tempat: Dewan Kuliah Utama)
1.00 tengahari– 2.00 petang	Rehat/Solat/Makan Tengahari
2.00–5.30 petang	Sesi Pembentangan Selari II (Tempat: Bilik Kuliah Pusat Pembangunan Kompetensi, Dewan Kuliah Utama, Pusat Penyelidikan & Inovasi)
5.30 petang	Tamat/Bersurai



PARALLEL SESSION ITARC 2020

VENUE 1: LECTURE ROOM 1

Session 1: 8.30-10.30

Theme: Category A (Education)		Session Chair: DR FAIZAH SHAARI Assistant Chair: AGUS EDY RANGKUTI
Time	Presenter	Topic
8.30	Ermyna Seri	ED001: Design and Development of Multimedia-Based Learning Media in English for Specific Purposes (ESP) for Computer Engineering and Informatics at Basic Level
8.45	Aulia Salman	ED002: The Impact of Knowledge and Skills Acquired on Business Performance of Malaysia and Indonesia TVET Graduates
9.00	Ermyna Seri	ED003: Role Play in English Teaching for Students of Banking and Finance Study Program Semester 1 Academic Year 2019-2020
9.15	Ermyna Seri	ED004: Analisis on the Impact of Curriculum Change in Banking and Finance Study Program on Students' English Competence
9.30	Meily Surianti	ED005: Mapping of Accounting Study Program Readiness in Indonesia towards the Industrial Revolution 4.0
9.45	Sri Mahyuni	ED006: Mapping and Curriculum Design of It Audit Subject
10.00	Rizal Agus	ED007: Main Solutions and Strategies in Developing Entrepreneurship for Students Using ANP Method: Indonesia-Malaysia Case
10.15	Rizal Agus	ED008: Analysis of the Priority Problem in Developing Entrepreneurship for Students

Session 2: 2.00-5.00

Theme: Category A (Education)		Session Chair: DR NORIAH ABDUL MALEK Assistant Chair: HALIAWAITY YAMAN
Time	Presenter	Topic
2.00	Safaruddin	ED009: Pengaruh Program Pembelajaran, Kompetensi dan Motivasi Terhadap Minat Berwirausaha pada Mahasiswa Politeknik Negeri Medan dan Politeknik Nilai Negeri Sembilan Malaysia
2.15	Meily Surianti	ED010: Development of an Accounting Curriculum Model Based on the Industrial Revolution 4.0 Approach



2.30	Md Baharuddin Abdul Rahman	ED011: An Application of Project Based Learning (PJBL) for STEM Teachers as 21th Century Learning Methods: an Effectiveness, Importance & Skills Development
2.45	Siti Salwa Abdul Mutalib	ED012: Kesiediaan Pelajar Terhadap Kemahiran Insaniah dalam Bidang Pengurusan Hotel dan Katering di Politeknik sebagai Persediaan Menghadapi Alam Pekerjaan
3.00	Fazlinda Ab Halim	ED013: Aplikasi Pembelajaran Mobil dalam Kalangan Pelajar Politeknik
3.15	Marlina Mohamad	ED014: Amalan Terbaik dalam Rekabentuk Laman Web e-Pembelajaran
3.30	Rosmawati Razak	ED015: Keberkesanan Kaedah Gamifikasi bagi Meningkatkan Penguasaan Kosa Kata Pelajar Kemahiran Khas untuk Kursus Bahasa Melayu
3.45	Sugunadevi Arjunan	ED016: Management Control System as a Performance Management Framework for Technical and Vocational Education and Training (TVET) in Malaysia
4.00	Hasniza Tawyer	ED017: Penggunaan Telefon Mudah Alih sebagai Mobile Learning (M-Learning) untuk Tujuan Pengajaran dan Pembelajaran
4.15	Azizi Mohd Zain	ED018: Motivasi Kesukarelawan ke Arah Memupuk Semangat Kesukarelawan Melalui Penglibatan Aktiviti PISPA dalam Kalangan Pelajar Kolej Komuniti Melaka, Negeri Sembilan
4.30	Amri Abdullah	ED019: Aggresiveness of Media and Its Impact on Student's Attitude
4.45	Suhana Sanatora	ED020: Tinjauan Keperluan Kursus Pembelajaran Sepanjang Hayat (PSH) dalam Kalangan Komuniti Pengerang: Kajian Kes Kolej Komuniti Bandar Penawar

VENUE 2: LECTURE ROOM 2

Session 1: 8.30-10.30

Theme: Category A (Education)		Session Chair: DR. NIK AZIDA ABD.GHANI Assistant Chair: MARLON TUA SIBARANI
Time	Presenter	Topic
8.30	Nor Maizura Othman	ED021: Korelasi Sistem Catatan Bergu Terhadap Minat Pelajar dalam Kursus Perakaunan
8.45	Nurul Ajleaa Abdul Rahman	ED022: Enhancing Tvet Learners' 21st Century Skills through Innovative Speaking Skill Technique



9.00	Nor Rizal Md Noar	ED023: Keberkesanan Penggunaan Foldable Computer Casing bagi Modul SSK3033 - Baikpulih dan Penyenggaraan Komputer di Kolej Komuniti Cawangan Maran
9.15	Hasrina Abdullah	ED024: Kajian Keberkesanan Produk Inovasi Multipurpose Foldable Drawing Desk 2.0 (Mfdd 2.0) dalam Kalangan Pelajar Sijil Multimedia Kreatif Pengiklanan.
9.30	Halimah Adnan	ED025: Kajian Keperluan Pembangunan Sistem Maklumat Pelajar Tangguh dan Berhenti (e-TB) Kolej Komuniti Paya Besar
9.45	Nur Salehah Saadon	ED026: Kajian Bekalan Air Mempengaruhi Emosi dan Sahsiyah Pelajar di Kolej Komuniti Paya Besar
10.00	Nur Azlin Azman	ED027: Mengenalpasti Tahap Penguasaan dan Penggunaan Bahasa Inggeris dalam Kalangan Pelajar Sijil Teknologi Elektrik dan Sijil Multimedia Pengiklanan, Kolej Komuniti Paya Besar
10.15	Anis Safira Ghazalli	ED028: Kajian Keperluan Aplikasi Pembelajaran 4.0 dalam Kursus Multimedia Kreatif Pengiklanan

Session 2: 2.00-5.00

Theme: Category A (Education) / Category C (IT)		Session Chair: DR. ABU ZARIN SELAMAT Assistant Chair: DRA ERMUNA SERI
Time	Presenter	Topic
2.00	Rohidatun M.W	ED029: Augmented Reality System as an Interactive Methods for TVET Education
2.15	Suzana Baharudin	ED030: The Effectiveness of Using Journey Map as a New Teaching and Learning Tools for Business Ethics
2.30	Hafizan Kosnin	ED031: Pembangunan Pemampat Kit Pneumatik sebagai Alat Bantu Mengajar (ABM) untuk Kursus Kejuruteraan Loji dan Pneumatik di Jabatan Kejuruteraan Mekanikal Politeknik Merlimau
2.45	Faizah Sahbudin	ED032: TBEm4U Bagi Takaful Basic Examination (TBE)
3.00	Salwa Anuar	ED033: Penerimaan Pelajar Automotif Terhadap Implementasi Pengajaran Berintegrasikan Augmented Reality (AR) di Kolej Komuniti
3.15	Logaiswari Indiran	ED034: Innovation Capability at TVET Institutions, Role of Polytechnics in Malaysia
3.30	Juhaida Hassan	ED035: A Proposed Framework in Identifying Skills Set in CDIO Implementation for Diploma Retail Management (DRM) Programme in Polytechnic Malaysia
3.45	Fara Diba Badrul Hisham	IT008: The Water Overflow Tracking Alarm System



4.00	Mohd Aznan Janal	IT014: The Effectiveness in Using Remaps in Improving Wifi Coverage
4.15	Mohd Aly Rajaie Halim	IT015: Boundaryless Assets Database Accessed by QR Codes to Support Asset Management Efficiency

VENUE 3: SEMINAR ROOM

Session 1: 8.30-10.30

Theme: Category B (Engineering Science) / Category E (Life Science)		Session Chair: DR. BENNY B. NASUTION Assistant Chair: SITI MARTINI MUSTAPHA
Time	Presenter	Topic
8.30	Wan Nor Shela Ezwane Wan Jusoh	ES010: Development of Portable Electronic Sensor Trainer (PEST) for Teaching and Learning Purpose
8.45	Mohd Yusri Ibrahim	ES012: Kajian Tahap Keselamatan Komponen (Reliability) pada Dandang Stim
9.00	Zafarida Kadir	ES013: Development of Specific Heat Arduino Kit
9.15	Nurul Syahirah Mohd Nor	ES015: Quasi-Static Response of Bolted Joints in Road Safety Barriers under Out-Of-Plane Loadings
9.30	Norlaili Abdul Rahman @ Abdul Rahim	ES016: Development of An Auto Cupping Machine by using Arduino Nano Controller
9.45	Rahmat Widia Sembiring	ES017: The Important of Handling Disaster Crisis
10.00	Razulainie Mohd Radzuan	IT012: Media Multimedia Sistem Paparan Digital Pintar bagi Penggunaan Penyampaian Maklumat dalam Pengajaran dan Pembentangan
10.15	Adiani Ab Rahman	LS002: Alat Senaman Pinball

Session 2: 2.00-5.00

Theme: Category B (Engineering Science) / Category E (Life Science)		Session Chair: DR MEILY SURIANTI Assistant Chair: NOOR HAZINI AB. HALIM
Time	Presenter	Topic
2.00	Melvin Bismark H. Sitorus	ES001: Effect of Welding Heat Input on the Corrosion Rate of Carbon Steel MMA Welding
2.15	Suprianto	ES002: The Implementation of Solar Power System Using Capacity of 1300 VA
2.30	Suprianto	ES003: Battery Protection System for More Loads Using Arduino
2.45	Marlon Tua Pangihutan Sibarani	ES004: AC Breakdown Voltage Characteristic of Patchouli Oil by Using Various Electrodes



3.00	Halimah Che Hassan	ES005: The Study of AC Breakdown Voltage by Varying Transformer Secondary Currents and Use of Half Ball Electrode
3.15	Abd. Rahman	ES008: Quality and Reliability Analysis of Medan State Polytechnic Machine Lathe Machines through Static Geometric Test According to ISO 1708 Standard
3.30	Faraziah Hassan	ES009: Solar Generating Power for Domestic Use
3.45	Mohd Yusri Ibrahim	ES011: Kajian Keselamatan Pengguna Faktor Kebisingan dan Pencahayaan di Bengkel Mesin
4.00	Zuniwanas Mohamad	LS001: An Innovation of Walking Aid for Rehabilitation Patients
4.15	Muhamad Jais Gimin	LS003: Assessment of Environmental Sustainability using UI GreenMetric at Politeknik Merlimau as a Green TVET Campus
4.30	Samihah Abdul Latif	LS004: An Overview of Design Thinking: Human Centric Approach
4.45	Ahmad Azlan Ab Aziz	LS005: The Application of Integrated System and Antenna Designs in Pineapples Fertigation at Sultan Salahuddin Abdul Aziz Shah Polytechnic's, Smart Farm

VENUE 4: MEETING ROOM

Session 1: 8.30-10.30

Theme: Category D (Social Science)		Session Chair: DR. AZHAR
		Assistant Chair: SITI NOOR ABDULLAH
Time	Presenter	Topic
8.30	Rizal Agus	SS001: Determine Priority Aspect in Developing Entrepreneurship for Students Using ANP Method: Indonesia-Malaysia Case
8.45	Nor Hayati Fatmi Talib	SS002: A Survey on the Role of Women in Empowering Sustained Economic Growth and Sustainable Development through Education on Poverty Reduction (Comparative Study Indonesia and Malaysia)
9.00	Marlya Fatira Ak.	SS003: Role of Women in Empowering Sustained Economic Growth and Sustainable Development through Education on Poverty Reduction (Comparative Study Indonesia and Malaysia)
9.15	Mazura Mansor	SS004: The Relationship between Intelligence and Entrepreneurial Intention among Malaysian Polytechnics Students



9.30	Muhamad Zuhirsyan	SS005: Aplikasi Kaedah Fuzzy Delphi Terhadap Kerangka Kriteria Pelaksanaan Proses Penyembelihan Dalam Industri Makanan Halal: Suatu Pandangan Malaysia Dan Indonesia
9.45	Siti Raudha Azis	SS006: Rekabentuk Kompetensi Penyembelihan Haiwan dalam Industri Makanan Halal Berasaskan Teknik Kumpulan Nominal: Kajian Kes di Malaysia dan Indonesia
10.00	Deliana	SS007: Efektivitas Audit Internal pada Politeknik Negeri di Indonesia
10.15	Deliana	SS008: Pendeteksian Kecurangan Laporan Keuangan dengan Analisis Fraud Triangle Pada Consumer Foods Industry yang Terdaftar di Bursa Efek Indonesia

Session 2: 2.00-5.00

Theme: Category D (Social Science)		Session Chair: DR. MUHAMMAD NAZRI ABDUL HALIM Assistant Chair: EDY SAHPUTRA SITEPU
Time	Presenter	Topic
2.00	Deliana	SS009: Efektivitas Audit Internal pada Lembaga Layanan Pendidikan Tinggi (L2Dikti) Seluruh Indonesia
2.15	Deliana	SS010: Peranan Dukungan Manajemen Puncak dan Kompetensi Auditor Internal dalam Meningkatkan Efektivitas Audit Internal Studi Kasus pada Kabupaten Nias Barat
2.30	Deliana	SS011: Pendeteksian Kecurangan Laporan Keuangan dengan Analisis Fraud Triangle pada Perusahaan LQ45 yang Terdaftar di Bursa Efek Indonesia
2.45	Deliana	SS012: Perilaku Kecurangan Akademik Mahasiswa Akuntansi Pada Perguruan Tinggi Negeri Di Pulau Sumatera
3.00	Edy Sahputra Sitepu	SS014: The Role of Sustainable Tourism Development on Tourist Satisfaction and Revisit Intention
3.15	Nursiah	SS015: The Role of Intellectual, Emotional and Spiritual Intelligence towards Entrepreneurial Intention among TVET Student Indonesia and Malaysia
3.30	Dina Arfianti Siregar	SS016: The Empowerment of Batik Crafters in Kampung Batik Medan
3.45	Dina Arfianti Siregar	SS017: The Effect of Entrepreneurial Marketing Methods and Marketing Intelligence on SME Sales Performance in Medan City
4.00	Deliana	SS018: Effectiveness of Internal Audit on State Polytechnic in Indonesia



4.15	Deliana	SS019: Detection of Financial Statements Fraud with Fraud Triangle Analysis on the Consumerfoods Industry in Indonesia Exchange
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VENUE 5: PPI ROOM

Session 1: 8.30-10.30

Theme: Category D (Social Science)		Session Chair: DR NURUL AJLEA ABD RAHMAN Assistant Chair: DR. SUHERMAN
Time	Presenter	Topic
8.30	Deliana	SS022: Detection of Financial Statement Fraud with Fraud Triangle Analysis in Lq45 Company in Indonesia Stock Exchange
8.45	Deliana	SS023: Academic Fraud Behavior of Accounting Students at State Universities on Sumatera
9.00	Deliana	SS024: The Relevance of Using Accounting Information to Increase the Small Medium Enterprise Performance in Indonesia
9.15	Haliawaity Yaman	SS032: Factors Affecting the Growth of Logistic Industry in Malaysia
9.30	Agus Edy Rangkuti	SS027: Impact of Logistics Performance on National Income: Case Studies of Indonesia and Malaysia
9.45	Juhaida Hassan	SS028: The Role of Sustainable Tourism Development on Tourist Satisfaction and Revisit Intention among Local Tourist in Malaysia
10.00	Zanatul Shima Aminuddin	SS029: Enhancement of Zakat Institutions through Zakat Management of Asnaf Gharimin: Case Study in Malaysia and Indonesia
10.15	Suzana Ithnain	SS030: Problems and Obstacles Faced By SMES: A Comparative Study between Malaysia and Indonesia

Session 2: 2.00-5.00

Theme: Category D (Social Science)		Session Chair: DR MAZURA MANSOR Assistant Chair: ABDUL RAHMAN
Time	Presenter	Topic
2.00	Meily Surianti	SS031: Development of Malaysian and Indonesian Fintech Products: Malaysian and Indonesian Landscape Studies
2.15	Quyru Zeta Ishak	SS026: Strategic Capacity Building Programs of the Involvement of TVET Graduates in Business after Graduation: Comparative Study between Malaysia and Indonesia



2.30	Dina Arfianti Siregar	SS033: The Development of Small, Medium Enterprises Competitiveness in Indonesia and Malaysia: a Comparative Study
2.45	Marlya Fatira Ak	SS034: Design of Sharia Banking Practice Learning System for Improving Student Competence
3.00	Marlya Fatira AK.	SS035: Role of Women in Empowering Sustained Economic Growth and Sustainable Development Through Education on Poverty Reduction
3.15	Narizan Abdullah	SS036: Pengaruh Kompetensi Keusahawanan dan Kecenderungan Keusahawanan: Satu Kajian di Politeknik Nilai Negeri Sembilan dan Politeknik Medan
3.30	Marlya Fatira Ak	SS037: Identification of the Basic Needs Of Farmers in Developing Businesses through the Financing of Islamic Microfinance Institutions
3.45	Marlya Fatira Ak	SS038: Application of Sharia Principles as the Formation of Social Responsibility of Insani Resources
4.00	Meily Surlanti	SS040: Pendesainan Sistem Informasi Akuntansi, Pengendalian Internal dan Tata Kelola untuk Badan Usaha Milik Desa
4.15	Suherman	SS041: Strengthening of BAZNAS Institution in the Management of Zakat for Asnaf Gharimin Indonesia and Malaysia Comparative Study
4.30	Meily Surlanti	SS042: The Analysis of Transaction Data Processing Automation in Indonesia and Malaysia SME's: Comparative Study of SME's In North Sumatera and Negeri Kelantan

VENUE 6: TECC ROOM

Session 1: 8.30-10.30

Theme: Category D (Social Science)		Session Chair: DR ROHANI MOHD YUSOF Assistant Chair: NORHIDAYAH MOHD SALLEH
Time	Presenter	Topic
8.30	Enny Segarahati Barus	SS045: Solution and Strategy Modeling for Improving SMEs Performance: The Case of North Sumatera BDSP Partners
8.45	Agus Edy Rangkuti	SS046: MSMEs Marketing Strategies in Increasing Competitiveness in Modern Retail Markets Case Studies Medan City Indonesia and Kota Bharu Malaysia
9.00	Haliawaity Yaman	SS047: Factors Affecting the Growth of Logistics Industry in Malaysia



9.15	Nurul Hayati Latif	SS050: Impak Pertimbangan Moral dan Kecekapan Moral dalam Kalangan Pentadbir Akademik di Institusi Pengajian Tinggi Awam, Malaysia
9.30	Nurul Aseaking Ismail	SS051: Potensi Kawasan Batu Buruk sebagai Pusat Keusahawanan Pelancongan di Negeri Terengganu
9.45	Tuti Kurnia	SS052: Model of Distribution of Zakat Funds for Fishermen through IMFS
10.00	Nurul Hayati Latif	SS053: Impak Dimensi Produk Pelancongan Terhadap Imej Resort Kolam Air Panas Sungai Klah, Sungkai, Perak Sebagai Destinasi Pelancongan
10.15	Norashikin Samuri	SS054: The Analysis Factors of Human Error in Warehouse Management

Session 2: 2.00-5.00

Theme: Category D (Social Science)		Session Chair: DR HASNIM HARUN Assistant Chair: GUNAWAN
Time	Presenter	Topic
2.00	Mohd Azuan Ali	SS055: Hubungan antara Persekitaran Kerja Terhadap Prestasi Kerja dalam Kalangan Pensyarah Kolej Komuniti di Negeri Melaka.
2.15	Khuzaimah Baharuddin	SS056: Islamic Values in Transformational Leadership
2.30	Nurul Hayati Latif	SS057: Impak Pertimbangan Moral dan Kecekapan Moral Dalam Kalangan Pentadbir Akademik di Institusi Pengajian Tinggi Awam, Malaysia
2.45	Mohd Aiman Mohd Fauzi	SS058: The Relationship between Knowledge, Values, Attitudes, Skills and Sustainable Practices towards the Practice of Water Conservation during Ablution: A Case Study at Al-Barokah Mosque Kampung Bukit Cherakah Jaya
3.00	Nik Azida Abd Ghani	SS059: Utilization of Digital Marketing Strategies amongst Small and Medium Enterprises in Kelantan, Malaysia
3.15	Aznida Wati Abdul Ghani	SS060: Potensi Keusahawanan Makanan Tradisi Kuala Berang sebagai Produk Industri Desa
3.30	Nor Rahimy Khalid	SS061: Building Product Innovation and Brand Reputation in the Apparel Market
3.45	Rizal Agus	SS044: How to Get the Ideal Non Performing Finance? (Problems Analisis Using ANP: Case of North Sumatra BPRS)
4.00	Deliana	SS020: Effectiveness of Internal Audit in Higher Education Services (L2DIKTI) Institutions in Indonesia



4.15	Deliana	SS021: The Role of Top Management Support and Internal Auditor Competence in Improving the Effectiveness of Internal Audit Case Study in West Nias District
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VENUE 7: DKU

Session 2: 2.00-5.00

Theme: Category C (IT)		Session Chair: DR. AZHAR ABDULLAH Assistant Chair: DR. ROSLINA
Time	Presenter	Topic
2.00	Ferry Fachrizal	IT001: Transportation Management System (TMS) for Efficiency and Cost Effectively in Supply Chain Management
2.15	Rahmat Widia Sembiring	IT002: River Basin Management for a Better Life
2.30	Rahmat Widia Sembiring	IT003: River Flood Management Based on Mobile and Web
2.45	Budi Harianto	IT004: Analysis of Temperature and Humidity Control System in Oyster Mushroom Cultivation with DHT-11 Sensor Based on Raspberry PI
3.00	Budi Harianto	IT005: Design of Disaster Victim Detection System and Its Location Point Using Arduino
3.15	Khairul	IT006: Rancang Bangun Sistem Akreditasi Politeknik Negeri Medan
3.30	Gunawan	IT007: A Study on Apriori Algorithm
3.45	Wizni Khairah Mohd Nawi	IT013: Kebolegunaan Aplikasi Mudah Alih (Mobile Apps) Network Kit bagi Kursus Asas Rangkaian Komputer dalam Kalangan Pelajar Sijil Teknologi Maklumat di Kolej Komuniti Pasir Gudang
4.00	Faizah Shaari	IT009: Predictive Analysis on Heartdisease Data Set: Deep Learning Investigation
4.15	Asnidatul Adilah Ismail	IT010: Issues and Challenges of Information Technology (IT) in Malaysia: Industry Perspective on New Competencies amongst It Polytechnics' Graduates
4.30	Mohd Aznan Janal	IT011: The Effectiveness in Using Packet Tracer Simulation Software in Improving the Skills among Computer System and Networks Programme Students



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Category A (Education)



ED001: Design and Development of Multimedia-Based Learning Media in English for Specific Purposes (ESP) for Computer Engineering and Informatics at Basic Level

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Although there have been some researchers conducted in the use of multimedia device as learning media and have contributed significantly in the development of the teaching and learning of foreign language, however this research outlines about design and development of English for computer engineering and informatics teaching and learning materials that use blended learning method with a multimedia-based learning media in the context of troubleshooting as the English basic level learning outcome. This is a descriptive qualitative research which aims to measure the students' listening skill before and after a given multimedia-based learning tutorial and to investigate whether the use of multimedia-based learning media is effective or not. This research worked with a sample size of 30 respondents out of 150 as the total population who those are students of computer engineering and informatics of Politeknik Negeri Medan, Indonesia who study in semester 1 within the academic year 2019-2020. The students' were given a listening test at a pre-test to see their base line and post-test to see the students' progress after the multimedia-based learning tutorials was given. The findings shows that the average score of pre-test is of 48.57 which means the students' achievement in listening test score falls under the category of low, whereas the post-test average score indicates 77,33. As the result, there is a high increase in listening test score obtained and progress in students' learning. From the data of questionnaires collected, the result indicates of 93.66% students strongly agree that the multimedia-based learning media is very effective. To conclude, multimedia-based learning media device on the English for specific purposes for computer engineering and informatics is available now and the blended learning method with multimedia-based learning media have contributed significantly in the increase of students' listening skill. It is recommended that the teachers should put creativity and involve students in the design and development to use multimedia-based learning media for teaching and learning foreign languages, because the students can practice and do acting while they are performing the dialogues. In addition, it is more interesting, effective and audio visual.

Keywords: Design and Development, Multimedia-Based Learning Media, English for Specific Purposes (ESP) for Computer Engineering and Informatics



ED002: The Impact of Knowledge and Skills Acquired on Business Performance of Malaysia and Indonesia TVET Graduates

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Abd Rahman, Rosilah Wok, Siti Martini Mustapa & Nik Azida Abd Ghani

Malaysian Technical and Vocational Education and Training (TVET) institutions and Indonesian Vocational institutions aim to provide formal, non-formal and informal learning to prepare graduates with the required skills and knowledge needed in their career or business. A research was conducted to identify the impact of knowledge and skills acquired by engineering graduates from Malaysian TVET institutions and Indonesia vocational institutions on business performance. This research also aimed to identify the problems and challenges faced by engineering graduates in business. A total of four TVET graduates from Malaysia and five vocational graduates from Indonesia, who own businesses related to engineering field were interviewed using semi-structured questions. The data gathered were analyzed using qualitative method. It was found that most Malaysian TVET graduates and Indonesia vocational graduates interviewed voiced up the importance of communication and technical skills to help them perform in their business. They also stressed on the importance of knowledge in information technology, building networking and motivation to start and sustain their business. Among the problems and challenges faced by Malaysian TVET graduates are lack of financial resources to start a new business and difficulties to sustain business in period of weaken economic condition. Whereas Indonesian vocational graduates faced problems in marketing their products and services. Dynamic curriculum, management and technopreneurship-related courses and more up-to-date facilities were suggested to help prepare future Malaysian TVET and Indonesian vocational graduates in business. It was also suggested to develop strong alumni association to facilitate better networking and collaborations.

Keywords: TVET, Entrepreneurship, Technical Skills, Business Performance & Alumni

ED003: Role Play in English Teaching for Students of Banking and Finance Study Program Semester 1 Academic Year 2019-2020

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Lina Rusli & Ermyna Seri

The problem in this research is how the implementation of role play in teaching English conducted to the first semester students of the Banking and Finance Study Program within the Academic Year of 2019-2020. This research aims to investigate whether the implementation of Role Play in the teaching of English in class is effective or not to improve students' speaking skill as the competency based of the learning outcomes of the English Syllabus of Banking and Finance Study Program, Accounting Department in Semester 1. The



teaching and learning English Language method used is that Role Play in which the learning materials blended into the communication activities by performing conversations in short term goal, while in the long-term the graduates of the Banking and Financial Study Program Accounting Department at Politeknik Negeri Medan will have soft skills, namely communication skills in English. The research respondents were taken randomly according to the Slovin formula totaling 71 first semester students. Descriptive qualitative research method is used to describe if the application of Role Play can effectively improve or not students' competence in English. The findings show that Role Play technique can improve students' speaking skill. This can be seen from the test scores of students' speaking skill that have improved. The average score of speaking skill in the pre-test before Role Play was applied is 66.03. This Pre-Test Score indicates "Average" category, then after the Role Play technique was applied in the communication activities the students' were given a Post-Test. The Post-Test was given two times. The first cycle of Post-Test score increased to 73.76. The second cycle Post Test was given again and the average score obtained is 74.53. As the results, the implementation of Role Play in the teaching of English to students has contributed to the increased of students' Pre-Test average scores to Post-Test in the first cycle by 7.13% then in the second cycle increased by 0.87%. To conclude the implementation of Role Play has contributed a great increase in the students' average score that falls into "High" category and improved students competence. In addition, Role Play is very effective technique to be applied in the teaching of English to improve students' speaking skill. It is recommended that in order to improve the students' speaking skill, "Role Play" is very effective technique to apply.

Keywords: Role Play & Teaching English

ED004: Analisis on the Impact of Curriculum Change in Banking and Finance Study Program on Students' English Competence

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Ermyna Seri

This is a continuation of research conducted for the students of Banking and Finance Study Program to investigate their English Competence using Curriculum based in the year of 2008 in implemented in 2018. This research aims to analyze: (1) if there is an impact of curriculum change in Curriculum based in the year of 2013 on the alumnae's English competence according to the stakeholders; (2) if the English Course Syllabus in Curriculum based in the year of 2013 is relevant or not relevant according to the stakeholders; and (3) to get some feedback and suggestions from the stakeholders. This research uses the summative evaluation model. The data used is that qualitative data taken from the respondents who used the English Course Syllabus implemented in the curriculum of the year 2013. The data collected from the questionnaires distributed to the respondents (stakeholders) as the alumnae's line supervisors. Analysis data used is that qualitative



descriptive. The research findings shows that (1) There is no impact of Curriculum change in the curriculum based in the year of 2013 on the alumnae's English Competence according to the stakeholders; (2) English Course Syllabus implemented in the curriculum of the year 2013 is still relevant according to the stakeholders as the alumnae's line supervisors; (3) a) active learning should be conducted continuously to improve students' speaking skill from the first semester up to the last semester; (b) learning materials particularly reading texts should be relevant to the banking and finance contexts; (c) TOEFL class should be conducted. To conclude, the curriculum change did not influence on the students competence in their speaking skill. In addition, active learning during the communicative activities should be conducted continuously; learning materials should be related to the banking and finance contexts: Students' TOEFL score should reach the standardized industrial requirement.

Key Words: Impact, Curriculum Change of Banking and Finance Study Program, English Course Syllabus, Alumni & Stakeholders

ED005: Mapping of Accounting Study Program Readiness in Indonesia towards the Industrial Revolution 4.0

Meily Surianti

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Nanny Dewi

Penelitian ini bertujuan untuk menghasilkan pemetaan yang detail mengenai kesiapan prodi-prodi akuntansi yang ada di Indonesia dalam menyongsong era Revolusi Industri 4.0 ditinjau dari kesiapan kurikulum, sumber daya manusia, serta sarana dan prasarana penunjang. Hasil penelitian ini diharapkan dapat dijadikan sebagai masukan bagi pengambil kebijakan dalam hal ini adalah organisasi profesi akuntan (Ikatan Akuntan Indonesia) khususnya Kompartemen Akuntan Pendidik untuk penyusunan program pengembangan akuntansi di Indonesia. Hasil penelitian ini juga diharapkan dapat memberikan kontribusi untuk bidang ilmu akuntansi yang berkaitan dengan teknologi informasi dan proses produksi seperti Sistem Informasi Akuntansi, Akuntansi Manajemen, Akuntansi Biaya dan *Data Analytic*. Metode penelitian yang dilakukan adalah penelitian kualitatif deskriptif. Data dikumpulkan dengan mengirimkan kuisisioner ke prodi-prodi akuntansi di Indonesia melalui IAI Wilayah-Kompartemen Akuntan Pendidik di masing-masing propinsi. Kuisisioner didesain dengan menggunakan pertanyaan terbuka dan tertutup. Selanjutnya akan diambil sampel 3 prodi masing-masing mewakili Indonesia Bagian Barat, Tengah, dan Timur untuk dilakukan interviu secara mendalam terkait isu-isu yang berhubungan dengan permasalahan yang dihadapi di dalam menyiapkan prodi mereka untuk menyongsong era RI 4.0.

Kata Kunci: Revolusi Industri 4.0, *Mapping*, Kurikulum, Sumber Daya Manusia & Sarana Prasarana



ED006: Mapping and Curriculum Design of It Audit Subject

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Khaira Amalia & Abdul Rahman D

Penelitian ini bertujuan menghasilkan desain kurikulum mata kuliah auditing berbasis *information technology* yang telah mengakomodir perubahan-perubahan yang terjadi sesuai dengan kebutuhan pasar. Desain terdiri dari konten matakuliah, pengembangan yang dibutuhkan atas staf pengajar, serta fasilitas pendukung yang dibutuhkan dalam proses pembelajaran. Hasil penelitian ini juga diharapkan dapat memberikan kontribusi pada pengembangan bidang ilmu akuntansi terapan, khususnya bidang ilmu akuntansi dan teknologi serta mata kuliah-mata kuliah yang terkait. Desain kurikulum ini sangat penting dilakukan, mengingat kurikulum prodi akuntansi dan prodi akuntansi keuangan publik sampai dengan saat ini belum mengakomodir perubahan-perubahan teknologi informasi yang terjadi ke dalam kurikulumnya. Data dikumpulkan dengan melakukan *deep interview* serta FGD dengan pihak-pihak yang terkait, dalam hal ini adalah manajemen di Kantor Akuntan Publik di Medan dan Jakarta, serta pengelola program studi akuntansi di perguruan tinggi tempat dilakukannya penelitian. Data dianalisis dengan menggunakan kualitatif deskriptif

Kata kunci: Audit, *Information Technology* & Kurikulum

ED007: Main Solutions and Strategies in Developing Entrepreneurship for Students Using ANP Method: Indonesia-Malaysia Case

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The unemployment trends of university graduates appear to be still high, both in Indonesia and Malaysia, although entrepreneurship education has been taught in various universities in the two countries. This is certainly not in line with the government's desire to reduce the level of unemployment, especially for college alumni. This study aims to describe which are the most important main aspects in the cluster of solutions and strategies in pursuing entrepreneurship development with the Student Case in Politeknik Negeri Medan-Indonesia and Politeknik Nilai Negeri Sembilan Malaysia. Using the Analysis Network Processing method, conducted a Focus Group Discussion of 7 entrepreneurial experts and distributed pairwise questionnaires to 25 students and alumni entrepreneurs

Key words: Student Entrepreneurship, Solutions & Strategies, ANP



ED008: Analysis of the Priority Problem in Developing Entrepreneurship for Students

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The percentage of unemployed alumni from universities still tends to rise both in Indonesia and Malaysia, even though entrepreneurship education has been taught at universities in the country. This situation is certainly not in accordance with the wishes of the two governments in reducing the level of unemployment of college alumni. This study aims to describe the aspects of the problem that are important priorities in conducting entrepreneurship development for students, Case in Politeknik Negeri Medan-Indonesia and Politeknik Nilai Negeri Sembilan Malaysia. By using the ANP method, FGD was conducted to experts and distributed questionnaires to 25 participants.

Key words: Priorities of the Problem, Student Entrepreneurship, ANP

ED009: Pengaruh Program Pembelajaran, Kompetensi dan Motivasi Terhadap Minat Berwirausaha pada Mahasiswa Politeknik Negeri Medan dan Politeknik Nilai Negeri Sembilan Malaysia

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Berbagai faktor yang berperan dalam mempengaruhi minat berwirausaha diantaranya adalah Program Pembelajaran, Kompetensi, Motivasi, Lingkungan keluarga, Lingkungan sekitar, dan Faktor Kepribadian. Pada penelitian ini, peneliti membatasi pada 3 (tiga) faktor yakni Program Pembelajaran, Kompetensi dan Motivasi mahasiswa Politeknik Negeri Medan dan Politeknik Nilai Negeri Sembilan Malaysia. Pada penelitian ini bertujuan untuk mengetahui pengaruh program pembelajaran, kompetensi dan motivasi terhadap minat mahasiswa berwirausaha di Politeknik Negeri Medan dan Politeknik Nilai Negeri Sembilan Malaysia. Variabel-variabel yang digunakan adalah variable Program Pembelajaran (X_1) variable Kompetensi (X_2), variable Motivasi (X_3) serta variable minat berwirausaha (Y) dengan jumlah populasi sebanyak 498 orang dari 2 (dua) Politeknik yakni mahasiswa semester 5 Politeknik Negeri Medan Program Studi Administrasi Bisnis dan Manajemen Bisnis dan mahasiswa Politeknik Nilai Negeri Sembilan Jurusan Perdagangan dengan menggunakan teknik pengambilan sampel yaitu *probability sampling* dengan rumus Slovin sehingga diperoleh 88 orang sebagai sampel. Diharapkan penelitian ini memberikan manfaat bagi kedua Politeknik dalam upaya merencanakan peningkatan kompetensi dan motivasi mahasiswa sehingga dapat meningkatkan minat berwirausaha.

Kata Kunci: Program Pembelajaran, Kompetensi, Motivasi & Minat Berwirausaha



ED010: Development of an Accounting Curriculum Model Based on the Industrial Revolution 4.0 Approach

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Penelitian ini bertujuan untuk mengembangkan kurikulum akuntansi dengan pendekatan Industri 4.0. Target khusus yang diharapkan dari penelitian ini adalah dihasilkannya desain kurikulum yang dapat digunakan sebagai masukan dalam revisi kurikulum Prodi Akuntansi Keuangan Publik maupun Prodi Akuntansi yang direncanakan akan dilaksanakan pada tahun 2020. Sedangkan target jangka panjang dari hasil penelitian ini adalah tersedianya kurikulum yang dapat mengakomodir kebutuhan pasar, sehingga lulusan Prodi Akuntansi maupun Prodi Akuntansi Keuangan Publik memiliki kompetensi dan pengetahuan yang *competitive*. Tujuan khusus maupun jangka panjang ini dapat dicapai dengan cara melakukan *deep interview* dengan beberapa perusahaan industri dan Kantor Akuntan Publik untuk mengidentifikasi kebutuhan dunia industri terhadap lulusan akuntansi

Kata Kunci: Pengembangan, Kurikulum & Revolusi Industri 4.0

ED011: An Application of Project Based Learning (PjBL) for STEM Teachers as 21th Century Learning Methods: an Effectiveness, Importance & Skills Development

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P'ng Fei Mun, Mohammad Tarmizi Abu Seman & Asniza Ishak

This paper focuses on the effectiveness of PjBL in STEM learning development, The Importance of PjBL application for STEM subjects and PjBL helps STEM teachers to develop student's project or product and their competent skills. The methods focus on a quantitative analysis for 67 sample that included STEM teachers that entering workshop of PjBL in January 2019. The entire sample attended one day workshop to understand the PjBL concept and develop the PjBL blueprint in the process of STEM syllabus. At the end of workshop section all participants answered the questionnaire that covers three variables which includes, i) the effectiveness of PjBL for STEM, ii) the important of PjBL for STEM, and iii) PjBL suitable in developing student's competencies skills. The data's shown that the mean for overall research data of 21 items measurement among 67 samples at the highest score mean (4.3). The data's means of three variables shown the mean for effectiveness [E] is at mean (4.3), while for variable important [I] at score mean (4.4) and the mean for variable skill development [D] at mean (4.1). The percentage of disagreement of STEM teacher for PjBL is at (1.5%), while for the neutral response is at (11.9%), but for agree and strongly agree are at percentages of (43.3%). This data's percentages shown that almost (86.6%) STEM teachers agreed that the PjBL methods will strongly give positive impact of



effectiveness, important and develop student's skill competencies. Hopefully this research data's will help all STEM teachers to apply the PjBL concept in their classroom learning methods future as a part of 21th century learning.

Keywords: Application, PjBL, STEM, Effectiveness, Importance, Development, Competencies & Skills

ED012: Kesiediaan Pelajar Terhadap Kemahiran Insaniah dalam Bidang Pengurusan Hotel dan Katering di Politeknik sebagai Persediaan Menghadapi Alam Pekerjaan

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Wan Hanim Nadrah Wan Muda, Fazlinda Ab Halim

Di Malaysia, industri pelancongan mendapat sokongan kerajaan di mana pelaburan dalam sektor pelancongan lebih rnenumpukan kepada pembinaan hotel-hotel dan resort kerana sektor ini mampu meningkatkan ekonomi negara seperti yang tercatat di dalam Kumpulan Dalam Negara Kasar (KNDK) dan menjadikan negara sebagai negara maju. Kajian dan hasil laporan daripada Jabatan Perangkaan Malaysia dan Jabatan Tenaga Kerja Malaysia mendapati pengangguran dalam sektor hospitaliti adalah benar wujud kerana terlalu mementingkan pencapaian akademik berbanding pengetahuan lain. Graduannya Politeknik cenderung mendapat tawaran yang lambat berbanding graduan kolej swasta yang lain disebabkan kurangnya kemahiran insaniah. Kajian ini bertujuan untuk mengkaji persepsi pelajar terhadap kemahiran insaniah yang mereka miliki berdasarkan sebelas elimen kemahiran insaniah yang di perlukan oleh pihak majikan perhotelan di dalam bidang Pengurusan Hotel dan Katering di Politeknik sebagai persediaan menghadapi alam pekerjaan. Kajian ini menggunakan kaedah kuantitatif dan di sokong oleh kaedah temubual terhadap pelajar Diploma Pengurusan Hotel dan Katering disemua politeknik yang mempunyai kursus tersebut di Malaysia yang melibatkan 216 orang pelajar. Hasil dapatan mendapati penguasaan pelajar terhadap sebelas kemahiran insaniah yang dikaji adalah tinggi namun masih terdapat perbezaan diantara penguasaan pelajar, persepsi pensyarah dan kehendak majikan terhadap kemahiran insaniah yang perlu ada dalam diri graduan. Kemahiran Insaniah adalah penting untuk memastikan pelajar lebih berketerampilan dan di lihat berkemampuan dalam menggalas tugas- tugas yang bakal dipertanggungjawabkan. Ini kerana, persaingan dan cabaran pekerjaan kini semakin meningkat. Persaingan itu menjadikan kelayakan untuk pelajar di terima masuk semakin sukar. Oleh itu, kemahiran insaniah bukan sahaja perlu diterapkan kepada pelajar Pengurusan Hotel dan Katering tetapi kepada semua pelajar yang bakal menghadapi alam pekerjaan.

Kata Kunci: Kemahiran Insaniah, Hospitaliti, Pengurusan Hotel dan Katering & Pencapaian

**ED013: Aplikasi Pembelajaran Mobil dalam Kalangan Pelajar Politeknik**

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Wan Hanim Nadrah Wan Muda Sharifah Hana Syed Zubin

Pembangunan dan kemajuan teknologi mudah alih berkembang pesat setelah teknologi ini diterapkan dalam sistem pendidikan di Malaysia. Pembelajaran mobil adalah pendekatan pembelajaran yang menentukan penguasaan pengetahuan dan kemahiran melalui teknologi mudah alih. Oleh yang demikian, kajian ini dijalankan bagi mengkaji tahap penggunaan pembelajaran mobil dalam pengajaran dan pembelajaran, faktor-faktor yang mempengaruhi penggunaan pembelajaran mobil serta sikap pelajar terhadap penggunaan pembelajaran mobil ini dalam kalangan pelajar politeknik. Kajian ini berbentuk tinjauan secara deskriptif dan melibatkan seramai 322 sampel pelajar Politeknik Ibrahim Sultan. Borang soal selidik digunakan sebagai instrumen bagi tujuan pengumpulan data. Data yang diperolehi dianalisis menggunakan perisian SPSS versi 21.0. Hasil analisis didapati tahap penggunaan pembelajaran mobil dalam kalangan pelajar adalah tinggi. Faktor-faktor yang mempengaruhi penggunaan pembelajaran mobil seperti persepsi kebergunaan (Perceived Usefulness - PU) dan persepsi mudah digunakan (Perceived Ease of Use-PEOU) berada pada tahap tinggi. Manakala sikap pelajar terhadap penggunaan m-pembelajaran dalam pembelajaran sangat positif. Dapatan kajian ini berguna kepada pensyarah serta pentadbir politeknik dalam meningkatkan penggunaan pembelajaran mobil dalam pengajaran dan pembelajaran.

Kata Kunci: Pembelajaran Mobil, Teknologi Mobil, Politeknik, Pengajaran & Pembelajaran

ED014: Amalan Terbaik dalam Rekabentuk Laman Web e-Pembelajaran

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Aplikasi e-pembelajaran atau pembelajaran dalam talian adalah topik yang sangat luas. Artikel ini membincangkan amalan terbaik dalam merekabentuk pembelajaran secara atas talian supaya dapat memberikan pengalaman pembelajaran terbaik kepada pelajar. Kebelakangan ini terlalu banyak aplikasi e-pembelajaran dihasilkan bagi membantu proses pembelajaran supaya mudah dicapai pada bila-bila masa dan di mana-mana sahaja. Pelajar begitu teruja kerana akses kepada bahan pembelajaran tidak lagi terhad kepada bahan bercetak. Hasil kajian mengenai keberkesanan pembelajaran atas talian menunjukkan dapatan yang tidak selari. Ini disebabkan oleh kebanyakan aplikasi yang dibangunkan tidak menitik beratkan rekabentuk yang berkesan. Jika aplikasi dibangunkan tanpa mengikut ciri-ciri rekabentuk aplikasi e-pembelajaran yang berkesan, adalah mustahil untuk memberikan pengalaman pembelajaran yang bermakna kepada pelajar. Jadi amalan terbaik ini telah dikumpulkan melalui kajian literatur dari buku dan artikel jurnal bagi membantu perekabentuk dan pembangun aplikasi e-pembelajaran untuk menghasilkan



aplikasi yang berkesan. Terdapat tiga perkara utama yang perlu dititikberatkan dalam rekabentuk aplikasi e-pembelajaran iaitu rekabentuk antaramuka, rekabentuk isi kandungan dan rekabentuk interaksi. Dalam rekabentuk antaramuka, antara perkara yang dinilai ialah bagaimana cara menghasilkan antaramuka yang dapat menggunakan beban kognitif (cognitive load) dengan berkesan. Manakala, bagi rekabentuk isi kandungan, apakah teori pembelajaran dan pengajaran yang sesuai diaplikasikan supaya pengalaman pembelajaran menjadi sesuatu yang bermakna. Bagi rekabentuk interaksi pula, penting untuk tingkahlaku sesebuah aplikasi dapat diramal, dijangkakan, dan boleh digunakan. Rekabentuk interaksi yang baik menunjukkan ciri-ciri-ciri seperti mudah digunakan, cekap, selamat, mudah dipelajari dan mudah diingat bagaimana menggunakannya. Dalam artikel ini, amalan terbaik untuk merekabentuk mengikut tiga aspek ini akan dibincangkan. Walaupun amalan terbaik ini masih tidak menyeluruh, namun ia dapat membantu guru, pengajar, pensyarah atau jurulatih supaya dapat menyediakan bahan pembelajaran secara atas talian dan rekabentuk aplikasi e-pembelajaran dengan berkesan dan menarik.

ED015: Keberkesanan Kaedah Gamifikasi bagi Meningkatkan Penguasaan Kosa Kata Pelajar Kemahiran Khas untuk Kursus Bahasa Melayu

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Kajian tindakan ini dijalankan bagi mengkaji keberkesanan kaedah gamifikasi dalam membantu pelajar meningkatkan penguasaan kosa kata serta penggunaannya dalam konteks ayat yang betul untuk kursus Bahasa Melayu kemahiran khas. Melalui pemerhatian dan laporan hasil kajian semula kursus yang dibuat, pelajar-pelajar kemahiran khas agak lemah dalam menguasai kosa kata Bahasa Melayu dan menggunakannya dalam konteks ayat yang betul. Ini memberi kesan kepada pencapaian pelajar di dalam kursus ini. Oleh itu, kajian telah dijalankan terhadap 14 orang responden daripada Sijil Kemahiran Khas di Politeknik Tuanku Syed Sirajuddin bagi menguji keberkesanan kaedah gamifikasi dalam meningkatkan penguasaan kosa kata Bahasa Melayu serta penggunaannya dalam konteks ayat yang betul. Kaedah pengumpulan data kajian adalah melalui pemerhatian, temu bual serta ujian pra dan ujian pasca. Dapatan kajian menunjukkan terdapat peningkatan terhadap penguasaan kosa kata bagi pelajar-pelajar kemahiran khas apabila menggunakan kaedah gamifikasi di dalam pengajaran dan pembelajaran Bahasa Melayu. Selain itu, dapatan kajian juga menunjukkan kaedah gamifikasi dapat meningkatkan motivasi dan pencapaian pelajar dalam Bahasa Melayu melalui aktiviti permainan yang bersifat pendidikan.

Kata kunci: Kaedah Gamifikasi, Kosa Kata & Pelajar Khas



ED016: Management Control System as a Performance Management Framework for Technical and Vocational Education and Training (TVET) in Malaysia

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The use of Management Control Systems (MCS) in Business Organisations had been discussed in the literatures over the last 50 years. However, the application of MCS in Public Sector Organisations or Programs has not been studied. This research attempts to examine the control systems used in Government Ministries in Malaysia, to help them manage the performance management tasks of managing TVET Programmes in their Ministries and Institutions. This study will be conducted in 2 phases; Phase 1 - Detailed case-studies, based on in-depth interviews. The basic conceptual framework for the case-studies is drawn from normative and descriptive theory of management control, including the work of Otley, Kaplan and Berry. Phase 2. Based on the literature review and findings from phase 1 case- studies, grounded hypotheses will be developed, and some of these hypotheses will be tested, using a large sample questionnaire survey in relevant Ministries, TVET Institutions, and Secondary Schools. The survey is also designed to replicate and extend the classic methodology of Hofstede for investigating national culture and values. This study hopes to extend the application of MC theory to public sector and offer the Government another tool to manage TVET Program effectiveness.

ED017: Penggunaan Telefon Mudah Alih sebagai Mobile Learning (m-Learning) untuk Tujuan Pengajaran dan Pembelajaran

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ABSTRAK

Perkembangan yang pesat dalam teknologi terutama dalam bidang teknologi maklumat dan komunikasi (*ICT*) secara langsung telah memberi kesan dalam sektor pendidikan. Sehubungan dengan itu, pembelajaran mudah alih (*M-Learning*) menjadi faktor yang signifikan dalam pelaksanaan Pengajaran dan Pembelajaran (PdP) kini. Kualiti pengajaran di peringkat tinggi adalah penting untuk persediaan pelajar menempuh alam pekerjaan mereka. Ini termasuk penyepaduan teknologi maklumat dan komunikasi, kerana ia berpotensi untuk meningkatkan proses PdP dan dianggap meningkatkan pemahaman pengetahuan kandungan dan pemerolehan kemahiran abad ke-21 yang relevan. Khususnya, penggunaan peranti mudah alih membolehkan pembelajaran aktif pada bila-bila dan di mana sahaja. Oleh itu, tujuan utama kajian ini adalah untuk menilai sejauhmana telefon bimbit memudahkan proses PdP, mengenalpasti aplikasi telefon bimbit yang digunakan untuk PdP, menentukan jenis aktiviti pembelajaran yang difasilitasi melalui telefon mudah alih dan menilai tahap pelaksanaan *M-Learning* dalam membantu proses PdP dalam kalangan pelajar Kolej Komuniti Kota Tinggi. Responden kajian terdiri daripada



50 orang pelajar Kolej Komuniti Kota Tinggi. Kaedah kajian secara kuantitatif dan dianalisis secara deskriptif dengan menggunakan soal selidik sebagai instrumen kajian. Hasil dapatan kajian mendapati bahawa majoriti responden menggunakan telefon bimbit untuk proses PdP. Kajian juga mendapati paling ramai responden menggunakan aplikasi *M-Learning* bagi tujuan memuat naik, memuat turun dan berkongsi sumber akademik melalui telefon pintar manakala yang lain mencatatkan dan menyimpan fail dalam telefon mereka. Tahap pelaksanaan *M-Learning* dalam kalangan pelajar Kolej Komuniti Kota Tinggi berada pada tahap tinggi. Di mana, pelajar Kolej Komuniti Kota Tinggi berpendapat bahawa *M-Learning* sangat perlu dalam membantu mereka dalam PdP walaupun sebahagian besar pelajar menggunakan telefon bimbit untuk melayari media sosial, membuat panggilan dan bermesej. Berdasarkan hasil dapatan yang diperolehi, PdP pada masa kini perlu diperbanyakkan dan diperkayakan melalui *M-Learning* agar selaras dengan pembelajaran abad ke-21 seterusnya dapat melahirkan modal insan yang cemerlang, gemilang dan terbilang. Di samping itu, beberapa cadangan untuk penyelidikan lanjutan bagi menjayakan *M-Learning* juga ada diutarakan.

Kata Kunci: Telefon Mudah Alih, *M-Learning*, Teknologi Komunikasi dan Maklumat (ICT)

ED018: Motivasi Kesukarelawan ke Arah Memupuk Semangat Kesukarelawan Melalui Penglibatan Aktiviti PISPA dalam Kalangan Pelajar Kolej Komuniti Melaka, Negeri Sembilan

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Golongan pelajar yang menuntut di kolej komuniti merupakan aset penting kepada pembangunan dan hala tuju sesebuah negara. Justeru itu, pelajar yang dilahirkan oleh Institut Pengajian Tinggi (IPT) ini perlu memiliki personaliti yang hebat dan berketrampilan. Salah satu usaha yang dapat membantu pembangunan keterampilan pelajar adalah melalui penglibatan mereka di dalam badan beruniform. Secara khususnya, kajian ini bertujuan untuk mengetahui pandangan pelajar yang menyertai badan beruniform terhadap semangat kesukarelawan yang terbentuk sepanjang mereka berada dalam badan beruniform tersebut. Kajian ini dilakukan bagi mengenalpasti faktor-faktor motivasi kesukarelawan yang berjaya disemai dalam penglibatan badan beruniform seterusnya kesan motivasi kesukarelawan kepada para pelajar tersebut. Seramai 145 orang pelajar yang menyertai badan beruniform PISPA di Kolej Komuniti Melaka, Johor dan Negeri Sembilan dipilih sebagai responden kajian. Analisis kuantitatif mendapati terdapat enam elemen faktor motivasi kesukarelawan (nilai, kefahaman, kerjaya, sosial, perlindungan dan peningkatan diri) dan lapan elemen kesan motivasi (nilai, kefahaman, kerjaya, sosial, perlindungan, peningkatan diri, kepuasan dan niat jangka panjang) yang dapat dibentuk sepanjang menyertai badan beruniform ke arah memupuk semangat kesukarelawan melalui penglibatan aktiviti PISPA dalam kalangan pelajar kolej komuniti.



Faktor dan kesan motivasi menyertai PISPA paling dominan ialah kerjaya dan peningkatan diri. Kajian ini telah membuktikan bahawa penyertaan pelajar dalam badan beruniform dapat membentuk semangat kesukarelawan dalam kalangan diri mereka berdasarkan elemen elemen kesukarelawan yang telah dikaji.

Kata Kunci: Semangat Kesukarelawanan, Badan Beruniform, Aktiviti Kokurikulum, Pelajar Kolej Komuniti

ED019: Aggressiveness of Media and Its Impact on Student's Attitude

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Globalization era provided interaction space that is wide open with media to all age level across geographical borders. This study intend to identify student involvement level in terms of aggressive media features is viewed, factor watch, its impact to student behavior and parent's attitude towards student that watch aggressive media. Quantitative research by this survey carried aout among 428 sudents use Azizi et.al's instrument (2014) and data analysed use SPSS version 23.0. This study found that media characterized bg aggressive at moderate level (SM=3.33: SP=0.75), student causes watch at moderate level (SM=3.25; 0.72), effect of media is high (SM=3.99; SP=0.86) with recode value and parent's attitude also at moderate level (SM=3.64; SP=1.21). There is significant relationship between parent's attitude towards effect watch media characterized by aggressive with r positive strong relationship value=.504, n=428, p=0.000<0.05. This study findings can make as as input in implementation of the teaching and course learning related communication and media where lecturer can give special emphasis so that student use media for good and able to select media is viewed. Study or further action need to be implemented so that student aggressive attitude can be shaped and institution not face aggressive incident or violence in institution.

Keywords: Media, Effect Aggressive Media, Parent's Attitude & Student Attitude



ED020: Tinjauan Keperluan Kursus Pembelajaran Sepanjang Hayat (PSH) dalam Kalangan Komuniti Pengerang: Kajian Kes Kolej Komuniti Bandar Penawar

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Kolej Komuniti Malaysia telah dijadikan sebagai hub Pembelajaran Sepanjang Hayat (PSH) berdasarkan memorandum Menteri Pengajian Tinggi pada 20 April 2005. Matlamat utama pelaksanaan kursus PSH adalah untuk membentuk komuniti yang dinamik. Kajian ini bertujuan untuk mengenal pasti kluster kursus PSH yang menjadi pilihan komuniti Pengerang dan faktor-faktor yang mempengaruhi penyertaan komuniti Pengerang di dalam kursus PSH. Saiz sampel kajian adalah sebanyak 382 sampel bagi populasi kawasan kajian iaitu seramai 70043 orang penduduk. Kajian ini menggunakan kaedah kuantitatif dengan menggunakan soal selidik sebagai instrumen kajian. Sebahagian daripada instrumen kajian menggunakan skala likert dan nilai pekali kebolehpercayaan *Alpha Cronbach* terhadap instrumen kajian adalah 0.701 yang menunjukkan bahawa instrumen yang digunakan boleh diterima pakai. Hasil kajian terhadap latar belakang responden mendapati peserta kursus perempuan mendominasi kursus PSH di KKBP iaitu sebanyak 64%, umur peserta kursus PSH secara umumnya di antara 15 – 20 tahun iaitu 54%, responden yang memiliki PMR, SPM dan STPM adalah sebanyak 79% dan 41% responden tidak bekerja. Kajian menunjukkan bahawa terdapat empat (4) kluster kursus PSH yang mendapat skor min sederhana iaitu kursus Komputer Dan Teknologi Maklumat, Perniagaan Dan Keusahawanan, Katering Dan Sajian serta Kerohanian Dan Keagamaan. Ini menunjukkan empat kluster kursus tersebut mendapat permintaan yang tinggi di kalangan komuniti Pengerang. Manakala kluster kursus PSH yang berkaitan Teknologi Pembinaan Dan Penyelenggaraan Bangunan mendapat skor yang terendah iaitu min 2.06. Faktor yang mempengaruhi responden menyertai kursus PSH di KKBP adalah kerana bayaran yuran kursus yang rendah, tempoh masa berkursus yang pendek iaitu antara satu (1) hari atau kurang dan penganjuran kursus yang dilaksanakan di hujung minggu. Adalah menjadi harapan pihak pengurusan di KKBP untuk merancang kursus-kursus yang lebih relevan bagi menarik minat komuniti setempat untuk mempelajari ilmu dan secara tidak langsung dapat meningkatkan kemahiran dan boleh menjana pendapatan sampingan komuniti setempat.

Kata Kunci: Keperluan Kursus, Pembelajaran Sepanjang Hayat (PSH) & Komuniti Setempat



ED021: Korelasi Sistem Catatan Bergu Terhadap Minat Pelajar dalam Kursus Perakaunan

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Kajian ini dijalankan untuk mengetahui korelasi pengetahuan asas dan tahap pemahaman pelajar terhadap sistem catatan bergu yang boleh menarik minat pelajar untuk mempelajari kursus perakaunan. Kajian ini merupakan kajian kualitatif dengan menggunakan borang soal selidik dan diukur melalui Skala Likert. Seramai 22 orang pelajar semester dua daripada program Diploma Akauntansi, Politeknik Hulu Terengganu telah dipilih untuk menjadi responden dalam kajian ini. Responden ini dipilih kerana mereka telah mengikuti kursus DPA10013 Perakaunan Kewangan 1 pada semester satu yang merupakan kursus asas perakaunan. Data-data yang diperoleh dianalisis melalui program *Stastical Package for the Social Science Version 21.0 (SPSS) v21.0*. Hasil dapatan kajian mendapati bahawa lebih separuh daripada responden iaitu dengan nilai min 3.45 mempunyai pengetahuan asas perakaunan. Responden menunjukkan minat dan suka kepada kursus perakaunan dengan nilai min 4.36. Walau bagaimanapun, didapati responden kurang memahami prinsip asas dan peraturan catatan bergu serta menghadapi masalah untuk menentukan kesilapan catatan bergu dengan nilai min kurang dari 4.00. Keputusan analisa ini menunjukkan pelajar berminat terhadap kursus perakaunan dan pemahaman pelajar boleh ditingkatkan dengan menggunakan kaedah penyampaian yang lebih mudah difahami oleh pelajar.

Kata kunci: Catatan Bergu, Minat & Kursus Perakaunan

ED022: Enhancing Tvet Learners' 21st Century Skills through Innovative Speaking Skill Technique

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The present study was conducted to examine the effectiveness of using 21st century skills on improving ESL speaking among TVET learners. Moreover, this study investigated the use of this technique to improve ESL speaking skills. The respondents included 100 diploma students enrolled in a Communicative English course in Polytechnic. The pre-tests and post-tests were administered for ascertaining polytechnic' performance in speaking skills. These results presented the positive effects of the 21st century skills. Therefore, this study attempted to reveal TVET learners' needs and interests towards ESL speaking skills. Findings of this study revealed that using 21st century skills allow the lecturers to be more innovative and more creative in their teaching. The impact of this study can be beneficial for both lecturers and learners. The outcomes of this study indicated that TVET learners



significantly enhanced their ESL speaking skills and reduced their communication apprehension. It was recommended that technical educational programmes should provide the TVET learners with important skills needed in 21st century and improve TVET learners' mastery of English speaking in ESL classroom.

Keywords: TVET, Technique, ESL Speaking Skills & 21st Century

ED023: Keberkesanan Penggunaan *Foldable Computer Casing* bagi Modul SSK3033 - Baikpulih dan Penyelenggaraan Komputer di Kolej Komuniti Cawangan Maran

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Kajian ini dijalankan bertujuan untuk melihat keberkesanan penggunaan produk inovasi *Foldable Computer Casing* bagi Modul SSK3033 – Baikpulih dan Penyelenggaraan Komputer di Kolej Komuniti Cawangan Maran. *Foldable Computer Casing* merupakan rekacipta pengubahsuaian *casing* komputer yang membolehkannya dilipat dan dipasang dengan mudah supaya pelajar mempunyai ruang yang selesa semasa proses pemasangan dan baikpulih komputer. Pelajar yang terlibat dengan pengajaran dan pembelajaran (PdP) ini adalah daripada kalangan pelajar semester 3 sesi Jun 2019 bagi Program Sijil Sistem Komputer dan Rangkaian (SSK) di Kolej Komuniti Cawangan Maran. Sampel kajian dijalankan ke atas keseluruhan pelajar iaitu seramai 17 orang. Instrumen kajian adalah melalui borang soal selidik untuk menilai persepsi pelajar terhadap penggunaan *Foldable Computer Casing* iaitu dari aspek tahap keberkesanan produk terhadap pelajar, tahap kesesuaian produk dengan modul dan tahap keyakinan pelajar. Perisian aplikasi Microsoft Excel versi 2016 telah digunakan untuk menganalisis data dan dinyatakan secara deskriptif menggunakan kaedah kekerapan, peratusan dan min. Secara keseluruhan, hasil analisa kajian menunjukkan terdapat perbezaan ketara sebelum dan selepas penggunaan *Foldable Computer Casing* terhadap pelajar dalam PdP. Nilai min 3.07 sebelum dan diikuti nilai min 4.84 selepas penggunaan menunjukkan keberkesanan penggunaan produk inovasi terhadap Modul SSK3033. Justeru itu, dicadangkan agar skop kajian diperluaskan ke semua kolej komuniti yang menawarkan Program SSK bagi melihat hasil keberkesanan secara menyeluruh.

Kata Kunci: Computer Casing, Baikpulih Komputer & Kolej Komuniti



ED024: Kajian Keberkesanan Produk Inovasi *Multipurpose Foldable Drawing Desk 2.0* (Mfdd 2.0) dalam Kalangan Pelajar Sijil Multimedia Kreatif Pengiklanan.

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Kajian ini dihasilkan untuk melihat keberkesanan penggunaan *Multipurpose Foldable Drawing Desk 2.0* (MFDD 2.0) yang dibangunkan terhadap pelajar-pelajar Sijil Multimedia Kreatif Pengiklanan (SMP) di Kolej Komuniti Paya Besar. Pelajar-pelajar menghadapi masalah ketika melukis apabila sesi pembelajaran diadakan di luar bilik kuliah. Secara keseluruhannya, kajian ini melihat keberkesanan MFDD 2.0 dalam tiga aspek iaitu keselesaan penggunaan produk, mempercepatkan proses kerja dan fleksibiliti produk (mudah dibawa). Pelajar yang terlibat dalam kajian ini terdiri daripada pelajar SMP iaitu seramai 46 orang. Instrumen kajian adalah melalui borang maklumbalas untuk menilai persepsi pelajar terhadap penggunaan MFDD 2.0. Kajian ini menggunakan analisa deskriptif. Secara keseluruhan, dapatan kajian menunjukkan bahawa produk ini dapat membantu pelajar dalam memudahkan proses melukis di luar bilik kuliah dan mempercepatkan proses menepak. Dapatan kajian menunjukkan 97.7% pelajar menyatakan produk ini selesa digunakan dan 100% pelajar menyatakan proses kerja dapat dilakukan dengan lebih cepat. Bagi keputusan fleksibiliti, 43.2% pelajar menyatakan produk ini mudah dibawa manakala yang selebihnya menyatakan produk ini tidak fleksibel kerana produk ini berat dan besar. Justeru itu, diharap agar produk inovasi ini dapat diaplikasikan pada semua pelajar SMP khususnya dan orang awam umumnya setelah penambahbaikan dibuat hasil daripada maklumbalas kajian.

Kata Kunci: Drawing Desk, Inovasi, Melukis & Menepak (Tracing)

ED025: Kajian Keperluan Pembangunan Sistem Maklumat Pelajar Tangguh dan Berhenti (e-TB) Kolej Komuniti Paya Besar

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Institusi Pendidikan Malaysia sedang bergerak maju seiring dengan perkembangan teknologi dan digital bagi memenuhi keperluan dan kehendak semasa industri. Kajian keperluan bagi membangunkan Sistem Maklumat Pelajar Tangguh dan Berhenti (e-TB) ini di buat bagi menyokong kepada Pelan Pembangunan Pendidikan Malaysia 2013-2025 iaitu salah satunya adalah untuk meningkatkan tadbir urus dan kecemerlangan dalam organisasi dengan menggunakan sistem dan teknologi. Pihak pengurusan dan akademik Kolej Komuniti Paya Besar (KKPB) perlu sentiasa bersedia dalam menyediakan data dan maklumat berkaitan pelajar bagi memenuhi keperluan segala pihak berkaitan. Seiring



dengan keperluan semasa, kajian keperluan ini dibuat untuk melihat tahap keperluan maklumat pelajar tangguh dan berhenti di KKPB dikalangan pengurusan dan akademik. Hasil dapatan data diperolehi melalui borang soal selidik dan telah diedarkan dikalangan pensyarah di KKPB. Bilangan responden yang terlibat di dalam kajian ini adalah seramai 40 orang. Data telah dianalisa secara kuantitatif dan dapatan kajian menunjukkan bahawa keseluruhan responden menyokong pembangunan Sistem Maklumat Pelajar Tangguh Dan Berhenti (e-TB).

Kata Kunci: Sistem Maklumat Pelajar, Kolej Komuniti & Institusi Pendidikan Malaysia

ED026: Kajian Bekalan Air Mempengaruhi Emosi dan Sahsiah Pelajar di Kolej Komuniti Paya Besar

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Keputusan akademik yang baik menjadi penanda aras kepada prestasi Pembelajaran dan Pengajaran (PdP) pelajar semasa melanjutkan pengajian mereka pada setiap sesi pengajian. Kejayaan pelajar dalam bidang akademik banyak disokong oleh pelbagai faktor sokongan persekitaran yang baik terutamanya fasiliti kolej. Kajian ini bertujuan meninjau faktor-faktor yang mempengaruhi emosi dan sahsiah pelajar dalam bidang akademik terutamanya kemudahan bekalan air di setiap fasiliti yang menyediakan bekalan air di Kolej Komuniti Paya Besar selain membuat kajian terhadap perkhidmatan yang turut diberikan oleh PAIP Pahang. Tambahan pula, kajian ini dijalankan bagi mendapatkan pandangan responden terhadap tahap kemudahan bekalan dan perkhidmatan air di Kolej Komuniti Paya Besar untuk tujuan mengenal pasti, memastikan dan melakukan penambahbaikan terhadap sistem pembangunan kolej yang sedia ada. Objektif kajian ini dilaksanakan juga adalah untuk mengenal pasti faktor-faktor yang mempengaruhi emosi serta sahsiah pelajar terhadap prestasi dan kemudahan bekalan air yang disediakan di kolej bagi membantu persekitaran kolej yang kondusif dan efisien amnya kepada para pelajar di Kolej Komuniti Paya Besar. Kajian ini dilaksana dengan menggunakan instrumen soal selidik di mana skop responden kajian adalah pelajar-pelajar di Kolej Komuniti Paya Besar. Setelah maklumbalas berkaitan soal selidik diperolehi, data-data ini akan di analisis dengan menggunakan perisian *SPSS (Statistical Package for Social Science)* versi 21.0 dengan mendapatkan keputusan berkaitan faktor-faktor yang mempengaruhi emosi dan sahsiah para pelajar terhadap gangguan bekalan air di Kolej Komuniti. Analisis kajian yang diperolehi daripada sampel menunjukkan emosi dan sahsiah pelajar paling tinggi dipengaruhi oleh kecekapan bekalan gangguan air yang boleh diakses dengan baik oleh pelajar apabila kesukaran pelajar untuk mendapatkan akses bekalan air dengan banyak, mudah dan selesa (min = 4.45). Hasil kajian mendapati antara faktor emosi dan sahsiah pelajar di Kolej Komuniti boleh dipengaruhi dan disokong dengan kemudahan bekalan air yang efisien di samping faktor lain seperti kecekapan menguruskan bekalan air dan



kelancaran mengendalikan aduan berkaitan gangguan bekalan air di Kolej Komuniti Paya Besar. Dapatan kajian ini berguna untuk pihak pengurusan kolej dan unit pembangunan kolej mengatur strategi kerja pengendalian fasiliti dan kemudahan kolej dengan lebih terurus serta sentiasa mempunyai peningkatan menyelesaikan masalah ketiadaan air yang semakin meruncing di Kolej Komuniti Paya Besar memandangkan persekitaran kondusif yang menyokong emosi dan sahsiah pelajar selain menjadi batu lonjakan bagi pelajar selesa belajar sekaligus membolehkan pelajar mencapai keputusan yang memberangsangkan dan cemerlang.

Kata Kunci: Bekalan Air, Emosi, Sahsiah, Pelajar & Kolej Komuniti Paya Besar

ED027: Mengenalpasti Tahap Penguasaan dan Penggunaan Bahasa Inggeris dalam Kalangan Pelajar Sijil Teknologi Elektrik dan Sijil Multimedia Pengiklanan, Kolej Komuniti Paya Besar

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Kajian ini berfokuskan untuk mengenalpasti tahap penguasaan dan penggunaan Bahasa Inggeris dalam kalangan pelajar program Sijil Teknologi Elektrik (SKE) dan Sijil Multimedia Pengiklanan (SMP) Kolej Komuniti Paya Besar. Kajian dijalankan menggunakan kaedah kuantitatif melalui borang kaji selidik bagi proses pengumpulan data. Kajian ini juga mengkaji kaitan penggunaan bahasa Inggeris seharian terhadap penguasaan para pelajar terhadap bahasa tersebut. Sample terdiri daripada 50 orang pelajar yang terdiri daripada 25 orang pelajar program SKE dan 25 orang pelajar SMP. Walaupun kebanyakan pelajar tidak dapat menguasai kemahiran berkomunikasi dari segi lisan dan bertulis dalam bahasa Inggeris. Namun, mereka tidak menghadapi masalah untuk membuat rujukan, menerima arahan dan mengendalikan peralatan yang menggunakan arahan dalam Bahasa Inggeris, menikmati hiburan seperti lagu, filem, animasi, dan sebagainya. Mereka sering merujuk kamus dan bersikap positif untuk meningkatkan kemahiran berkenaan serta bersedia mengikuti kursus-kursus berkaitan sekiranya diberi peluang. Pada keseluruhannya, tahap penguasaan adalah sederhana tetapi penggunaan Bahasa Inggeris adalah rendah.

Kata Kunci: SKE, SMP & CEFR



ED028: Kajian Keperluan Aplikasi Pembelajaran 4.0 dalam Kursus Multimedia Kreatif Pengiklanan

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Revolusi Industri 4.0 telah membawa perubahan yang besar di dalam kehidupan manusia. Dengan mengintegrasikan teknologi digital ke dalam pelbagai sektor, ia turut mempengaruhi sektor pendidikan di Malaysia. Oleh sebab itu, Pembelajaran 4.0 diperkenalkan. Kajian ini bertujuan untuk mengenal pasti keperluan aplikasi Pembelajaran 4.0 dalam kursus Sijil Multimedia Kreatif dan Pengiklanan (SMP) di Kolej Komuniti Paya Besar. Sampel kajian dilakukan ke atas pelajar kursus SMP Semester 1 dan 2 seramai 40 orang yang terdiri daripada golongan generasi Z. Instrumen kajian menggunakan set soal selidik yang diberikan kepada pelajar untuk mengetahui minat pelajar terhadap pendekatan pengajaran dan pembelajaran secara online sebelum, semasa dan selepas waktu kuliah. Berdasarkan hasil kajian, didapati bahawa pelajar amat berminat dengan pendekatan Pembelajaran 4.0. Secara keseluruhan, kecenderungan pelajar terhadap pembelajaran secara maya membuktikan aplikasi pembelajaran secara online lebih menarik, tidak membosankan dan sesuai bagi bidang multimedia dan pengiklanan yang tertumpu kepada pembelajaran secara audio dan visual. Diharapkan daripada hasil kajian ini dapat memberi panduan kepada tenaga pengajar bagi meningkatkan keberkesanan proses pengajaran dan pembelajaran kursus Multimedia Kreatif dan Pengiklanan di Kolej Komuniti Paya Besar selari dengan visi Revolusi Industri 4.0.

Kata Kunci: Aplikasi Pembelajaran, Revolusi Industri 4.0, Pembelajaran 4.0 & Generasi Z

ED029: Augmented Reality System as an Interactive Methods for TVET Education

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Currently, teaching, learning and training for new students, users or engineers especially for Technical and vocational education training (TVET) is very important for various education sectors and industries. However, teaching, learning and training those users to efficiently perform new knowledge and skills has become challenging. Hence, the innovation of an alternative teaching, learning and training methods is required, that are able to import and producing advanced skills and knowledge into real working practices. Therefore, the alternative method like Augmented Reality (AR) system is the best practices in solving those problems. The delivery method is aligning with the challenges in integrating technologies to expedite the march towards industrial revolution 4.0.



Furthermore, this method capable and also can support with the holistic approach to cater to 21st century teaching and learning system activities.

Keywords: Teaching, Learning and Training, Augmented Reality (AR) System, Skill, Knowledge & TVET

ED030: The Effectiveness of Using Journey Map as a New Teaching and Learning Tools for Business Ethics

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Engaging students in the learning process is a challenge for educators. As a result educators are now seeking for new methodologies to respond to the demand for personal education and knowledge acquisition. Journey map is one of a powerful teaching and learning technique which provides these educators with new methods that are suitable to be implemented at all educational levels in many institutions worldwide. A journey map design for this course is a visualization of a few journeys that a student goes through in order to accomplish a learning outcomes. In its most basic form, journey map starts by compiling a series of student actions into a timeline. Next, the timeline is fleshed out with students thoughts and emotions in order to create a narrative. The objective of the research was to identify the impact of using journey map for business ethics course among semester four Diploma in Business Studies student at Politeknik Merlimau. A five point likert scale questionnaire was distributed to 31 respondents. The research focus on two aspect which are teaching aspect and student's perception about journey map usage. The results of the study show's that the average mean score analysis is 4.41. For teaching aspect mean score analysis was 4.43 follow by 4.38 for student's perception about journey map usage. The results show that respondents have a positive perception and impact towards the lecturer implementation of journey map approach as teaching and learning tools. The using of journey map approach can help students to easily remember everything the lecturers teach, increase the motivation in learning process, easy to learn, attractive and entertaining. In addition students also agreed that by using journey map can help students to understand the content of business ethics course, enhanced creativity and collaborative learning, assisted to manage study time, achieved good result in examination and enjoyed using journey map for business ethics course. The highest mean score is 5.00 which element is journey map can easily remember everything the lecturer teach and followed by 4.90 for element easily understand the content of business ethic course. The results of this research are expected to serve as a guideline and motivator for lecturers to create and innovate existing teaching techniques and approach in order to have an interesting teaching and learning environment for student advantage. This is also in line with the goals of the Malaysian Education Development Plan (Higher Education) 2015-2025 to produce



holistic, entrepreneurial and balanced graduates in line with the Fourth Industrial Revolution that Politeknik need to apply.

Keywords: Politeknik Merlimau, the Effectiveness, Journey Map, New Teaching Approach & Business Ethics

ED031: Pembangunan Pemampat Kit Pneumatik sebagai Alat Bantu Mengajar (ABM) untuk Kursus Kejuruteraan Loji dan Pneumatik di Jabatan Kejuruteraan Mekanikal Politeknik Merlimau

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Pembangunan pemampat kit pneumatik ini adalah bertujuan membantu proses pelaksanaan pengajaran dan pembelajaran (P&P) untuk kursus DJJ6182-Teknologi Kejuruteraan Loji dan DJJ5123-Pneumatik & Hidraulik. Pembangunan produk Inovasi dihasilkan sebagai alat bantu mengajar untuk membantu peajar memahami topik sistem udara termampat dan sistem pneumatik dalam bilik kuliah dengan lebih mudah. Pembangunan pemampat kit pneumatik menggunakan kira-kira 90% bahan kitar semula. Komponen utama diperolehi daripada kompresor peti sejuk yang dikitar semula untuk digunakan sebagai pemampat udara dan tangki simpanan utama dari tangki isian semula peti sejuk R134a kenderaan. Pemampat Kit Pneumatik ini boleh menghasilkan tekanan maksima sehingga 10 bar (Kpa) dan Kit pemampat udara ini juga dibekalkan dengan aksesori-aksesori tambahan untuk memudahkan aktiviti dalam makmal dan bengkel untuk tujuan pengajaran dan pembelajaran (P&P). Seramai 60 orang pelajar program diploma kejuruteraan mekanikal semester 4 yang terdiri dari kursus DKM4A, DKM4B dan DKM4C sesi Jun 2019 dipilih sebagai responden kajian. Perlaksanaan kajian adalah menggunakan kaedah tinjauan berbentuk kuantitatif dengan menyediakan borang soalselidik yang mengandungi soalan-soalan berstruktur. Data-data yang dikumpulkan pula dianalisis secara sistematik dengan menggunakan perisian *Statistical Package for Social Science (SPSS)* untuk menghasilkan dapatan kajian. Hasil maklumbalas responden kajian terhadap pembangunan pemampat kit pneumatik amatlah positif dengan menunjukkan skor min terhadap ciri-ciri rekabentuk pemampat kit pneumatik adalah tinggi dengan nilai purata skor min 4.38 dan tahap kefahaman pelajar dalam pengajaran dan pembelajaran mempunyai nilai purata skor min 4.58.

Kata Kunci: Pemampat Kit Pneumatik & Alat Bantu Mengajar (ABM).



ED032: TBEm4U Bagi Takaful Basic Examination (TBE)

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Pelajar di Institusi Pengajian Tinggi Malaysia ketika ini adalah tergolong daripada generasi Z atau '*Digital Natives*' yang akan mencorakkan halatuju tuju kejayaan e-Pembelajaran yang diperkenalkan di setiap institusi pengajian masing-masing. Kajian literatur berpendapat bahawa Pengajaran dan Pembelajaran (P&P) yang menggunakan Multimedia dipercayai mampu merangsang pembelajaran dan meningkatkan tahap pencapaian akademik pelajar. Penerimaan e-Pembelajaran bukan sahaja mampu menukarkan modul tradisional, kos program dan bilik darjah dalam bentuk versi atas talian, bahkan penggunaan teknologi boleh menyumbang kepada persekitaran P&P yang sangat fleksibel. Pembelajaran mudah alih ini adalah pendekatan pembelajaran yang menentukan penguasaan pengetahuan dan kemahiran pembelajaran melalui teknologi mudah alih. Proses pembangunkan kandungan aplikasi TBEm4U ini adalah berasaskan Laman Web *Appy Pie*. Prototaip aplikasi yang tersebut dipakejkan dalam bentuk aplikasi *Android* bagi membolehkan P&P kursus *Takaful Basic Examination* (TBE) ini terlaksana. Oleh itu, kajian ini melihat potensi perlaksanaan reka bentuk dan pembangunan aplikasi TBEm4U bagi kursus TBE ini akan mewujudkan pengalaman P&P yang lebih menarik. Tujuan kajian adalah untuk mengkaji perbandingan pengajaran yang berkonsepkan tradisional sebelum ini keatas pencapaian peperiksaan pelajar Semester 5 di lima buah Politeknik Malaysia yang menawarkan program Diploma Kewangan dan Pebankan Islam iaitu di Politeknik Premier Ungku Omar, Politeknik Seberang Perai, Politeknik Sultan Idris Shah, Politeknik Nilai dan Politeknik Metro Johor Bahru yang melibatkan 108 pelajar. Borang soal selidik yang terdiri daripada 30 item terhadap penerimaan aplikasi TBEm4U ini digunakan sebagai instrumen. Data dianalisis dengan menggunakan SPSS versi 22.0 bagi mendapatkan nilai min. Dapatan kajian menunjukkan tahap kesediaan pelajar, tahap kesesuaian dan tahap penerimaan pembelajaran mudah alih. Berdasarkan kepada dapatan yang diperolehi, beberapa cadangan telah dikemukakan bagi merealisasikan pembelajaran mudah alih di Politeknik Malaysia.

Kata Kunci: Takaful Basic Examination, e-Pembelajaran & Work Based Learning

ED033: Penerimaan Pelajar Automotif Terhadap Implementasi Pengajaran Berintegrasikan Augmented Reality (AR) di Kolej Komuniti

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Augmented reality (AR) is a growing new technology. Therefore, this study was conducted to identify the Community College Automotive students' acceptance of the use of Augmented Reality Car Checking (ARCCEK) during practical teaching. This study is based



on the technology acceptance model known as the Technology Acceptance Model (TAM) to assess students' perceptions of two factors: usefulness and ease of use. The sample consisted of a group of Semester 2 students at the Kelana Jaya Community College who had undergone a vehicle engine training in the previous semester. The study methodology was quantitatively using questionnaire instruments. The findings indicate positive acceptance among students despite some technical problems identified during the study. These findings indirectly help provide basic information for educators in planning the use of AR in teaching and learning.

Keywords: Technology Acceptance Model & Augmented Reality

ED034: Innovation Capability at TVET Institutions, Role of Polytechnics in Malaysia

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This research is aimed to examine the role of internal and external factors of Intellectual Capital in enhancing Academicians' Innovation Capability at Polytechnics in Malaysia. This study was conducted based on the Quantitative survey which includes 203 respondents from various polytechnics in Malaysia. The analysis and results of the research revealed a significant positive relationship between intellectual capital and innovation capability among the academicians at Polytechnics in Malaysian. Besides, all elements of internal and external factors of intellectual capital have significant positive impact on innovation capability among at Polytechnic Malaysia. Thus, this study indicates the importance of both external and internal factors of intellectual capital in order to enhance the innovation capability among academicians at Polytechnic Malaysia.

Keywords: Intellectual Capital, Innovation Capability, Internal and External Factor & Polytechnic Malaysia.

ED035: A Proposed Framework in Identifying Skills Set in CDIO Implementation for Diploma Retail Management (DRM) Programme in Polytechnic Malaysia

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This conceptual paper aims to identify the skills set needed by the industry and comply with the Malaysian Qualification Framework (MQF) for Diploma level in higher institution. This paper also present the skills need which will recommend for further study in



implementing CDIO in Commerce Department. Data gathered from all the player in retail industries. The collection data based on interview session, dialogue between academia and industries and advisory report in related area. Based on the study, the skills set mapping between the industries and MQF Clusters are identified which are practical work skills, Leadership, Autonomy and Responsibility, Personal and Entrepreneurial Skills and Ethics and Professionalism skills are chosen. All the skills set which identified can be used for curriculum quality improvement (CQI), equip all retailing students with the skills needed by the industry and the same time can improved the graduate employability in future.

Keywords: Skills Set, MQA Learning Domain & Industries Feedback



Category B (Engineering Science)



ES001: Effect of Welding Heat Input on the Corrosion Rate of Carbon Steel MMA Welding

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Steel is one of materials which often used on steel construction, bridge construction, and high rise building construction. Construction using welding joint is expected able to withstand construction loads for a long time. After a while weldment will be exposed to corrosion that will be construction failure in turn. One of the most important parameter in welding is heat input, however it hasn't obtain correlation between heat input and corrosion rate on MMA (Manual Metal Arch) weldment on mild steel. This paper aims to obtain correlation between heat input and corrosion rate of low carbon steel with MMA welding. The result was show that corrosion rate tend to decrease with adding of duration, where higher corrosion rate at heat input 0,8108 kJ/mm was 68,68 gm/m² hr at duration 5 hours,

Keywords: Welding Current, Corrosion Rate, MMA Welding & Low Carbon Steel

ES002: The Implementation of Solar Power System Using Capacity of 1300 VA

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Utilization of solar cells for household electricity is an alternative for electricity and government customers in overcoming the problem of electricity crisis, the use of solar cells by the community is still very matters relating to the community and sellers of solar cells do not have the correct reference about solar cell systems, So its use is often not necessary with careful planning and ultimately the solar cells that have been purchased are not used. This study discusses the needs of solar cell systems for 1300 VA household electricity needs and looks for investment costs and savings made using PLN electricity. This research is expected to provide a scientific review within a framework that can be compared with the PLN electricity supply. Thus, many consumers who use electricity, this is designing, then the electricity provider, PLN will significantly provide savings in fuel oil, gas and coal so that people will be far away from the difficulty of repairing electricity. Specific research targets are making solar cell systems for 1300VA household electricity and knowing investment costs and savings as well as accurate references and information from the technical field and solar cells in the needs of household electric power systems. The research method uses research methods to explain and analyze the cost of solar cell systems for household electricity costs of 1300VA to obtain the results of a careful analysis and get a good design that is designed. The equipment used was Solar Cells, Battery



Recharging Regulators, inverters, household electrical load loads, Electric load gauges, temperature gauges and power lamps, battery systems and control panels.

Keywords: Solar Cells, Investment Costs, Electricity Costs & Savings.

ES003: Battery Protection System for More Loads Using Arduino

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The use of batteries for solar power plants (PLTS) must be protected against various things, one of which is the protection of the battery at a state under the normal battery voltage. The research of battery safety systems toward over loads aims to design a system using Arduino that protects a battery in a solar power plant from a state of voltage below the normal battery voltage at 19 volts from the normal battery voltage of 24 volts. The method used is an experimental method that is designing a power service system using Arduino to get good design results. The equipment used is solar panels, inverters, Arduino, voltage dividers as voltage sensors and batteries. The results showed that the application of battery safety against overloads using arduino on electrical systems using solar power plants was carried out for 4 hours and 13 minutes load service starting at 00:00:00 WIB in the morning until 04:13:00 WIB with loading an average of 120 watts. The battery voltage when loading at the beginning is 22.8 volts until the battery voltage continues to decrease, and at 04:07:00 WIB the Arduino system activates the buzzer, 6 minutes later at 04:13:00 WIB the Arduino system cuts the load automatically using relay on a 19 volt battery voltage.

Keywords: Solar Cells, Batteries, Power, Voltage & Arduino.

ES004: AC Breakdown Voltage Characteristic of Patchouli Oil by Using Various Electrodes

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Halimah Che Hassan & Salizahanim Leman

Isolation in the electric power system is useful for separating several electrical conductors with a voltage so that it does not cause electric jumps or sparks between conductors with voltage. Oil is a liquid insulating material that is widely used to cool low, medium and high voltage electrical components. Most of the oil insulators come from fossil or crude oil which is specially processed so that it has the properties of an insulator. The development of the world today demands a product that is environmentally clean and comfortable to reduce the effects of global warming. This situation opens up opportunities for the use of renewable energy materials sourced from vegetable oils. Testing the characteristics of AC



breakdown voltage made from patchouli oil liquid insulation with various electrodes aims to study the strength of its insulation against the breakdown voltage with variations in secondary current and the distance between and the shape of the electrode. Tests are carried out using ball-shaped electrodes, rods, needles and half-spheres with changes in conductor intervals of 1.5 cm, 2 cm and 2.5 cm and the transformer secondary current (I_s) of 14 mA and 18 mA. From the results of this alternating breakdown voltage test, it can be seen whether patchouli oil is suitable as an alternative to liquid insulation in the transformer.

Keywords: AC Breakdown Voltage Characteristic, Electrodes & Patchouli Oil.

ES005: The Study of AC Breakdown Voltage by Varying Transformer Secondary Currents and Use of Half Ball Electrode

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Marlon Tua Pangihutan Sibarani & Salizahanim Leman

A transformer is a static electricity component that converts AC voltages and currents with the same or different values at the same frequency through a magnetic coupling and is based on the principle of electromagnetic induction. Transformer in general is a core made of layers of iron elements consisting of secondary coils and primary coils. Transformer needs isolation to separate several electrical conductors with a voltage so that it does not cause electric jumps or sparks between conductors with voltage. In this paper, the study of AC breakdown voltage by using half ball electrode aims to study the strength of its insulation against the breakdown voltage with variations in transformer secondary currents and the distance between and the half ball shape of the electrode. The result tests are carried out using half ball electrode with changes in conductor intervals of 1.5 cm, 2 cm and 2.5 cm and the transformer secondary currents (I_s) of 12 mA and 16 mA.

Keywords: AC Breakdown Voltage, Transformer Secondary Currents & *Half Ball Electrode*

ES008: Quality and Reliability Analysis of Medan State Polytechnic Machine Lathe Machines through Static Geometric Test According to ISO 1708 Standard

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The purpose of this study was to determine the condition and accuracy of the lathe through static geometric tests according to ISO-1708 standards. The tests include measuring the level of the machine base, sloping straightness towards the horizontal plane, alignment of the motion of the loose head in the horizontal and vertical planes, accuracy of the main axis,



alignment of the supporting shaft launchers to the movement of the nose spindle deviation, alignment of the nose spindles and alignment of the main axis in horizontal and vertical directions. Measuring the quality and reliability of the machine to find out how much accuracy deviations that occur in the main part of the lathe. Quality measurements using a precise measuring instrument that is the spirit level, dial indicator, micrometer and supporting flashlight and mandrel shaft. The results achieved from this study indicate that the condition of the engine and the quality of the maximat V13 lathe and the Celtic I4 Indonesia lathe at the Medan State Polytechnic Machine workshop has decreased. Only 50% of machines can still be operated. The components contained in each engine have been damaged and incomplete. From the number of 7 units of Maximat V13 lathe in the engine workshop, the engine condition is not optimal, only 3 units of the machine can still operate and its reliability has decreased. The results of the inspection of the main parts of the engine components such as the fixed head, speed control lever, speed control lever, screw movement control lever, engine base and longitudinal slides are still good but the other component parts are damaged and incomplete. Of the 6 existing Celtic 14 lathes, 3 machines are still operational and the engine components are complete, while 3 other machines have been damaged and incomplete as the maximat V3 lathe. With the current condition of the machine, of course the products of the machining process will affect the quality and time of the machining process performance experience obstacles and are not optimal either for student practicums or for producing products.

Key words: Testing, Measurement, Lathe, Condition, Reliability & Product Quality.

ES009: Solar Generating Power for Domestic Use

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Noor Azlina Ahmad, Md Zin Hassan, Hasanah Md Amin & Suprianto

Electricity generation from solar energy is an alternative renewable energy in over coming the electricity crisis. Furthermore, this solar energy can be utilized in order to support Indonesian Government program to targeted electricity generation by 23 percent or 16, 714 MW by 2025. Solar Energy is one of the most potential as an energy sources that been produced by the sunlight and eco-friendly. In addition, its application will reduce the greenhouse gas emission. Photovoltaic (PV) is the most direct way to convert a solar radiation into electricity. A good efficiency of PV will depend on irradiation and temperature. For this matter, units Photovoltaic (PV) Module will assembly together with solar charge controller, battery VRLA and inverter. In short, it is found that the proposed assembly can generate the electricity for household load of 1300 VA. In this research, we have reviewed and discussed essential future trends, PV panel performance and aspects for Solar Energy applications which are expected for subsequent contribution in residential.

Keywords: Renewable Energy, Solar Energy, Photovoltaic & Application



ES010: Development of Portable Electronic Sensor Trainer (PEST) for Teaching and Learning Purpose

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Portable Electronic Sensor Trainer (PEST) is a training kit for teaching and learning. PEST comes with the breadboard, relay, solenoid, LCD, Arduino Nano and other electronic components. The purpose of the PEST was created to assist lecturers and students especially during their practical work on the subject of Industrial Electronics. PEST was developed starting with problem statement, idea exploration and then design using Inventor. An inventor is a software that can be used to produce 2D and 3D views. Also, it can be drawn in orthographic drawings complete with dimensions. Once the design drawing is complete, Arduino programming begins with 15 different sensors to allow students to learn the functions and connections of each sensor. PEST also comes with a QR code where students can access the lab sheet as well as the circuit connections. In addition, PEST also uses HP Reveal as a medium that allows students to understand the demonstrations carried out by the lecturers by simply scanning the sensor images and video of the connecting circuit that will be displayed on the smartphone. This PEST development involves the process of etching, drilling, soldering and component assembly. The results obtained are in terms of circuit connectivity and output of each sensor.

Keyword: Arduino, Sensors, QR Code, Inventor & HP Reveal.

ES011: Kajian Keselamatan Pengguna Faktor Kebisingan dan Pencahayaan di Bengkel Mesin

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Faktor-faktor persekitaran seperti bunyi dan cahaya memainkan peranan penting dalam mempengaruhi prestasi kerja serta mampu memberikan kesan terhadap keselamatan dan kesihatan pengguna. Kajian ini bertujuan untuk menilai tahap keselamatan pengguna terhadap faktor bunyi dan cahaya di Bengkel Mesin, Jabatan Kejuruteraan Mekanikal Politeknik Ungku Omar, Ipoh. Kaedah pengukuran data menggunakan peralatan *Thermal Comfort Multistation* (TCM) telah digunakan untuk mendapatkan maklumat dan data yang diperlukan. Maklumat awal faktor persekitaran dan kajian-kajian terdahulu yang berkaitan dikumpulkan bagi membantu dalam proses menjalankan kajian dan meramalkan hasil kajian. Melalui hasil kajian yang telah dijalankan, nilai min purata yang diperolehi melalui pengukuran data adalah 247.05lux untuk faktor cahaya dan 62.92dBA untuk faktor bunyi di sepanjang tempoh empat hari nilai pengukuran data diambil. Kajian ini dapat membantu membangunkan satu persekitaran kerja yang selamat dan selesa untuk pengguna dan



secara tidak langsung dapat membantu meningkatkan tahap keselamatan dan kesihatan pengguna mengikut ketetapan piawaian yang telah ditetapkan.

Kata kunci: Keselamatan, Kesihatan, Bunyi & Cahaya,

ES012: Kajian Tahap Keselamatan Komponen (Reliability) pada Dandang Stim

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Setiap loji kuasa stim mempunyai masalah dalam pengoperasian terutama masalah berkaitan keboleharapan komponen-komponen pada sistem dandang. Masalah-masalah ini boleh terjadi akibat daripada kecuaian operator dan penyelenggaraan yang kurang baik. Tujuan kajian ini dijalankan adalah untuk mengukur tahap keselamatan (*reliability*) komponen-komponen pada dandang. Bagi kajian penyelidikan ini ianya tertumpu kepada dandang stim sahaja, dikaji dan dianalisis di Makmal Loji Kejuruteraan Mekanikal di Politeknik Ungku Omar, Ipoh. Kemudian, penilaian risiko terhadap kegagalan perkakasan dijalankan menggunakan kaedah kebarangkalian *Events tree* dan *Fault tree* untuk meramal jangka hayat dandang dan memastikan sistem sentiasa berada dalam keadaan selamat. Perisian Microsoft Excel dan perisian *Reliasoft BlockSim 7* telah digunakan untuk kaedah pengiraan dan penilaian bagi sistem ini. Daripada hasil kajian ke atas komponen-komponen dandang didapati injap keselamatan mempunyai keboleharapan, 97.8%, tolok tekanan, kaca tolok, 65.7%, kaca tolok, 18.3% dan peranti hentian paras air rendah adalah 32.0% serta keseluruhan bagi keboleharapan dandang pula adalah 86.6%. Akhir sekali, kebarangkalian komponen keselamatan dan penyelenggaraan pada dandang dapat dipertingkatkan bagi mengurangkan kegagalan pada sistem.

Kata kunci: Jangka Hayat, Kebarangkalian, Keboleharapan, Keselamatan & Dandang.

ES013: Development of Specific Heat Arduino Kit

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Pembangunan alat bantu mengajar dapat membantu proses pengajaran dan pembelajaran berlaku dengan lebih jelas, menarik dan berkesan. Kit Arduino Haba Tentu ini dibangunkan dengan tujuan untuk memastikan amali bagi mengukur haba tentu sesuatu bahan dapat dijalankan dengan lebih jelas dan tepat. Sasaran penggunaan kit arduino ini adalah khusus untuk pelajar semester dua bagi Program Diploma Kejuruteraan Mekanikal (DKM) dan Program Diploma Kejuruteraan Pembuatan (DTP) di Jabatan Kejuruteraan Mekanikal,



Politeknik Tuanku Sultanah Bahiyah yang mengambil kursus DJJ20063 Termodinamik. Kit ini direkabentuk dengan menggunakan sistem Arduino Uno yang menggunakan pendekatan kalorimeter dan *Black Principle Heat*. Diharapkan dengan adanya kit ini dapat membantu pensyarah dalam proses pelaksanaan amali bagi kursus Termodinamik (DJJ20063) sekaligus membantu pelajar dalam menjalankan amali ini. Dengan kaedah ini, pelajar dapat menjalankan amali secara *hands-on* yang dapat membantu serta melatih para pelajar untuk mengenali, mengaplikasi serta meningkatkan kemahiran saintifik secara langsung dengan lebih teratur dan sistematik.

Kata Kunci: Kit Arduino, Termodinamik & Haba Tentu

ES015: Quasi-Static Response of Bolted Joints in Road Safety Barriers under Out-Of-Plane Loadings

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Road safety barriers have been developed over the years in purpose to restrain errant vehicles when they accidentally swerved from the road. These structures provide physical restriction in a way that reduces the risk and danger to vehicle passengers and other traffic. In order to preserve the purpose of the road safety barriers, it should be resistive towards impact damage with respect to the direction of the traffic flow. One of the important elements in the structure is the bolted joints where the two W-beams are connected. This research paper describes an experimental investigation into the quasi-static response of bolted joints in road safety barriers under out-of-plane loadings. A total of 12 simplified scales of road safety barriers are identified. Three-point bending test will be applied to fulfill the primary aim of the investigation; to evaluate the behavior of the bolted joints when out-of-plane loadings act on various configurations. The bolted area is varied by having different center-to-center distance between two consecutive bolts and changing the number of bolts, where both works in line and in row arrangement. Finally, the outcomes of the tests are tabulated in the report, giving the value of maximum Von-Mises stress. Meanwhile graphs detailing the behavior of each specimen are also illustrated. Strain gauges utilized in this research is to explain the stress concentration at critical points which will result in maximum stress developed at that particular point. In conclusion, the best bolt configuration is finalized to see as an improvement on the road safety barriers.

Keywords: Road Safety Barrier, Bolted Joints, Bending & Stress



ES016: Development of An Auto Cupping Machine by using Arduino Nano Controller

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Auto Cupping Machine is a project machine that had been develop from traditional way of therapy to a modern way of cupping therapy. In the traditional way, cupping therapist use cup, bamboo or horn to do the air suction process. The process before are basically use an environment method to do so such as by using heat method, the therapy will light up some fire inside on the cup and put up on the patient skin to process a vacuum suction. After that, the therapist also use a bottle spray or some cloth like towel or cotton to wipe out the anti-septic liquid on the patient skin. Besides, to make some scar on the skin, the therapists mainly use a blood lancet needle pen or diabetes pen to make it happen and count it as much as it must. But somehow, in this modern area, the ways of process before need to be done to suit up along with the years. This project which is known as Auto Cupping Machine is an innovation of a modern cupping machine which using high technology component. This project is controlled by an Arduino Nano controller which conducts the timing of the cupping process. There are three mainly motor which are vacuum pump, water pump and coil tattoo machine used to complete the cupping process. The vacuum pump is used to do air suction of the skin while the water pump use as a spray pump that contain anti-septic liquid inside from the container. On the other hand, the coil tattoo machine that combine with blood lancet needle pen are used to make a scar on the patient skin for letting blood to came out of it. This project is really a good innovation of alternative treatment for cupping process which can really reduce time of work, prevent skin illness and help reducing the manpower energy for a cupping therapy.

Keywords: Cupping, Antiseptic Liquid, Arduino Nano & Coil Tattoo Machine.

ES017: The Important of Handling Disaster Crisis

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Sarjianto, Benny B Nasution & Parman

Potential natural disasters in Indonesia ranging from floods, whirlwinds, landslides, volcanic eruptions, tsunamis, and earthquakes can occur across the Indonesian archipelago from Sabang to Merauke, causing a disaster crisis. With the level of disaster crisis and disaster vulnerability that is classified as high in Indonesia, it is important that people are always given education and training so that they are always alert to disaster crises, and have the resilience to face disasters. Preparedness in handling disaster crises includes many aspects, for example the introduction of potential disasters around, history of disasters that have occurred, forms of anticipation, raising awareness of signs of disasters,



the impact of disasters on individuals, families, and communities, ways of handling in disaster conditions , and how to save yourself from disaster.

Keywords: Disaster, Education, Anticipation & Awareness.



Category C (IT)



IT001: Transportation Management System (TMS) for Efficiency and Cost Effectively in Supply Chain Management

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Yulia Fatmi, Nor Haziah Hussin, Fardhila Syahira Salmi Nordin & Norshima Sha'ari

Logistics carrier fleet can consist of a fleet of ships that use ships, air fleets that use aircraft and land vehicles that use motor vehicles. This study discusses the application of the TMS to the land transportation logistics fleet. TMS serves to track the position of each vehicle, monitor each vehicle to stay in the lane/route that has been determined, estimate the arrival time of each vehicle so that loading and unloading can be prepared early. TMS devices consist of sensors that are installed in vehicles and servers. The server functions to store data sent by sensors and information providers in the form of website services. While the sensor serves to determine the location of points in the form of longitude, latitude and estimated vehicle speed at that time, which is then sent to the server using GPRS service. System testing uses an experimental method involving five motorized vehicles. The results obtained from testing are the position of each vehicle illustrated to a digital map that appears when accessed to the server, surveillance of each vehicle is recorded based on the plate number, date, time and from and to the location of transportation, while the arrival time of each vehicle is only an estimate displayed in hour and minute units. With supervision it was found that the average vehicle lane recorded for car 1 was 25 seconds car 2 was 15 seconds, car 3 was 18 seconds, car 4 was 23 seconds and car 5 was 30 seconds.

Keywords: Sensors, Server, Website, GPRS & Logistics

IT002: River Basin Management for a Better Life

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Benny B Nasution, Khairul, Faradiba Badrul Hisham, Zauyah Azman & Nur Adilla Kasim

High rainfall will result in increased water discharge in rivers, could flooding on downstream streams. The cause of flooding in addition to frequent rainfall is also due to the water discharge that passes through the river and the current speed of the river, which tends to cause flooding. In addition, upstream rivers tend to be less spacious forests also resulted in potential flood shipments from upstream of the river. The research aims to plan a prototype for flood disaster mitigation, by implementing water level sensors, a water flow speed sensor, and a water turbidity sensor, which is connected to Android, subsequent data processing by utilizing Information technology. With this prototype is expected to give input for the community to know the potential of the flood disaster independently, thereby reducing the impact for the community.



Keywords: River, Flood, Android, Sensor & Mitigation.

IT003: River Flood Management Based on Mobile and Web

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According to the geographical city of Medan, there are thirteen districts that are prone to flood, namely: Kecamatan Medan Johor, Medan Baru Sub-district, Medan Polonia subdistrict, Medan District Selayang, subdistrict Medan Maimun, Kecamatan West Medan, Kecamatan Medan Belawan, subdistrict Medan Sunggal, Medan Helvetia subdistrict, Medan Marelan subdistrict and Medan Petisah Sub-district. Starting from the above fact, it is important to study flood disaster mitigation in Medan city. To facilitate the mitigation process can be utilized the function of information technology. An important aspect that can be used as a research object is piles of garbage in trenches and rivers. Community participation is expected to detect garbage, by sending images of garbage piles in trenches and banks. The research aims to plan a prototype for flood disaster mitigation by utilizing information technology, especially with information related to garbage piles in trenches and river banks. With this prototype is expected to provide input for the Government of Medan to manage flood disaster mitigation, thereby reducing the impact of flooding for the community.

Keywords: River, Garbage, Flood, Mitigation & Mobile.

IT004: Analysis of Temperature and Humidity Control System in Oyster Mushroom Cultivation with DHT-11 Sensor Based on Raspberry PI

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The cultivation of several types of mushroom plants requires very stable weather in order to grow well. For example like the oyster mushroom plants. These plants only grow at temperatures of 26-30 °C and humidity of 80-90%. In this research, a microcontroller-based automatic temperature and humidity controller with a temperature and humidity sensor has been examined for its accuracy in detecting temperature and humidity. In making the system, Raspberry PI type microcontroller is used which is programmed to maintain and control the moisture in oyster mushroom plants. The DHT-11 Humidity Sensor is used to read room temperature and humidity levels. Sensor data is read by the microcontroller and compared to a certain extent. If the limit is exceeded the humidifier / fan / lamp will activate, the humidifier will be activated to spray water vapor into the air. In this way the humidity will rise. If the humidity exceeds the desired level, the system through the humidifier will decrease it automatically. As a measurement parameter in this



study MSE (Mean of Square Error) and R2 (R square) will be used by comparing the reading data on the DHT-11 humidity sensor with reference data obtained from the measurement of air humidity using a hygrometer humidity meter. From the results of this study it was found that the DHT-11 sensor reading produced an error of 1.01 for temperature readings and an error of 0.5 for humidity readings. This proves that the temperature set on the Raspberry Pi is between 28°C-33°C and the humidity is between 65% RH-82% RH according to the needs of oyster mushrooms. With an average temperature error of 1.01% and an average error of humidity of 0.5%.

Keywords: Humidity Sensor DHT-11, Oyster Mushroom Plants and MSE (Mean of Square Error) & R2 (Rsquare) Measurement Parameters.

IT005: Design of Disaster Victim Detection System and Its Location Point Using Arduino

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Muhammad Rusdi, Zumhari & Nik Nor Hishamuddin Nik Mustapha

In the aftermath of the disaster, the evacuation of survivors must be done quickly to minimize the number of deaths. SAR teams that search for victims often have difficulty in finding victims who can still be saved, especially victims who are buried or crushed by rubble. Based on these problems, researchers created an Arduino-based disaster victim detection tool and location point to assist the SAR Team in finding survivors that can still be saved to reduce the number of fatalities. In this study, Arduino functions as a microcontroller that controls sensors according to their respective functions, AMG 8833 sensors actively detect the presence of victims with infrared that can identify victims through body heat. If the sensor detects a victim, the buzzer will sound, and the LCD on the device will display a sign that the victim has detected and then the GSM SIM 800L Module will send an SMS coordinate point from the GPS 6MV2 where the device found the victim to the rescue team's cellphone. From the results of this study it was found that the ultrasonic sensor used in this study can provide accurate information about the distance of the detected victim with a maximum distance of 3,5 meters and accurateness level of the system is 93.86 %.

Keywords: Arduino, AMG8833 Sensor, Buzzer & Ultrasonic Sensor



IT006: Rancang Bangun Sistem Akreditasi Politeknik Negeri Medan

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Akreditasi adalah kegiatan penilaian kelayakan program dalam satuan pendidikan berdasarkan kriteria yang telah ditetapkan. Akreditasi Perguruan Tinggi (APT 3.0) dan Akreditasi Program Studi (APS 4.0) memberikan jaminan bahwa perguruan tinggi dan program studi yang terakreditasi telah memenuhi standar mutu yang ditetapkan BAN-PT (Badan Akreditasi Nasional -Perguruan Tinggi), sehingga mampu memberikan perlindungan bagi masyarakat dengan penyelenggaraan perguruan tinggi yang sehat. Politeknik Negeri Medan sentiasa mendorong setiap unit kerja untuk melakukan perbaikan dan mempertahankan mutu penyelenggaraan pendidikan yang tinggi. Sebagai hasilnya, saat ini dari 17 program studi, 1 mencapai Akreditasi A, 16 Akreditasi B, dan akreditasi institusi mencapai B. Untuk terus mempertahankan dan meningkatkan hasil APT dan APS, serta menjalankan proses yang lebih efisien dan efektif, maka dipandang perlu melaksanakan penelitian terkait mekanisme program penyusunan dokumen APT dan APS. Melalui penelitian ini kegiatan penyusunan APT dan APS diharapkan melalui sistem informasi yang terintegrasi, sehingga juga bisa dijadikan kekuatan dasar untuk mencapai peningkatan APT dan APS dari B menjadi Unggul pada tahun 2020 dan setelahnya. Pencapaian ini akan mendukung visi Politeknik Negeri Medan menjadi institusi pendidikan tinggi terkemuka nasional pada tahun 2020.

Kata Kunci: Akreditasi, Perguruan Tinggi, Sistem Informasi, Terintegrasi & Basis Data

IT007: A Study on Apriori Algorithm

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The goal and specific target of this research is to build an information system to predict medical health by developing machine learning algorithms. Where this information system is expected to predict the health condition of someone who is sick or who is still healthy then produces an output in the form of a diagnosis that can help patients take decisions in determining medical treatment steps. The method used in this research is to collect data and study literature and conduct discussion groups with partners in order to obtain the results of research outcomes that contribute in the field of information technology. In this paper we will discuss test data using a priori algorithms and compare the results with other algorithms.

Keywords: Machine Learning, Apriori Algorithm, Prediction, Health & Information Systems.



IT008: The Water Overflow Tracking Alarm System

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The facts show that high rainfall will result in increased water discharge in the river. High water discharge, with obstacles in the upstream river, can cause flooding downstream. The effectiveness of the flooding mitigation management can be identified through the three strategic factors (1) speed of a river, (2) river distance and (3) turbidity of the river. The purpose of this study is to develop an alarm system by measuring the river speed to alert people, especially who live near the river. A system prototype is developed using velocity sensors which are connected to Android and undergone experimental method approach. The experimental was involving human-made high water flow creation that simulating the speed of river flow from 0.00 m³/sec up to 37.33 m³/sec to activate the sensor. The sensor data is analysed and saved in the data-based web that was created for easy assess. As a result, the alarm system detects as low as 0.44 M3/sec of river speeding. The alarm system has successfully read the river speeding where the local community able to access the first-hand information from the data-based web. This prototype is expected to assist in advance the potential flood disaster independently, thereby reducing the impact on the community.

Keywords: River, Flood, Alarm & Speed

IT009: Predictive Analysis on Heartdisease Data Set: Deep Learning Investigation

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In medical datasets, relationships and patterns within the data could provide new medical knowledge. Many intelligent techniques or algorithms like Neural Network, Bayaesian classifier and Genetic algorithm are used for predictive analysis to obtain the knowledge. In the study of predictive analysis on Heart Disease dataset using Convolutional Neural Network (CNN), the accuracy of the performance is compared based on Accuracy, Precision, Recall dan F1-Measure from the literature. A comparison between CNN or Deep Learning (DL) and Rough Outlier Algorithm using the measurement F-Measure is then analysed. It is found that both algorithms are competitive. For further investigation, a hybrid Rough_Outlier with DL algorithms will be tested on Heart Disease dataset.

Keywords: Predictive Analysis, Deep Learning, CNN & Rough_Outlier



IT010: Issues and Challenges of Information Technology (IT) in Malaysia: Industry Perspective on New Competencies amongst It Polytechnics' Graduates

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The transformation towards the Fourth Industrial Revolution will change almost the entire job process now from the way we work, the way our economy works, and the way we communicate between humans and machines. With the introduction of new technologies, skills, and competence in the workplace become crucial because of the adaptation of automation and artificial intelligence that mark the acceleration of the changes. Polytechnics is one of the institutions in Malaysia that offers IT courses that meant to produce high quality, holistic, enterprising and competitive human capital workers in line with industry needs. However, does Polytechnic equip its future workers with the new skills needed by industries, especially the skills to work with the latest technology in the workplace? This paper will discuss the issues and the challenge of IT polytechnics graduate from the IT industries' perspective. As for that discussion, a qualitative study using a semi-structured interview, and thematic analyses were performed using NVivo 12. Therefore, seven IT organizations were chosen based on the criteria needs. The findings and recommendations for further research are also presented.

Keywords: Information Technology, Competencies, Issues & Polytechnic.

IT011: The Effectiveness in Using Packet Tracer Simulation Software in Improving the Skills among Computer System and Networks Programme Students

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Simulation is an abstract description of a situation or the actual situation with the help of visual technology to solve a problem or issue. Research was being done from the teaching and learning (PdP) sessions in Computer Systems and Networks Programme at Jasin Community College, Selandar Community College and Masjid Tanah Community College focuses on Network Administration course. According to the syllabus, students need to generate network design plan using proper software identified by their lecturer. Lecturers at Jasin Community College, Selandar Community College and Masjid Tanah Community College chose to use Packet Tracer version 7.0 simulation software in the classroom, where students are not only able to produce a visual sketch plan network design in detail according to the network connection as in true event but students can also insert network



hardware such as computers, switches and routers in the design plan and perform computer configuration using Command Line Interface (CLI). The purpose of this survey is to examine the effectiveness in using Packet Tracer simulation software version 7.0 in improving the skills of students in teaching and learning (PdP) sessions. The sample consisted of forty students from 3rd semester Computer Systems and Networking Programme. The results were obtained using a questionnaire and analyzed using descriptive and inferential statistics. The results showed that the respondents agree that the use of Packet Tracer software version 7.0 helps improve students' skills in the process of teaching and learning (PdP) for Network Administration course focuses Community College in Melaka.

Keywords: Software Packet Tracer 7.0, PdP & Student Skills

IT012: Media Multimedia Sistem Paparan Digital Pintar bagi Penggunaan Penyampaian Maklumat dalam Pengajaran dan Pembentangan

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Penggunaan media multimedia dalam pendidikan merupakan proses penyampaian maklumat yang berasaskan teknologi. Kesesuaian penggunaannya adalah meluas. Bagi persekitaran seorang pendidik terutamanya di IPT, penggunaan multimedia bukan sahaja terhad untuk penyampaian ilmu di dalam kelas tetapi juga diperlukan sebagai medium bantuan penyampaian maklumat semasa pembentangan dalam pertandingan inovasi dan seumpamanya. Penggunaan multimedia adalah lebih menarik dan berkesan jika dibandingkan dengan penggunaan kaedah lama seperti nota, dan catatan di atas papan putih. Namun kekangan masa dan kepakaran seseorang dalam penyediaan multimedia menyebabkan mereka lebih selesa meneruskan pembentangan dan pengajaran dengan kaedah lama. Sistem paparan digital pintar adalah templat pembentangan yang dibangun menggunakan Raspberry Pi 3 berdasarkan Model ADDIE. Ia direka bagi memudahkan pengguna dalam penyediaan multimedia. Paparan maklumat dapat dihasilkan dalam kombinasi antara teks, gambar, video dan *running text* mengikut aturan maklumat yang dikehendaki. Penetapan masa paparan dan penyuntingan dapat dilakukan dengan mudah menggunakan komputer atau telefon pintar. Sistem ini juga disertakan paparan waktu dan tarikh semasa yang berubah secara automatik. Paparan boleh dibuat melalui komputer dan televisyen yang mempunyai port HDMI. Penggunaan sistem ini dapat membantu pengguna dalam penyediaan bahan paparan dengan lebih mudah dan cepat namun gaya paparan maklumat yang lebih menarik berasaskan pendekatan teknologi *Internet of things*.

Kata kunci: Paparan Digital, Multimedia, Pengajaran, Pembentangan & Paparan Maklumat



IT013: Kebolegunaan Aplikasi Mudah Alih (Mobile Apps) *Network Kit* bagi Kursus Asas Rangkaian Komputer dalam Kalangan Pelajar Sijil Teknologi Maklumat di Kolej Komuniti Pasir Gudang

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Kini, pelbagai teknologi pendidikan digunakan dalam proses pengajaran dan pembelajaran (PdP) bagi menambahbaik amalan konvensional yang sedia ada antaranya ialah *Mobile Learning* iaitu pembelajaran berkonsepkan mudah alih. Kajian ini dijalankan bertujuan untuk melihat kebolegunaan aplikasi mudah alih (mobile apps) *Network Kit* bagi kursus Asas Rangkaian Komputer dalam kalangan pelajar Sijil Teknologi Maklumat di Kolej Komuniti Pasir Gudang. *Network Kit* adalah satu aplikasi pembelajaran secara mudah alih sebagai pemudahcara dalam kaedah pengajaran dan pembelajaran yang lebih interaktif dan menarik serta boleh dicapai secara percuma melalui internet dengan memuat turun menerusi *Google PlayStore* ke dalam telefon pintar atau android. Aplikasi mudah alih ini dibangun menggunakan aplikasi *Ionic Creator* berasaskan model reka bentuk ADDIE yang mempunyai lima fasa iaitu fasa analisis, fasa reka bentuk, fasa pembangunan, fasa pelaksanaan dan fasa penilaian. Kajian ini dijalankan secara deskriptif dengan menggunakan soal selidik berskala Likert lima pilihan untuk menilai persepsi pengguna terhadap kebolegunaan aplikasi mudah alih yang dibangun. Kajian dilaksanakan ke atas keseluruhan 82 responden yang terdiri daripada pelajar Sijil Teknologi Maklumat di Kolej Komuniti Pasir Gudang. Hasil dapatan kajian menunjukkan bahawa aplikasi ini mudah digunakan dalam meningkatkan kecekapan pembelajaran pelajar terhadap kursus Asas Rangkaian Komputer di mana ianya juga sangat membantu pelajar dalam mencapai maklumat yang tepat dan cepat seterusnya menjadikan proses PdP lebih interaktif ke arah Industri 4.0.

Kata kunci: Aplikasi Mudah Alih, *Mobile Learning*, PdP & Rangkaian Komputer

IT014: The Effectiveness in Using Remaps in Improving Wifi Coverage

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Remote Mobile Access Point technology or REMAPS is an innovation built to facilitate and benefits the user in expanding the wireless technology in anywhere possible. This study is to survey the effects from the use of this innovative technology in increasing the effectiveness of REMAPS in improving Wifi coverage at community college generally. REMAPS was developed by using natural energy source which is solar energy or solar through the use of solar panels known as technology photovolcan in helping users to reach



out internet access anywhere possible without having to rely on electricity from the grid. The innovative technology was design using lightweight material and able to withstand weathers in Malaysia. As Malaysia are heading towards IR4.0 technology, REMAPS are also equipped with IOT technology where users can control the device using handphone application. A total of 210 respondents were selected from Jasin Community College and Segamat Community College to see the effectiveness in using REMAPS in their college. Jasin Community College and Segamat Community College was selected to see the differences in effectiveness between campus and shoplot type of college. The research design is a quantitative survey using a questionnaire as an instrument. Data were analyzed involving mean, standard deviation and T-Test. Results of the study shows there is a high tendency in terms of implementation, awareness and control application in using REMAPS Technology.

Keywords: Remaps Technology, Wireless Technology & Photovoltan Solar Technology

IT015: Boundaryless Assets Database Accessed by QR Codes to Support Asset Management Efficiency

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Asset management refers to any system in which items of value for an entity or group are monitored and maintained. There are include systematic process of developing, operating, maintaining, upgrading, and disposing of assets in the most cost- effective manner. It is important to registered and recorded all the organization's assets inventory to manage its assets efficiently. Nowadays, organizations have a lot of challenge in efficiently monitor all the assets especially location, physical and condition. This issue occurred not only in large organizations but also medium and smaller organization. *Sistem Pegurusan Aset (SPA)* has been established in all government agencies in Malaysia. It is intended to record all the assets acquired in all the relevant departments. However, the system has some constraints at the implementation stage such as limited access, confidentiality, and inappropriate use by lecturers and staff's. This paper will measure the staff's perception, usage of the QR codes that are presently being used in Politeknik Melaka and will explore the possibilities of integrating Quick Respond (QR) codes to support the assets management. QR codes are grid barcodes that can be accessed with any smart phones and can link instant access directly to any information such as image, location, video without boundary since permitted. Therefore, flipHTML5 software is used as an asset database medium including pictures, videos, locations and asset information, while QR code is used as a fast scanner to access all the assets database. The aim of the study is to evaluate the effectiveness of the Asset Management System using QR Code (SPAQRC) among staffs in Politeknik Melaka. Following the procedures of assets management discussed in the methodology, the results from the descriptive analysis exhibit a high score of mean using the SPAQRC as a tool to manage the assets. The implementation of SPAQRS to tackle the issue of assets



management under the government assets settings found to improve the efficiency of assets' management processes according to the circulars' requirement.

Keywords: QR Codes, Asset management



Category D (Social Science)



SS001: Determine Priority Aspect in Developing Entrepreneurship for Students Using ANP Method: Indonesia-Malaysia Case

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Enny Segarahati Barus, Nurul Aesyah Ismail Chong, Azilah Anuar & Harlina Nordin

The percentage of unemployed alumni from universities still tends to rise both in Indonesia and Malaysia, even though entrepreneurship education has been taught at universities in the country. This situation is certainly not in accordance with the wishes of the two governments in reducing the level of unemployment of college alumni. This study aims to describe the aspects of the problem that are important priorities in conducting entrepreneurship development for students, Case in Politeknik Negeri Medan-Indonesia and Politeknik Nilai Negeri Sembilan Malaysia. By using the ANP method, FGD was conducted to experts and distributed questionnaires to 25 participants. Lack of know how is the highest priority Internal Problem, followed by intention, and last was performance. Total sale is the highest priority Performance Problem and last priority was profit. Career intention is the highest priority Intention Problem, followed by self-efficacy, and last priority was parent background. Business plan is the highest priority Lack of Know How Problem, followed by creativity, using of IT, communication skill and last priority was technology. The result shows that learning method is the highest priority external problem of entrepreneurship model, followed by lecturer, industry, and last priority was government. Experience is the highest priority Lecturer problem, and the last was training of trainer. Project based is the highest priority Learning Method problem followed by mentorship, theoretical, apprenticeship and incubator. Funding support is the highest priority Government, and last was policies. The priority Industry of entrepreneurship model shows that training is the highest priority, and last was sponsorship. Learning method is the highest priority External Solution, followed by industry, lecturer, and last priority was government.

Key words: Priorities of The Problem, Student Entrepreneurship, ANP

SS002: A Survey on the Role of Women in Empowering Sustained Economic Growth and Sustainable Development through Education on Poverty Reduction (Comparative Study Indonesia and Malaysia)

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Marlya Fatira, Norfazila Ahmad, Azalinda Mat Saad, Bani Hidayat Mohd Shafie, Ermyna Seri & Mariahati

Women nowadays have been involved with role and economic development in Malaysia, Indonesia and whole world. This aim of this study are to identify women factor got involved with career, woman readiness, *fiqh* implementation level in career, issue faced



and support system in economic development. A Quantitative survey was conducted using questionnaire adapted from Hamzah & Basiron (2013) and Faradillah et.al (2015) via online involving 510 respondents. Data analyzed by descriptive and inferential. The study showed that, benefit knowledge and skill is the main factor to why woman are involved in career (47.6%), woman readiness to involved in economic development is high (SM=4.04, SP=0.59), and *fiqh* practice in career also high (SM=4.64, SP=0.43). Issue faced is in medium level (SM=2.61, SP=0.81) while support system level is high (SM=3.85, SP=0.72) A Mann-Whitney U Test revealed that a significant difference between citizen for woman readiness to involve in economic development, $U=20092.000$, $z=-1.982$, $p=.048$, *fiqh* practice aspect in career, $U=16572.500$, $z=-4.579$, $p=.000$ and support system aspect, $U=17181.500$, $z=-4.075$, $p=.000$. Analysis by Kruskal-Wallis revealed a significant difference based on age for *fiqh* practice in career with $\chi^2 (4, n=510) =29.288$, $p=.000$, there is a significant difference based on marital status also on *fiqh* practice in career with $\chi^2 (2, n=510)=29.288$, $p=.000$ and there is a significant difference based on education level to all aspects. Woman with high education level are more prepared to be involved in economic development $\chi^2 (7, n=510)=73.855$, $p=.000$, *fiqh* practice in career with $\chi^2 (7, n=510)=44.483$, $p=.000$, understand issue $\chi^2 (7, n=510)=34.268$, $p=.000$ and support system in economic development with $\chi^2 (7, n=510)=38.166$, $p=.000$. This study contributes the data about woman in economic development. Good practice between the two countries can be made as a guide for improvement. Thus, if a woman is ready, has the capacity and the support needed, it will definitely become a catalyst in the progress of a nation and at the same time eradicating poverty.

Keyword: Women, Economic Development, Malaysia, Indonesia & Poverty

SS003: Role of Women in Empowering Sustained Economic Growth and Sustainable Development through Education on Poverty Reduction (Comparative Study Indonesia and Malaysia)

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This research is about Role of Women in Empowering Sustained Economic Growth and Sustainable Development Throught Education on Poverty Reduction in Indonesia, especially at North Sumatera. This Research conducted to find out discovering the characteristics of women in Indonesia especially at North Sumatera. Who are able to provide a role in empowering people from poor environments through education to create the welfare of the community and to find the right model of community empowerment to reduce poverty through the role of women, especially in the field of education to achieve economic prosperity? This study uses analytic decrictive methods, with qualitative to obtain information and collect the data needed. The results of this study indicate that women who are able to make changes to the poor environment around their neighborhood



and succeed to get out of poverty by inviting other women to get out of poverty are women who have persistent characteristics and never give up, have a high sense of responsibility towards the environment around him, have a high motivation to improve his life, have a leadership spirit and have a high value of religiosity, are able and able to establish communication with the surrounding environment, dare to utilize technology and communication networks in social relations.

Key Words: Helpless Woman, Out Of Poverty & Successful

SS004: The Relationship between Intelligence and Entrepreneurial Intention among Malaysian Polytechnics Students

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Wan Chik Nurida Ismail, Shamariza Maarof, Nursiah, Azhar & Edy Sahputra Sitepu

A study was conducted to determine the relationship between intellectual, emotional, spiritual intelligence, and entrepreneurial intention of Malaysian Polytechnic students. The psychological model based on Ajzen's theory of planned behaviour was used to identify the factors influencing the entrepreneurial intention of these students. The purpose of this study is to explain how entrepreneurial intention influenced by exogenous and endogenous factors. Exogenous factors consist of intellectual intelligence, emotional intelligence and spiritual intelligence. Whereas endogenous variables consist of attitudes towards entrepreneurship, subjective norms and perceived behavioral control. Data were collected via questionnaire from 400 students of two polytechnics in Malaysia. The study utilized correlation and regression statistics to analyse the data. The finding of the survey shows that there is a significant relationship between intelligence towards entrepreneurial intention. All three intelligences (intellectual, emotional and spiritual) have their contribution towards entrepreneurial intention among Malaysian Polytechnic students. The result of the study has valuable implications for policy makers in Higher Education Division, polytechnic administrators and educators.

Keyword: Entrepreneurial Intention, Intellectual Intelligence, Emotional Intelligence, Spiritual Intelligence & Polytechnic



SS005: Aplikasi Kaedah Fuzzy Delphi Terhadap Kerangka Kriteria Pelaksanaan Proses Penyembelihan dalam Industri Makanan Halal: Suatu Pandangan Malaysia dan Indonesia

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Saparuddin, Rohana Hassan Basri, Siti Rauda Azis, Mohd Riduan Mohd Jamil

Dasawarsa kini memperlihatkan bahawa industri halal sering diperdebatkan melalui seminar antarabangsa di negara-negara maju. Hal ini membuktikan bahawa masyarakat global amat mementingkan proses penyediaan halal yang berkesan dalam semua aspek. Jika diperhalusi, apabila berbicara tentang industri halal ini, proses penyembelihan haiwan adalah menjadi asas kepada kelestarian halal terhadap sektor pemakanan. Maka adalah amat penting penghasilan suatu kerangka kriteria yang mengandungi domain yang diperlukan oleh para penyembelih muslim bagi memastikan haiwan yang disembelih adalah berasaskan kepada konsep halalan toiyiban. Justeru itu, suatu kajian yang emperikal telah dijalankan dengan usahasama penyelidikan daripada Politeknik Nilai, Malaysia dan Politeknik Medan, Indonesia dalam mengasikkan suatu kerangka domain yang meliputi kriteria yang diperlukan dalam prsoes penyembelihan haiwan bagi menepati kehendak syariat. Kajian ini juga dijalankan dengan mengumpulkan kesepakatan pandangan sekumpulan pakar yang arif dalam bidang penyembelihan menurut agama Islam. Bilangan pakar ini adalah terdiri seramai 20 orang di mana 10 pakar daripada Malaysia dan 10 pakar daripada Indonesia. Penganalisaan data kajian ini pula menggunakan kaedah Fuzzy Delphi dalam membangunkan kerangka yang dihasratkan. Pemilihan pakar pula adalah berasaskan pandangan Berliner (2004) yang menghujahkan bahawa seseorang individu adalah bertaraf pakar apabila beliau mempunyai pengalaman dalam sesuatu bidang melebihi tempoh 5 tahun. Hasil dapatan kajian ini memaparkan terdapat tujuh kriteria yang perlu diberi penekanan dalam memastikan proses penyembelihan yang dijalankan adalah sah dari sisi agama Islam. Kerangka ini terdiri daripada domain berikut iaitu 1) Kriteria Penyembelih; 2) Alat Sembelihan; 3) Rumah Sembelihan; 4) Ciri Haiwan Sembelihan; 5) Pemeriksa Halal Muslim; 6) Latihan Kepada Penyembelih dan; 7) Penilaian Kepada Penyembelih. Seterusnya setiap domain kriteria ini terkandung elemen yang mengikut keutamaan berasaskan pandangan pakar daripada kedua negara. Adalah diharapkan kerangka ini dapat memperkasakan para penyembelih muslim bagi memastikan industri halal dapat diperkasakan. Cadangan lanjutan kajian ini pula adalah penghasilan suatu modul khusus bagi setiap domain dalam menjadi suatu manual panduan yang berguna bagi masyarakat Islam di seluruh dunia.

Keyword: Halalan Toiyiban, Kerangka Penyembelih Muslim, Industri Halal & Kaedah Fuzzy Delphi



SS006: Rekabentuk Kompetensi Penyembelihan Haiwan dalam Industri Makanan Halal Berasaskan Teknik Kumpulan Nominal: Kajian Kes di Malaysia dan Indonesia

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Di era globalisasi kini, kompetensi memainkan peranan yang penting bagi memastikan kelestarian dan kemampunan seseorang individu dan organisasi kekal berdaya saing. Hal ini menatijahkan keperluan penetapan kompetensi dalam semua bidang kerja agar hasilnya menepati kehendak semasa dan terkini. Jika disoroti, industri halal adalah suatu sektor yang hangat diperkatakan kini. Antara bidang halal yang dititik beratkan adalah dalam industri pemakanan. Jika diteliti, dalam industri pemakanan yang berasaskan haiwan, proses penyembelihan adalah suatu proses yang harus diberi perhatian kerana proses ini wajib menepati kehendak syariat yang telah ditetapkan dalam Islam. Maka, kajian ini adalah bertujuan untuk merekabentuk kompetensi yang wajib dilaksanakan dalam proses penyembelihan haiwan. Kajian ini juga adalah bersifat transnasional di mana ia melibatkan sekumpulan pakar seramai 20 orang di mana ia terdiri 10 pakar adalah daripada negara Malaysia dan 10 pakar daripada negara Indonesia. Rasional pemilihan dua negara ini adalah kerana majoriti rakyatnya adalah muslim. Analisa data pula dijalankan menggunakan pendekatan *Nominal Group Technique* (NGT) atau Teknik Kumpulan Nominal. Pemilihan kaedah ini adalah amat berkesan kerana ia mampu menyamaratakan pandangan pakar bagi kedua-dua negara. Dapatam kajian memaparkan bahawa terdapat tujuh kompetensi yang perlu ada dalam memastikan aspek penyembelihan menepati kehendak syariat iaitu 1) Kriteria Penyembelih; 2) Alat Sembelihan; 3) Rumah Sembelihan; 4) Ciri Haiwan Sembelihan; 5) Pemeriksa Halal Muslim; 6) Latihan Kepada Penyembelih dan; 7) Penilaian Kepada Penyembelih. Kesemua kompetensi ini diharapkan mampu menjadi panduan dalam memastikan indsutri pemakanan halal dapat diperkasakan bukan hanya di negara umat Islam malah dikongsikan kepada negara diseluruh dunia. Selanjutnya antara cadangan kajian lanjutan adalah membangunkan suatu model yang komprehensif dengan melibatkan negara-negara yang majoritinya umat Islam seperti Brunei, Turki, Arab Saudi dan sebagainya.

Keyword: Kompetensi Penyembelihan Haiwan, Industri Halal & Teknik Kumpulan Nominal.



SS007: Efektivitas Audit Internal pada Politeknik Negeri di Indonesia

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Efektivitas audit internal dalam suatu organisasi sangat diperlukan untuk dapat mencapai tujuan organisasi dan membantu mendeteksi terjadinya kecurangan. Kecurangan akan dapat diminimalisir dengan adanya pengendalian internal yang efektif. Pada kenyataannya masih banyak ditemukannya kelemahan pengendalian interen di instansi pemerintah, maupun di perguruan tinggi. Penelitian ini bertujuan untuk mengetahui bagaimana efektivitas audit internal di Politeknik Negeri Seluruh Indonesia. Populasi pada penelitian ini adalah seluruh auditor Satuan Pengawasan Interen di Politeknik Negeri seluruh Indonesia sebanyak 250 orang. Penyebaran kuesioner dilakukan menggunakan *google form*. Dari penyebaran *google form* sebanyak 51 org yang mengisi kuesioner dengan sempurna dan dapat diolah. Responden penelitian ini adalah kepala SPI, dan pemeriksa (auditor internal). Pengujian dilakukan dengan analisis deskriptif. Hasil penelitian ini menunjukkan bahwa Efektivitas audit internal pada Politeknik Negeri di Indonesia masih perlu ditingkatkan dalam hal pelayanan audit terutama dalam hal peningkatan proses penegelolaan risiko, pengendalian dan tata kelola. Selain itu, auditor dalam melaksanakan pemeriksaan masih belum sepenuhnya berdasarkan standar audit internal dan Auditor internal juga masih belum sepenuhnya memastikan bahwa manajemen telah menetapkan kriteria yang akan digunakan sebagai alat penilai dalam melakukan evaluasi dan belum sepenuhnya bekerjasama dengan manajemen untuk membuat kriteria evaluasi. Tindaklanjut dan implementasi dari rekomendasi yang diberikan auditor belum maksimal. Begitu pula dengan auditor eksternal yang masih belum sepenuhnya melakukan evaluasi atas laporan audit internal dan menggunakannya sebagai acuan dalam pemeriksaan.

Kata Kunci: Dukungan Manajemen Puncak, Kompetensi Auditor Internal & Efektivitas Audit Internal

SS008: Pendeteksian Kecurangan Laporan Keuangan dengan Analisis *Fraud Triangle* pada *Consumer Foods Industry* yang Terdaftar di Bursa Efek Indonesia

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Laporan keuangan merupakan suatu alat penting bagi para pemakai informasi dalam pengambilan keputusan, namun pada kenyataannya banyak terjadi kecurangan dalam laporan keuangan sehingga informasi yang disajikan dalam laporan keuangan tidak mencerminkan keadaan yang sebenarnya. Penelitian ini bertujuan untuk mengetahui pendeteksian kecurangan laporan keuangan dengan analisis fraud triangle. Tekanan diukur



dengan stabilitas keuangan, tekanan eksternal, kebutuhan keuangan pribadi, target keuangan, sedangkan peluang diukur dengan sifat industri, pengawasan yang tidak efektif, dan rasionalisasi diukur dengan perubahan KAP. Penelitian dilakukan pada perusahaan industri barang konsumsi yang terdaftar di bursa efek Indonesia. Uji hipotesis menggunakan analisis regresi berganda, dengan *software SPSS*. Hasil penelitian ini menunjukkan bahwa stabilitas keuangan, tekanan luar, kebutuhan individu, target keuangan, sifat alamiah dan pengawasan yang tidak efektif tidak berpengaruh terhadap kecurangan laporan keuangan, sedangkan rasionalisasi berpengaruh terhadap kecurangan laporan keuangan.

SS009: Efektivitas Audit Internal pada Lembaga Layanan Pendidikan Tinggi (L2Dikti) Seluruh Indonesia

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Listiorini

Kecurangan dalam suatu organisasi sangat sulit untuk dihilangkan, namun dapat dicegah dan diminimalisir. Salah satu cara untuk mencegah terjadinya kecurangan adalah dengan memiliki departemen audit internal yang efektif. Departemen audit internal yang efektif akan dapat memantau jalannya kegiatan dalam suatu organisasi apakah berjalan sesuai dengan prosedur yang telah ditetapkan dan pada akhirnya akan meningkatkan efektivitas pengendalian interen. Pada kenyataannya kecurangan masih banyak terjadi baik di pemerintah daerah, badan usaha milik negara maupun perguruan tinggi. Tujuan penelitian ini adalah untuk mengetahui efektivitas audit internal pada Lembaga Layanan Pendidikan Tinggi (L2Dikti) di seluruh Indonesia. Pengumpulan data dilakukan dengan menyebarkan kuesioner dengan menggunakan *google form*. populasi adalah sebanyak 84 auditor internal yang berasal dari 14 Wilayah Lembaga Layanan Pendidikan Tinggi (L2Dikti) seluruh Indonesia yang menjadi responden adalah auditor internal yang terdiri dari kepala SPI, ketua tim dan anggota pemeriksa. Kuesioner yang dijawab secara lengkap dan dapat diolah sebanyak 31 kuesioner. Pengujian dilakukan dengan menggunakan analisa deskriptif. Hasil penelitian ini menunjukkan bahwa efektivitas audit internal di L2Dikti seluruh Indonesia sudah efektif, hal ini dapat dilihat dari banyaknya kontribusi departemen audit internal kepada organisasi, auditor yang melaksanakan dokumentasi rencana setiap penugasan audit, mengkomunikasikan informasi yang berkaitan dengan perencanaan, pelaksanaan dan pelaporan pemeriksaan kepada *auditee*, mengkomunikasikan temuan dan rekomendasi audit kepada *auditee*, memantau tindak lanjut dari rekomendasi dan berkomunikasi dengan pejabat yang berwenang dari unit yang diperiksa terkait dengan perbaikan dan temuan audit serta mendokumentasikannya dalam kertas kerja pemeriksaan. Pihak manajemen juga menghargai masukan-masukan dan kontribusi yang diberikan oleh auditor internal di setiap pertemuan. Selain itu, sangat sedikit keluhan dari *auditee* bagi auditor internal selama melaksanakan pekerjaannya. Namun audit internal



belum sepenuhnya melakukan pelayanan yang sistematis dalam hal manajemen risiko dan peningkatan tata kelola perusahaan.

Keyword: Efektivitas Audit Internal, Temuan Audit & Tindaklanjut

SS010: Peranan Dukungan Manajemen Puncak dan Kompetensi Auditor Internal dalam Meningkatkan Efektivitas Audit Internal Studi Kasus pada Kabupaten Nias Barat

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Abdul Rahman

Kelemahan sistem pengendalian internal dapat menyebabkan tidak terlaksananya rencana kerja pemerintah, kegiatan pemerintah menjadi tidak transparan dan akuntabel, hingga dapat menyebabkan kerugian Negara. Kelemahan-kelemahan pengendalian interen yang banyak terjadi di pemerintahan mengindikasikan masih lemahnya sistem pengendalian interen di pemerintah daerah. Salah satu upaya yang dapat dilakukan untuk meningkatkan efektivitas pengawasan dan pengendalian internal yaitu dengan adanya audit internal yang efektif. Tujuan studi ini adalah untuk mengetahui peranan dukungan manajemen puncak dan kompetensi auditor internal dalam meningkatkan efektivitas audit internal. Penelitian ini menggunakan metode kuantitatif deskriptif. Responden pada penelitian ini adalah kepala inspektorat, auditor dan kepala dinas di Inspektorat Kabupaten Nias barat. Metode pengumpulan data yang digunakan adalah dengan mengajukan pertanyaan tertutup menggunakan kuesioner. Analisa menggunakan analisis deskriptif. Hasil dari penelitian ini menunjukkan bahwa tingkat kompetensi auditor internal telah baik, akan tetapi dukungan manajemen puncak masih perlu dimaksimalkan, dimana manajemen puncak belum sepenuhnya terlibat dalam rencana audit, dan belum sepenuhnya menindaklanjuti rekomendasi yang disampaikan oleh auditor internal. Selain itu juga, manajemen puncak belum sepenuhnya mendukung penyediaan anggaran untuk pelaksanaan proses audit internal dan penyediaan sarana pelatihan dan pengembangan kompetensi dan keterampilan auditor internal. Faktor-faktor tersebut dapat menyebabkan ketidakefektifan kegiatan audit internal, adanya temuan berulang oleh karena rendahnya tindak lanjut terhadap rekomendasi yang diberikan.

Kata Kunci: Efektivitas Audit Internal, Pengendalian Internal, Dukungan Manajemen Puncak, Kompetensi Auditor Internal



SS011: Pendeteksian Kecurangan Laporan Keuangan dengan Analisis Fraud Triangle pada Perusahaan LQ45 yang Terdaftar di Bursa Efek Indonesia

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Kecurangan Laporan Keuangan merupakan suatu tindakan yang disengaja dilakukan oleh manajemen dengan cara merekayasa nilai dari laporan keuangan untuk menyesatkan para pengguna laporan keuangan (Kartika et. al., 2017). Informasi pada laporan keuangan seharusnya menggambarkan kondisi dan kinerja keuangan perusahaan yang sebenarnya dan tidak mengandung informasi yang menyesatkan bagi pengguna, namun pada kenyataannya, masih banyak laporan keuangan yang tidak menginformasikan keadaan keuangan perusahaan yang sebenarnya. Penelitian ini bertujuan untuk mengetahui pendeteksian kecurangan laporan keuangan dengan analisis *fraud triangle*. Tekanan diukur dengan stabilitas keuangan, tekanan eksternal, kebutuhan keuangan pribadi, target keuangan, sedangkan peluang diukur dengan sifat industri, pengawsan yang tidak efektif, dan rasionalisasi diukur dengan perubahan KAP. Penelitian dilakukan pada perusahaan LQ45 yang terdaftar di bursa efek Indonesia. Uji hipotesis menggunakan analisis regresi, dengan software SPSS. Hasil penelitian menunjukkan bahwa variabel *financial stability* yang diproksikan dengan perubahan aset (ACHANGE) berpengaruh terhadap kecurangan laporan keuangan (*financial statement fraud*) sedangkan variabel lainnya tidak berpengaruh terhadap.

Kata Kunci: Tekanan, Peluang, Kecurangan Laporan Keuangan

SS012: Perilaku Kecurangan Akademik Mahasiswa Akuntansi pada Perguruan Tinggi Negeri di Pulau Sumatera

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Dina Arfianti Siregar & Cut Nizma

Mahasiswa yang berperilaku jujur diharapkan akan dapat menjadi generasi bangsa yang handal dan bermartabat. Pada kenyataannya tidak semua mahasiswa mempunyai perilaku jujur, dan masih terdapat perilaku mahasiswa yang tidak sesuai dengan etika dan peraturan yang berlaku. Di Indonesia kecurangan akademik juga terjadi baik dilakukan mahasiswa maupun para dosen/guru bahkan calon Profesor. Tujuan penelitian ini adalah untuk mengetahui bagaimana kecurangan akademik dilakukan oleh mahasiswa yang disebabkan karena adanya tekanan, peluang dan rasionalisasi. Populasi adalah seluruh mahasiswa akuntansi pada perguruan tinggi negeri di pulau sumatera, sedangkan sample adalah mahasiswa akuntansi semester 7. Pengumpulan data dilakukan dengan menggunakan google form, kuesioner yang kembali dan lengkap sebanyak 127. Penelitian ini



menggunakan analisa deskriptif. Hasil penelitian menunjukkan bahwa tingkat perilaku kecurangan akademik mahasiswa akuntansi di Universitas Negeri di pulau Sumatera rendah, hal ini menunjukkan bahwa mahasiswa secara rata-rata mengerjakan tugas pribadi maupun kelompok dengan baik dan jarang mengambil kutipan dari tulisan orang lain tanpa mencantumkan nama penulis, pada saat pelaksanaan ujian, rata-rata mahasiswa jarang melakukan kecurangan. Mahasiswa cukup tertekan dengan tugas yang diberikan oleh dosen cukup banyak dan cukup sulit, standar kelulusan yang harus dicapai cukup tinggi, ini menyebabkan mahasiswa harus terus belajar untuk mendapatkan standar kelulusan. Mahasiswa cukup memiliki peluang untuk melakukan kecurangan akademik, hal ini disebabkan pengecekan plagiarisme pada tugas mahasiswa belum sepenuhnya memadai, dosen belum sepenuhnya merubah pola tugas mahasiswa pada kelompok yang berbeda, sehingga adanya kemungkinan atau peluang untuk mengcopy paste hasil pekerjaan kelompok lain, rendahnya pencegahan yang dilakukan oleh dosen terhadap kecurangan yang dilakukan pada saat ujian, serta mahasiswa berada pada lingkungan yang cukup melakukan kecurangan pada saat kegiatan belajar mengajar. Disamping itu mahasiswa merasa perilaku curang adalah sesuatu yang wajar terjadi dikalangan mahasiswa, untuk mendapatkan pencapaian yang baik, atau memenuhi standar kelulusan.

Kata Kunci: Perilaku Kecurangan Akademik, Tekanan & Peluang

SS014: The Role of Sustainable Tourism Development on Tourist Satisfaction and Revisit Intention

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This research is titled The Role of Sustainable Tourism Development on Tourist Satisfaction and Revisit Intention. The method used in this study is the Structural Equation Model (SEM) and the data were analysed with AMOS 22 software. The purpose of this study is to determine the factors that influence the tourists revisit intention to a tourism destination. Thus the government and key stakeholders can implement the strategies and policies needed to increase tourist visits. The results of this study indicate that revisit intention is directly and significantly affected by tourist satisfaction, tourist decisions and perceived experienced. Whereas management variables, economic benefits, social and cultural benefits and environmental benefits have no significant direct effect. For tourist satisfaction variable is directly and significantly influenced by aspects of management and environmental aspects while economic aspects of benefits and social and cultural benefits have a direct effect that is not significant. Both perceived experienced and tourist decision variables have a significant direct effect on management variables, economic aspects, social cultural aspects and environmental aspects.



Keywords: Sustainable Tourism, Management, Economic Benefit, Social Cultural Benefit, Environment Benefit, Tourist Decision, Revisit Intention, Tourist Satisfaction & Perceived Experienced.

SS015: The Role of Intellectual, Emotional and Spiritual Intelligence towards Entrepreneurial Intention among TVET Student Indonesia and Malaysia

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The title of this research is “The Role of Intellectual, Emotional and Spiritual Intelligence towards Entrepreneurial Intention among TVET Student Indonesia and Malaysia”. The purpose of this study is to build a model of entrepreneurial intention influenced by exogenous and endogenous factors. Exogenous factors consist of intellectual intelligence, emotional intelligence, and spiritual intelligence. Whereas endogenous variables include attitudes towards being entrepreneurs, subjective norms and perceived behavioural control. This research was conducted on students who are currently studying vocational education in Indonesia and Malaysia. Samples were taken by purposive random sampling totalling 800 responded each in Indonesia and Malaysia. The data analysis was performed using structural equation models (SEM). The results of this study are all exogenous and endogenous variables significantly influence entrepreneurial intention directly and indirectly, except the emotional intelligence and spiritual intelligence directly and emotional intelligence variables through attitude toward entrepreneurship.

Keyword: Entrepreneurial Intention, Intellectual Intelligence, Emotional Intelligence & Spiritual Intelligence.

SS016: The Empowerment of Batik Crafters in Kampung Batik Medan

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The purpose of this study is to find and analyze the Medan city government strategy, in addition to the obstacles it faces, and also provides a good strategy for managing these obstacles. The theory used is the theory of strategic management, marketing and entrepreneurship related to strategic issues, deep and comprehensive to improve the quality of the Kampung Batik Medan. This type of research is a qualitative descriptive method that uses the SWOT analysis method and litmus test as a tool to measure the environment and obtain the strategies needed in developing batik business in Kampung Batik Medan. The results showed that the handling of Kampung Batik Medan was not optimal, so a strategy was needed to minimize this condition. The strategic issue with the



highest score is the increased availability of raw materials and supporting materials which are still lacking. This strategic issue needs to get priority, because it takes time to implement it. Meanwhile, the issue that gets the lowest score is the issue that is most likely to be done in the near future, namely focusing on product differentiation to be able to compete with other batik.

Keywords: Strategy, SWOT Analysis & Litmus Test.

SS017: The Effect of Entrepreneurial Marketing Methods and Marketing Intelligence on SME Sales Performance in Medan City

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The purpose of this study was to determine the effect of entrepreneurial marketing methods and market intelligence on SME Sales Performance in Medan City. This type of research is quantitative descriptive and the nature of the research is explanatory. The number of samples is 39 respondents who has small business, and the type of sample used is total sampling / census. The data analytical tool used is multiple linear regressions. Data collection techniques are done through interviews, questionnaires, and observations. The results showed that the entrepreneurial marketing methods and market intelligence simultaneously and partially affected on SME sales performance in Medan city and the dominant factor affected on sales performance was the entrepreneurial marketing methods.

Keywords: Marketing, Entrepreneurship, Methods, Marketing Intelligence, Sales & Performance

SS018: Effectiveness of Internal Audit on State Polytechnic in Indonesia

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The effectiveness of internal audit in an organization is needed to be able to achieve organizational goals and help to detect fraud. Fraud can be minimized by effective internal control. In fact there are still many weaknesses in internal control found in government agencies, as well as in universities. This study aims to determine how the effectiveness of internal auditing in the entire Indonesian State Polytechnic. The population in this study was all auditors of the Internal Control Unit at the State Polytechnic throughout Indonesia of 250 people. Questionnaires were distributed using Google forms. From the Google form distribution of 51 people who filled out the questionnaire perfectly and could be processed.



The respondents of this study are the head of SPI, and the examiner (internal auditor). Testing is done by descriptive analysis. The results of this study indicate that the effectiveness of internal audit at the State Polytechnic in Indonesia still needs to be improved in terms of audit services, especially in terms of improving the process of risk management, control and governance. In addition, auditors in carrying out audits are still not entirely based on internal audit standards and internal auditors are still not fully ensuring that management has set criteria to be used as an assessment tool in conducting evaluations and has not fully cooperated with management to create evaluation criteria. Follow-up and implementation of the recommendations given by the auditor have not been maximized. Likewise, the external auditor has not yet fully evaluated the internal audit report and used it as a reference in the examination.

Keywords: Top Management Support, Internal Auditor Competence, Internal Audit Effectiveness

SS019: Detection of Financial Statements Fraud with Fraud Triangle Analysis on the Consumerfoods Industry in Indonesia Exchange

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Financial statements are an important tool for information users in making decisions, but in reality there is a lot of fraud in the financial statements so that the information presented in the financial statements does not reflect the real situation. This study aims to determine the detection of financial statement fraud by fraud triangle analysis. Pressure is measured by financial stability, external pressure, personal financial needs, and financial targets, while opportunities are measured by the nature of the industry, ineffective oversight, and rationalization are measured by changes in KAP. The study was conducted on consumer goods industry companies listed on the Indonesian stock exchange. Hypothesis testing uses multiple regression analysis, with SPSS software. The results of this study indicate that financial stability, external pressures, individual needs, financial targets, nature and ineffective control do not affect financial statement fraud, while rationalization affects financial statement fraud.

Keywords: Financial Statement Fraud, Pressure, Opportunity & Rationalization



SS020: Effectiveness of Internal Audit in Higher Education Services (L2DIKTI) Institutions in Indonesia

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Listiorini

Fraud in an organization is very difficult to eliminate, but can be prevented and minimized. One way to prevent fraud is to have an effective internal audit department. An effective internal audit department will be able to monitor the course of activities within an organization whether running according to established procedures and will ultimately increase the effectiveness of internal control. In fact, cheating is still common in local governments, state-owned enterprises and universities. The purpose of this study was to determine the effectiveness of internal audits at Higher Education Service Institutions (LLDIKTI) throughout Indonesia. Data collection is done by distributing questionnaires using Google form. The population is 84 internal auditors from 14 Regional Institutions of Higher Education Services (L2Dikti) throughout Indonesia. The respondents were internal auditors consisting of the SPI head, team leader and members of the examiner. Questionnaires were answered in full and could be processed as many as 31 questionnaires. Testing is done using descriptive analysis. The results of this study indicate that the effectiveness of internal audit in LLDIKTI throughout Indonesia has been effective, this can be seen from the many contributions of the internal audit department to the organization, the auditor who carries out the documentation of the plans for each audit assignment, communicates information relating to planning, implementation and reporting of audits to the auditee, communicating audit findings and recommendations to the auditee, monitoring follow-up of recommendations and communicating with authorized officials of the unit examined in relation to audit improvements and findings and documenting them in the inspection working paper. Management also appreciates the input and contributions made by the internal auditor at each meeting. In addition, there are very few complaints from the auditee for internal auditors while carrying out their work. However, the internal audit has not fully performed systematic services in terms of risk management and corporate governance improvement.

Keywords: Internal Audit Effectiveness, Audit Findings & Follow-Up



SS021: The Role of Top Management Support and Internal Auditor Competence in Improving the Effectiveness of Internal Audit Case Study in West Nias District

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Weaknesses in the internal control system can lead to non-implementation of government work plans, government activities become not transparent and accountable so that it can cause state losses. The weaknesses of internal control that occur in many governments indicate that the internal control system is still weak in local governments. One effort that can be done to improve the effectiveness of supervision and internal control is the existence of an effective internal audit. The purpose of this study is to determine the role of top management support and internal auditor competence in improving the effectiveness of internal audit. This research uses descriptive quantitative method. Respondents in this study were the head of the inspectorate, the auditor and the head of the service in the West Nias Regency Inspectorate. Data collection method used is to ask closed questions using a questionnaire. Analysis using descriptive analysis. The results of this study indicate that the level of competence of internal auditors has been good, but top management support still needs to be maximized, where top management has not been fully involved in the audit plan, and has not fully followed up on recommendations made by internal auditors. In addition, top management has not fully supported the provision of budgets for the implementation of the internal audit process and the provision of training facilities and the development of competencies and skills of internal auditors. These factors can cause the ineffectiveness of internal audit activities; there are repeated findings due to the low follow-up to the recommendations given.

Keywords: Effectiveness of Internal Audit, Internal Control, Top Management Support, Internal Auditor Competence

SS022: Detection of Financial Statement Fraud with Fraud Triangle Analysis in Lq45 Company in Indonesia Stock Exchange

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Financial Statement Fraud is a deliberate action taken by management by manipulating the value of financial statements to mislead users of financial statements (Kartika et. Al., 2017). The information on the financial statements should describe the actual condition and financial performance of the company and not contain information that is misleading to the user, but in reality, there are still many financial statements that do not inform the actual financial condition of the company. This study aims to determine the detection of financial



statement fraud by fraud triangle analysis. Pressure is measured by financial stability, external pressure, personal financial needs, and financial targets, while opportunities are measured by the nature of the industry, ineffective oversight, and rationalization are measured by changes in Public Accountant Office. The study was conducted on LQ45 companies listed on the Indonesian stock exchange. Hypothesis testing uses regression analysis, with SPSS software. The results showed that the financial stability variable which is proxied by changes in assets (ACHANGE) affects the financial statement fraud while other variables do not affect the financial statement fraud.

Keywords: Pressures, Opportunities, Rationalization & Financial Reporting Fraud

SS023: Academic Fraud Behavior of Accounting Students at State Universities on Sumatera

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Dina Arfianti Siregar & Cut Nizma

Students who behave honestly are expected to become a generation of people who are reliable and dignified. In fact, not all students have honest behavior, and there are still student behavior that is not in accordance with applicable ethics and regulations. In Indonesia, academic fraud also occurs both by students and lecturers/teachers and even prospective professors. The purpose of this study is to find out how academic cheating is committed by students caused by pressure, opportunity and rationalization. The population was all accounting students at state universities on the island of Sumatra, while the sample was accounting students in semester 7. Data collection was carried out using google forms, questionnaires were returned and complete as many as 127. This study used descriptive analysis. The results showed that the level of academic cheating behavior of accounting students at the State University on the island of Sumatra was low, this shows that students on average did both personal and group assignments well and rarely took quotations from other people's writings without including the author's name, at the time of implementation exams, the average student rarely cheats. Students are quite depressed by the assignments given by the lecturers quite a lot and it is quite difficult, the graduation standard that must be achieved is quite high, this causes students to continue learning to get a graduation standard. Students have enough opportunities to commit academic cheating, this is due to checking plagiarism on student assignments not yet fully adequate, lecturers have not completely changed the pattern of student assignments in different groups, so there is a possibility or opportunity to copy paste the results of other groups' work, the low level of prevention done by the lecturer on cheating done at the time of the test, and students are in an environment that is quite cheating when teaching and learning activities. Besides that students feel cheating behavior is something that naturally occurs among students to get good achievements, or meet graduation standards.



Keywords: Academic Fraud Behavior, Pressure, Opportunity

SS024: The Relevance of Using Accounting Information to Increase the Small Medium Enterprise Performance in Indonesia

Deliana

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Financial statements are information that can be used as a tool for decision making for information users. The use of accounting information will increase if the business owner knows the need for that information in making business decisions. Financial statement information has an important role to achieve business success. The main obstacle that is often experienced by SMEs is capital, many government policies to facilitate special loans to SMEs, but many SMEs are unable to touch the offer because SMEs have not been able to compile financial reports properly. The purpose of this study is to find out how SMEs' knowledge about accounting information can improve SME performance and what obstacles SMEs face in Indonesia in improving performance. The research method is qualitative. Data collection was carried out by in-depth interviews and focus group discussions (FGD), which included informants as SME actors, Cooperatives and SME agencies, and SME experts. Data analysis was performed by qualitative analysis, while the analysis phase was done by analyzing data collection, data reduction, data display, and conclusion.

Keywords: Accounting Information, Decision Making & SME Performance

SS026: Strategic Capacity Building Programs of the Involvement of TVET Graduates in Business after Graduation: Comparative Study between Malaysia and Indonesia

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It has been an overwhelming alert from the educational point of view to embark on effort in nurturing business and entrepreneurship talent amongst the students, in the essence of producing more self-employed or business graduates. This scenario has been extensively discussed and implemented by numerous educational institution at various levels, including the institutions that focus on providing training for skills workforces, namely TVET institutions. Thus, the objective of this study is to identify the capacity building programs that strengthen and inhibit TVET graduates involvement in business as their job after graduation. It focuses on understanding the factors by which TVET graduates obtain,



improve and retain the knowledge and skills to run their business successfully, as well as exploring on the obstacles that demotivate the graduates to get involve in doing business as their earning for their life. This is the qualitative study that used structured interview technique to collect data from TVET graduates in Malaysia and Indonesia. Five respondents from Malaysia and five respondents from Indonesia have been interviewed and findings were being recorded digitally. The respondents are TVET graduates who are currently doing their own business. Findings exhibit that inner self-motivation becomes the core strength for them to get involve in doing own business. Other factors such as family and friends support, own and friends experience, continuous learning from short courses, seminars and online courses, as well as formal learning on entrepreneurship taught at their previous institutions develop their self-strength and confident for graduate to run a business. Apart from that, the informal learning seems to contribute higher impact in building entrepreneurship capacity. The findings provide beneficial insights for both countries, particularly for Polytechnic Medan and Polytechnic Nilai the related TVET institution formulating the strategic business and entrepreneurship capacity building programs.

Keywords: Capacity Building, Entrepreneurship, TVET, Education and Training & Structured Interview

SS027: Impact of Logistics Performance on National Income: Case Studies of Indonesia and Malaysia

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The Logistics Performance Index (LPI) is a measurement of a country's connection to the international world. No country in the world can stand up without cooperating with other countries, specifically meeting the economic needs of their people. The better a country is connected with other countries, the better the country's trade performance, and the better the trade performance of a country, the better the income of the people of that country. This study aims to compare how 1) describe the LPI of Indonesia and Malaysia, and 2) estimate the effect of LPI on national income in the two countries. This study used time series data 2007 - 2018. The result showed that the LPI Indonesia and Malaysia are increasing every year, and there is a positive effect of LPI on GDP in Indonesia and Malaysia.

Keywords: Logistic Performance Index, Gross Domestic Products, Indonesia & Malaysia



SS028: The Role of Sustainable Tourism Development on Tourist Satisfaction and Revisit Intention among Local Tourist in Malaysia

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Tourism industry is a vibrant and competitive industry recently. These industries are getting important in order to boost up the economy of the country as well as increase the popularity and awareness from the publicity. Traveling is the perfect entertainment for a person of any age in modern lifestyles. People will travel to the destination that provide a facilities and experience as a tourist. Note that sustainable tourism and revisit intention is a vital research issue in tourism industry. Despite the considerable number of research on revisit intention, it remains unclear why people come again and does sustainable tourism influence the visitor's behaviour. Therefore, this assessed the visitor's behaviour literature gap by focusing on the relationship between sustainable tourism and revisit intention from the customer's perspective. The survey was distributed to the local tourist. A total of 202 respondents from Seremban, Malaysia was involved. The data was analyse using partial least square structural equation modelling. This study identifies that economic benefit, sustainable tourism and user generated content positively influence tourist satisfaction. Furthermore, tourist satisfaction significantly influence revisit intention which reveals the current behaviour of local tourist. Analysis from the study shows that the tourist will revisit and recommend Negeri Sembilan as a holiday destination.

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

SS029: Enhancement of Zakat Institutions through Zakat Management of Asnaf Gharimin: Case Study in Malaysia and Indonesia

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Dewi Maharah Mohd Walid & Suraya Abd Warif

Malaysia and Indonesia are among the countries dominated by Muslim population, hence there is a need to fully utilise and strengthen their zakat institutions. Thereafter, zakat institution plays an important role to assist the Muslim indebted groups that are categorized as *gharimin asnaf*. *Gharimin asnaf* needs to be given serious attention to since indebted cases are found to increase each year. Unfortunately, studies on *gharimin* group in Malaysia and Indonesia are still far behind compared to studies on *miskin* and *fakir* group of asnaf. The purpose of this study is to investigate the differences in terms of definition and criteria of *gharimin asnaf* between Malaysia and Indonesia. At the same time, this study intends to examine the differences of zakat distribution management to *gharimin* in both zakat institutions in Malaysia and Indonesia. The comparison in this study is made between



two zakat institutions in both countries which are Lembaga Zakat Selangor (LZS) represents Malaysia, and Badan Amil Zakat Nasional (BAZNAS) represents Indonesia. The data are collected through in-depth interviews with several key persons in both zakat institutions mentioned above. On top of that, this study also reviews secondary data such as annual report and relevant documents extracted from the zakat institution official website. The result of the study shows that there is no difference between the definition of *gharimin asnaf* for both countries. However, there is slight dissimilarity on the criteria specified by both zakat institutions. An obvious comparison is that LZS specifies *gharimin* as one of the zakat recipients, whereas BAZNAS recognises *gharimin* as *fakir* and *miskin* group of zakat recipients. Other than that, both LZS and BAZNAS are found to exhibit their credibility in managing zakat distribution to *gharimin* with structured procedure. At the same time, this study also explores the practices in both zakat institutions and appropriate suggestions are made accordingly.

Keywords: Zakat, Gharimin & Zakat Distribution Management

SS030: Problems and Obstacles Faced By SMES: a Comparative Study between Malaysia and Indonesia

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Mazura Mansor, Isdawati Ismail, Dina Arfianti Siregar & M. Rikwan E.S. Manik

This study aims to determine problems and challenges of small and medium enterprises competitiveness (products and companies) in Malaysia and Indonesia. The significance of the study will add the knowledge about the current issues relating with SMEs in Malaysia and Indonesia. This type of research is qualitative descriptive studies with the type of data used are primary and secondary data. Data collection techniques were carried out through observation, in-depth interviews and focus group discussions with SME entrepreneurs, the Industry and Trade Office, the North Sumatra Provincial National Crafts Council, and academics / experts in the field of entrepreneurship in Indonesia and Malaysia. Data analysis technique uses interactive data analysis through data collection, data reduction, data presentation and conclusion. The results showed that based on product competitiveness consist of export market share per year, export growth volume per year, production growth rate per year, both Indonesia and Malaysia still need an increase in export volume each year, because market demand is relatively high where it is related to product innovation and creativity. The company competitiveness is determined by the expertise or education level of workers, the expertise of employers, and the availability of capital, good organizational and management systems, the availability of technology and information, profits, standardized products, the value of sales turnover. To be able to gain this competitiveness, the role of the Indonesian government needs to be continuously improved, such as eliminating income tax, providing access to capital at low interest, support infrastructure, provide training for good business management. In



Malaysia, Bank Negara Malaysia is very active in supporting in the field of finance and marketing. There are many institutions in Malaysia that help in the development of SMEs in terms of capital, marketing and production.

Keywords: Small Medium Enterprise, Problems and Challenges, Product Competitiveness, Company Competitiveness & Government

SS031: Development of Malaysian and Indonesian Fintech Products: Malaysian and Indonesian Landscape Studies

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Penelitian ini bertujuan untuk menganalisis perkembangan fintech di Indonesia dan negara mitra, dengan mengkaji lanskap perkembangan fintech di kedua negara. Dari penelitian ini diharapkan didapat gambaran dan identifikasi yang detail mengenai perkembangan dan berbagai potensi yang ada untuk pengembangan fintech ke depannya di kedua negara. Untuk jangka pendek, hasil penelitian ini dapat dijadikan sebagai bahan dalam penyusunan materi perkuliahan di bidang keuangan, lembaga keuangan, dan teknologi perbankan. Selain itu dapat juga sebagai bahan masukan bagi regulator dan pelaku usaha di dalam menetapkan kebijakan dan strategi pengembangan fintech di Indonesia. Metode penelitian yang digunakan adalah metode penelitian kuantitatif kualitatif, di mana data akan diperoleh terutama dari OJK dan Asosiasi Pengusaha Fintech serta beberapa perusahaan terkait, dengan melakukan wawancara terbuka, serta dari berbagai sumber skunder yaitu dari berbagai website yang relevan.

Kata kunci: Lanskap, Fintech, Indonesia & Malaysia

SS032: Factors Affecting the Growth of Logistic Industry in Malaysia

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The present paper focus on studying the factors affecting the growth of the Logistics industry in Malaysia. Logistics is the process of planning and executing the efficient transportation and storage of goods from the point of origin to the point of consumption. In general, it refers to the inbound and outbound flow and storage of goods, services and information within and between organizations (Gundlach et al, 2006). The goal of logistics is to meet customer requirements in a timely, cost-effective manner. It is part of the supply chain process that plans, implements and controls the efficient and smooth flow and



storage efficient and smooth flow and storage of goods, services and related information to meet customers' requirements, from the point of origin to the point of consumption (Council of Supply Chain Management Professionals, 2019). With globalization and international business took place, the logistics industries become essential in terms of providing efficient services at the bottommost cost for their clients. Presently, the Malaysian logistics industry comprises largely of single specialized service providers such as freight forwarders, transport companies and warehousing companies (Department of Skills Development, Ministry of Human Resources Malaysia, 2010). The business environment and internal futures will be further discussed in this paper which become our main research questions: i) The accessibility of government incentives towards the development of local logistics industries, ii) The impact of growth in e-commerce industries. Therefore, data resulting from secondary resources which collected from government agencies and non-government agencies which resulting over 25 published articles and abstracts were randomly selected to be analysed and used . It may directly or indirectly related to our research study. The reason for secondary data is to overcome the difficulties in obtaining confidential data, such as financial and budgeting from both government and private sectors. Despite of the growing in the logistics industry in Malaysia with government support and incentives, development in infrastructure as well as establishment of Digital Free Trade Zone (DFTZ), the enforcement of existing regulations needs improvement and also the adoption of the latest trends, or tools in technology should be elevated.

Keywords: Growth of Logistics, Government Incentives & e-Commerce Industries

SS033: The Development of Small, Medium Enterprises Competitiveness in Indonesia and Malaysia: a Comparative Study

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This study aims to determine the development of small and medium enterprises competitiveness (products and companies) in Indonesia and Malaysia. This type of research is qualitative descriptive studies with the type of data used are primary and secondary data. Data collection techniques were carried out through observation, in-depth interviews and focus group discussions with SME entrepreneurs, the Industry and Trade Office, the North Sumatra Provincial National Crafts Council, and academics / experts in the field of entrepreneurship in Indonesia and Malaysia. Data analysis technique uses interactive data analysis through data collection, data reduction, data presentation and conclusion. The results showed that based on product competitiveness consist of export market share per year, export growth volume per year, production growth rate per year, both Indonesia and Malaysia still need an increase in export volume each year, because market demand is relatively high where it is related to product innovation and creativity.



The company competitiveness is determined by the expertise or education level of workers, the expertise of employers, and the availability of capital, good organizational and management systems, the availability of technology and information, profits, standardized products, the value of sales turnover. To be able to gain this competitiveness, the role of the Indonesian government needs to be continuously improved, such as eliminating income tax, providing access to capital at low interest, support infrastructure, provide training for good business management. In Malaysia, Bank Negara Malaysia is very active in supporting in the field of finance and marketing. There are many institutions in Malaysia that help in the development of SMEs in terms of capital, marketing and production.

Keywords: Product Competitiveness, Company Competitiveness & Government

SS034: Design of Sharia Banking Practice Learning System for Improving Student Competence

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This research is about the Design of Sharia Banking Practice Learning System for Increasing Student Competence as a Human Resource that is conducted to produce a practice learning system for sharia banking students in sharia banking laboratory courses in the Department of Accounting, Polytechnic, Medan. This research uses the analytic decriftif method, with a qualitative approach to obtain information and collect the data needed. The results showed that after using the learning system of sharia banking practice based on a website, 86% of students were able to achieve better competence in practical activities. Service time can be made according to Standard Operating Procedures, which is a maximum of 1.5 minutes service time for cash deposit services through Teller, and a maximum service time of 2 minutes for transfer services, cash withdrawals, check to cash, and Giro through Teller.

Key Words: Learning System, Website Based & Islamic Banking



SS035: Role of Women in Empowering Sustained Economic Growth and Sustainable Development Throught Education on Poverty Reduction

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This research is about Role of Women in Empowering Sustained Economic Growth and Sustainable Development Throught Education on Poverty Reduction in Indonesia, especially at North Sumatera. This Research conducted to find out discovering the characteristics of women in Indonesia especially at North Sumatera. Who are able to provide a role in empowering people from poor environments through education to create the welfare of the community and to find the right model of community empowerment to reduce poverty through the role of women, especially in the field of education to achieve economic prosperity? This study uses analytic descriptive methods, with qualitative to obtain information and collect the data needed. The results of this study indicate that women who are able to make changes to the poor environment around their neighborhood and succeed to get out of poverty by inviting other women to get out of poverty are women who have persistent characteristics and never give up, have a high sense of responsibility towards the environment around him, have a high motivation to improve his life, have a leadership spirit and have a high value of religiosity, are able and able to establish communication with the surrounding environment, dare to utilize technology and communication networks in social relations.

Key Words: Helpless Woman, Out Of Poverty & Successful

SS036: Pengaruh Kompetensi Keusahawanan dan Kecenderungan Keusahawanan: Satu Kajian di Politeknik Nilai Negeri Sembilan dan Politeknik Medan

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Safaruddin, Nursiah, Nazri Idris & Kamisah Salikin

Kajian ini bertujuan untuk mengenalpasti kompetensi keusahawanan dan program pengajian dalam kalangan pelajar berdasarkan penglibatan pelajar dalam proses pembelajaran di dalam program-program di JP. Kajian ini adalah untuk meneliti kompetensi keusahawanan dan program pengajian terhadap kecenderungan keusahawanan pelajar. Objektif kajian adalah (1) Faktor Kompetensi berpengaruh pada minat berwirausaha bagi Mahasiswa, Objektif (2) Faktor Motivasi berpengaruh pada minat berwirausaha Objektif (3) Faktor Kompetensi dan Motivasi berpengaruh pada minat berwirausaha. Kumpulan yang terlibat terdiri daripada pelajar dari Politeknik Nilai dan Politeknik Medan seramai 300. Data yang dikumpulkan adalah melalui kaedah kajian



tinjauan iaitu soal selidik Sejumlah 293 responden daripada 300 populasi pelajar telah dikenalpasti melalui borang soal selidik yang diedarkan. Data-data yang diperoleh dianalisis secara peratusan dan kekerapan serta analisis deskriptif. Hasil kajian mendapati kompetensi keusahawanan yang mempengaruhi kecenderungan keusahawanan ialah kompetensi diri. Program pengajian juga turut mempengaruhi kecenderungan keusahawanan pelajar. Penemuan hasil kajian ini diharapkan dapat membantu pihak institusi menilai dan mengkaji semula aktiviti dalam proses pengajaran dan pembelajaran agar dapat menerapkan dan menggabungkan elemen pendidikan keusahawanan dalam pengajaran dan pembelajaran yang dijalankan.

SS037: Identification of the Basic Needs Of Farmers in Developing Businesses through the Financing of Islamic Microfinance Institutions

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Anriza Witi Nasution & Tuti Kurnia

This research is about identifying the basic needs of farmers, especially farmers in Langkat Regency, North Sumatra in developing their business to obtain financing from the Sharia Microfinance Institution (LKMS). This research was conducted to provide solutions to problems faced by farmers in Langkat Regency, North Sumatra, especially in obtaining access to capital through financial institutions. The condition of breeders included in the non-bankable criteria, and breeders generally do not yet have the 5 C criteria (character, capacity, collateral, capital and condition of economic) which are the main conditions for channeling financing. One way to provide solutions to these problems is to provide easy access for farmers to obtain financing from LKMS with the most appropriate financing schemes and models for the business activities of farmers. To solve the problem in this study used research methods with qualitative and survey approaches. The results of the study show that the needs of each farmer differ according to their characteristics. Farmers in the category of livestock keepers, require relatively small capital and are used for operational safeguards only, for medium breeders who already have 15-30 cattle have greater capital requirements for business operations and business expansion, while large breeders with availability livestock > 30 individuals, require large capital, generally have business records, and have large capital access needs at the Sharia Microfinance Institution.



SS038: Application of Sharia Principles as the Formation of Social Responsibility of Insani Resources

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This research is about the Application of Sharia Principles as Formers of Social Generosity of Human Resources conducted to Determine the Potential of Social Charity of Human Resources at Polmed, Finding the Sharia Principles that are most dominant in forming Social Generosity of Human Resources at Polmed as well as Measuring the Success of Generosity Character Models through programs "INShoP" as a model to form the Social Generosity of Human Resources at Polmed. This research uses analytic decrifting method, with quantitative approach with factor analysis method and qualitative approach to obtain information and collect data needed. The results of this study indicate that students who apply Islamic principles in self-activity have a tendency to have a higher social life and a high sense of concern for their environment and are happy to help others and feel happy if they succeed in helping and alleviating the difficulties of others. Students who apply Islamic principles have a high philanthropic spirit as well.

Keywords: Sharia Principles, Social Generosity & Philanthropic Soul

SS040: Pendesainan Sistem Informasi Akuntansi, Pengendalian Internal dan Tata Kelola untuk Badan Usaha Milik Desa

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Penelitian ini bertujuan untuk menghasilkan desain sistem informasi akuntansi, tata kelola serta pengendalian internal yang sesuai untuk diterapkan di Badan Usaha Milik Desa (BUMDes), sebagai *business entity* yang memiliki karakteristik tersendiri. Pengimplementasian SIA, tata kelola serta pengendalian internal yang baik diharapkan dapat meningkatkan kinerja BUMDes khususnya di Sumatera Utara, dan BUMDes-BUMDes tersebut dapat memberikan kontribusi untuk meningkatkan perekonomian di desanya. Hasil penelitian ini akan memberikan kontribusi bagi bidang ilmu akuntansi khususnya mata kuliah sistem informasi akuntansi dan tata kelola organisasi serta bidang ilmu ekonomi mikro dan makro. Metode pengumpulan data akan dilakukan dengan metode observasi dan *deep interview*, di mana responden dipilih menggunakan *snowball sampling method*. Tempat penelitian yang dipilih adalah BUMDes Tirta Mandiri Desa Ponggok, sebagai salah satu BUMNDes terbaik dengan omset yang terbesar. Dari hasil penelitian teridentifikasi bahwa BUMDes Tirta Mandiri telah menerapkan Tata Kelola yang cukup baik. Untuk sistem informasi dan pengendalian, masih dibutuhkan beberapa perbaikan.



Kata kunci: BUMDes, SIA, Tata Kelola & Pengendalian

SS041: Strengthening of BAZNAS Institution in the Management of Zakat for Asnaf Gharimin Indonesia and Malaysia Comparative Study

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This research is about the Strengthening of BAZNAS Institution in the management of zakat for Asnaf Gharimin Indonesia and Malaysia Comparative Study, which is conducted to find out and find methods of managing Asnaf Gharimin zakat in Indonesia and Malaysia. This research uses analyses descriptive method, with qualitative to obtain information and collect necessary data. The findings of this study are that BAZNAS as an official Indonesian government institution has made a zakat distribution program in general but has not been specifically intended for asnaf gharimin, as well as in practice in the field BAZNAS has made a zakat assistance budget for asnaf gharim who begs to be paid in debt such as debt arrears as gharimin, as well as in practice in the field BAZNAS has made a zakat assistance budget for asnaf gharim who begged to be paid off debts such as debt arrears in school fees, hospital debt, debt for rent and travelers who claimed doesn't have the cost to to return to their village. Gharim who get alms assistance are those who have fulfilled administrative requirements. The donation is in the form of Qardhul hasan which gharim no longer returns to Baznas. With the completion of this research, the best model in the management of Asnaf Gharimin was found as a study material obtained from the Management of Asnaf Gharimin in Indonesia and Malaysia.

Keywords: Zakat Institution, Asnaf & Al-Gharimin

SS042: The Analysis of Transaction Data Processing Automation in Indonesia and Malaysia SME's: Comparative Study of SME's In North Sumatera and Kelantan State

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Penelitian ini bertujuan untuk menganalisis pengimplementasian otomatisasi pemrosesan data transaksi pada UMKM di Sumatera Utara dan Negeri Kelantan. Dari hasil penelitian ini diharapkan dapat diidentifikasi permasalahan-permasalahan yang dihadapi oleh UMKM dalam pengimplementasian TI untuk penyusunan laporan keuangannya, dan mencari solusi atas permasalahan-permasalahan tersebut. Tujuan jangka pendek dari penelitian ini



adalah dapat membantu UMKM-UMKM yang ada di Sumatera Utara dan Negeri Kelantan khususnya dalam rangka peningkatan akuntabilitas laporan keuangan mereka, sedangkan untuk jangka panjang adalah semakin berkembangnya UMKM-UMKM tersebut karena akses mereka terhadap sumber pinjaman dan pembiayaan meningkat. Metode penelitian yang digunakan adalah metode penelitian kualitatif, di mana akan diteliti secara mendalam UMKM yang dipilih sebagai sampel penelitian sehubungan dengan pengimplementasian otomatisasi dalam pemrosesan data transaksi. Data didapat dengan metode observasi dan wawancara terbuka.

Kata Kunci: Automatisasi, Data, Transaksi, UMKM

SS044: How to Get the Ideal Non Performing Finance? (Problems Analisis Using ANP: Case of North Sumatra BPRS)

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One of the problems faced by the BPRS is the high percentage of Non-Performing Finance (NPF). This study aims to determine the priority issues that mutually affect in the components and elements of the model, by focusing on internal and external factors problem, using the qualitative-quantitative approach method of ANP; through in-depth interviews with two expertspeakers groups, FGD with 7 expert participans and SMEs practitioners, then perform an in-deep deployment questionnaire. This study found that internal problems of the highest priority are the BPRS performance problems, marketing problems, profit margin problems, and the other of lowest priority is the issue of collateral. Performance issues of the highest priority in BPRS is a matter of current financing, non-performing performance, and the problem of financing. Most priority is marketing problems of SMEs associated problems, the problem of the type of financing, the size of the company, the funding, and problem-based group run time. Problems most priority margin is the ideal issue and the issue of high margin. Collateral's most priority problem is the problem of collateral provided by the financing then not appropriate collateral financing. Priority's external problem is the problem of competitors, the problem of macro-economic conditions and the government's problem. Priority competitor problem is problem of superior products and superior margin problem. Priority issue is a matter of government regulatory and policy issues. Priority Issues Macro-Economic Conditions is the problem of inflation and GDP issues.

Keywords: NPF Ideal, Priority Problems & ANP



SS045: Solution and Strategy Modeling for Improving SMEs Performance: The Case of North Sumatera BDSP Partners

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This study aims to find the priorities of the Business Assistance solutions and strategies in Improving the Performance of MSEs. Using ANP Method, a pair comparison questionnaire was distributed to 7 participants, it was found that the most prioritized internal solution was the MSME HR solution with the main elements increasing competence then motivation, followed by performance solutions with elements increasing sales turnover then increasing profits, marketing solutions with elements increasing products , then adjusting prices and increasing promotions and to increase distribution, and capital solutions with elements of increasing their own capital and reducing outside capital. The most priority external solution is a government solution with an element of increasing policy then training, then ABDSI mentoring with an element of enhancing ABDSI HR, then increasing material and the frequency of mentoring, the latter being a BUMN solution with an element of enhancing partnership, followed by increasing capital assistance.

Keywords: Business Assistance solutions and strategies, MSEs, ANP Method

SS046: MSMEs Marketing Strategies in Increasing Competitiveness in Modern Retail Markets Case Studies Medan City Indonesia and Kota Bharu, Malaysia

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The purposes of this research are: (1) to analyze the condition of MSMEs in surviving the modern retail market; (2) to analyze consumers' behavior in buying MSMEs' products in the modern retail market and (3) to develop a new marketing strategy in surviving at the modern retail market. The condition of MSMEs analyses using a) consumers' behavior, and b) marketing mix, then estimated in consumers' satisfaction using important performance analysis, last process consumers' satisfaction estimation result adding with a) and b) become internal factors to be analyzed using Internal factor evaluation (IFE), c) MSMEs internal and external factors used to estimate consumers' satisfaction which analyzed with Importance Performance Analysis (IPA), last process consumers' satisfaction estimation result adding with MSMEs internal and external factors to be analyzed using external factor evaluation (EFE). After we get the result of IFE, we estimate the MSMEs position and try to make a new strategy using Strength, Weakness, Opportunity, and threat (SWOT analysis). The internal and external factors to be considered to improve for MSMEs in Medan and Kota Bharu are: 1) making partnership with large enterprises 2) increasing



sales by increasing product quality, 3) using new technologies to expand market, The result from *Importance Performance Analysis* (IPA) to the MSMEs in Medan and Kota Bharu showed that they are in the first quadrant which means the importance is very high, good performance, and have good consumers' satisfaction. Internal Factor Evaluation (IFE) matrix showed a total score of 2,200, and External Factor Evaluation (EFE) matrix showed a total score of 2,350, so the position is in cell IV, the new strategy to develop is market penetration and product development.

Keywords: MSMEs, Marketing Strategy & Competitive

SS047: Factors Affecting the Growth of Logistics Industry in Malaysia

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The present paper focus on studying the factors affecting the growth of the Logistics industry in Malaysia. Logistics is the process of planning and executing the efficient transportation and storage of goods from the point of origin to the point of consumption. In general, it refers to the inbound and outbound flow and storage of goods, services and information within and between organizations (Gundlach et al, 2006). The goal of logistics is to meet customer requirements in a timely, cost-effective manner. It is part of the supply chain process that plans, implements and controls the efficient and smooth flow and storage efficient and smooth flow and storage of goods, services and related information to meet customers' requirements, from the point of origin to the point of consumption (Council of Supply Chain Management Professionals, 2019). With globalization and international business took place, the logistics industries become essential in terms of providing efficient services at the bottommost cost for their clients. Presently, the Malaysian logistics industry comprises largely of single specialized service providers such as freight forwarders, transport companies and warehousing companies (Department of Skills Development, Ministry of Human Resources Malaysia, 2010). The business environment and internal futures will be further discussed in this paper which become our main research questions: i) The accessibility of government incentives towards the development of local logistics industries, ii) The impact of growth in e-commerce industries. Therefore, data resulting from secondary resources which collected from government agencies and non-government agencies which resulting over 25 published articles and abstracts were randomly selected to be analysed and used . It may directly or indirectly relate to our research study. The reason for secondary data is to overcome the difficulties in obtaining confidential data, such as financial and budgeting from both government and private sectors. Despite of the growing in the logistics industry in Malaysia with government support and incentives, development in infrastructure as well as establishment of Digital Free Trade Zone (DFTZ), the enforcement of existing regulations



needs improvement and also the adoption of the latest trends, or tools in technology should be elevated.

Keywords: Growth of Logistics, Government Incentives, eCommerce Industries

SS050: Impak Pertimbangan Moral dan Kecekapan Moral dalam Kalangan Pentadbir Akademik di Institusi Pengajian Tinggi Awam, Malaysia

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Sepanjang perkhidmatan, pentadbir akademik kerap berhadapan dengan isu-isu moral dalam kalangan pelajar dan pegawai di peringkat fakulti dan universiti. Semasa melaksanakan tugas pentadbiran, mereka perlu menggunakan banyak pertimbangan etika dalam membuat keputusan supaya berlaku keadilan. Kajian ini bertujuan untuk mengenal pasti: a) Hubungan Antara Kecekapan Moral Dengan Tempoh Pekhidmatan Sebagai Pentadbir Akademik dan Tempoh Perkhidmatan; b) Hubungan Antara Kecekapan Moral Dengan Bidang Pengajian dan Tahap Pengajian; c) Hubungan Antara Kecekapan Moral Dengan Pertimbangan Moral. Hasil kajian menunjukkan wujud hubungan yang signifikan antara tahap pendidikan, tempoh menjawat sebagai pentadbir akademik, dan skor p, dan skor c. Dalam hubungan antara pentadbir akademik dan pembolehubah-pembolehubah di atas, didapati jawatan sebagai dekan lebih menyerlah berbanding timbalan dekan. Mungkin pentadbir akademik memerlukan satu kerangka latihan yang boleh membina dan mempertingkatkan struktur kognitif moral mereka terutama daripada elemen kecekapan moral dan pertimbangan moral.

Kata Kunci: Pertimbangan Moral dan Kecekapan Moral

SS051: Potensi Kawasan Batu Buruk sebagai Pusat Keusahawanan Pelancongan di Negeri Terengganu

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Tujuan kajian ini dilakukan adalah untuk mengkaji “Potensi Kawasan Batu Burok sebagai Pusat Keusahawanan Pelancongan di Negeri Terengganu”. Kajian ini dibuat untuk mendapatkan maklum balas daripada para pengunjung dan para pelancong yang berkunjung dan melancong ke kawasan Batu Burok. Seramai 108 orang responden telah dipilih secara rawak daripada keseluruhan pengunjung dan pelancong yang datang ke kawasan Batu Burok. Kajian kami menggunakan metodologi dari sumber primer dan



sekunder. Bagi memenuhi objektif kajian, borang kaji selidik telah diedarkan kepada responden untuk memperolehi maklumat kajian. Daripada dapatan kajian menunjukkan cara penyelesaian iaitu menggunakan borang kaji selidik. Proses penyelidikan yang kami jalankan adalah untuk mendapatkan kebenaran tentang kawasan Batu Burok. Setelah itu, untuk mendapatkan keputusan yang baik, kumpulan kami memanipulasikan data-data yang diperolehi kepada analisis data terkumpul yang menunjukkan bahawa para pengunjung dan para pelancong amat bersetuju menjadikan kawasan Batu Burok sebagai pusat keusahawanan pelancongan mereka kerana keindahan kawasan Batu Burok memberi tarikan kepada mereka.

Kata Kunci: Potensi, Kawasan Batu Burok, Keusahawanan & Pelancongan

SS052: Model of Distribution of Zakat Funds for Fishermen through IMFS

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This study aims to establish a model of distribution of zakat funds for labor fishermen who are in the mustahik category. The study was conducted with a qualitative approach using the Miles and Huberman analysis method. The object of research is the zakat institution that distributes zakat funds to fishermen. The results showed that the DiZaN model (Distribution of Zakat for Fishermen is a model formed for the distribution of zakat funds for fishermen. DiZaN is the distribution of productive zakat that focuses on increasing the income of labor fishermen through improving the ability of fishermen's technology, increasing access to capital for ownership of fishermen's tools and equipment and improved skills in crop management, and the DiZaN model is also a model of synergy and cooperation between zakat institutions and IMFs

Keywords: Zakat, Fishermen, Zakat Management Institution & IMFs

SS053: Impak Dimensi Produk Pelancongan Terhadap Imej Resort Kolam Air Panas Sungai Klah, Sungkai, Perak sebagai Destinasi Pelancongan

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Nurull Hayati Latif

Objektif kajian ini adalah untuk menilai dimensi produk pelancongan keatas imej destinasi dikalangan pelancong tempatan ke Resort Kolam Air Panas Sungai Klah Sungkai, Perak. Dimensi produk pelancongan mengandungi sumber maklumat, kos perbelanjaan, fasiliti,



tarikan, dan hospitaliti terhadap imej destinasi Resort ini. Seramai 207 responden tempatan yang telah dipilih secara rawak mudah. Data yang dikutip telah dianalisis dan telah menunjukkan bahawa wujudnya korilasi yang signifikan terhadap imej destinasi Resort ini. Kaedah regrasi berganda telah menunjukkan bahawa kualiti produk pelancongan di Resort Kolam Air Panas ini mempengaruhi 59.2% variance.

Kata Kunci: Produk Pelancongan, Regrasi Berganda

SS054: The Analysis Factors of Human Error in Warehouse Management

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In this century, online shopping has become more common. It is even a trend. Without having to go out, shop just at your fingertips. With very effective logistics, it is very helpful in this shopping. With high demand, the warehouse center is very important. Warehouse management should always be effective and punctual. There is no room for error.

However, warehouses that lack manpower or labor and the lack of material handling equipment can cause all delays to customers. These two important factors are the handling of materials as well as the labor force greatly affecting this online purchase. Without effective handling of the material in the warehouse will result in delays in the processing of goods ordered by the customer. Therefore, manpower greatly affects the operation of the warehouse. The objective of this study was to identify the factors of human error in the warehouse and to recommend reasonable suggestions to distributors. The study was conducted by quantitative method and 50 sets of questionnaires were distributed to respondents working in logistics industry. Most respondents agree that repetitive work, fatigue and stress are factors contributing to human error in the warehouse. As a suggestion, the use of appropriate equipment such as light fork-lifts and hand-carts can help with issues that arise in relation to labor and labor factors in the warehouse. This will lead to some logistical shortcomings.

Keywords: Warehouse Management, Effective and Punctual, Logistics.

SS055: Hubungan antara Persekitaran Kerja Terhadap Prestasi Kerja dalam Kalangan Pensyarah Kolej Komuniti di Negeri Melaka.

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Persekitaran kerja merupakan elemen yang penting dalam melahirkan sebuah organisasi yang berkualiti dan pekerja yang mempunyai prestasi kerja pada landasan yang terbaik.



Justeru itu, kajian ini di laksanakan bertujuan bagi mengenalpasti hubungan persekitaran kerja bagi dimensi sokongan organisasi dan peluang mengamalkan pengetahuan terhadap prestasi kerja dalam kalangan pensyarah di enam buah Kolej Komuniti dalam negeri Melaka. Kajian ini adalah berbentuk kuantitatif dan menggunakan kaedah persempelan rawak mudah di mana borang soal selidik merupakan instrumen penting dalam mendapatkan data dan maklumat yang dikehendaki. Terdapat seramai 235 populasi pensyarah Kolej Komuniti Negeri Melaka yang terdiri daripada pensyarah bergred DH29 hingga DH54, namun begitu sebanyak 120 set soal soal selidik di analisa. Data-data yang dikumpul di analisa menggunakan perisian *Statistical Packages for Social Science (SPSS)* versi 22.0. Terdapat lima kaedah analisa yang di jalankan iaitu analisa demografi, analisa kebolehpercayaan, analisa deskriptif, analisa kolerasi Pearson dan akhir sekali analisa regresi berganda. Dalam kajian ini, terdapat dua hipotesis yang dibentuk dan hasil analisa mendapati bahawa hanya satu sahaja hipotesis disokong kerana mempunyai hubungan yang signifikan dan selebihnya adalah tidak disokong kerana melebihi paras signifikan yang digunakan. Persekitaran kerja merupakan aspek yang perlu dititikberatkan dalam melahirkan sebuah organisasi yang mampan dan berkesan. Hasil kajian di diharapkan boleh menjadi panduan dan rujukan bagi pihak pengurusan bagi melakukan pelan tindakan strategik terutamanya daripada segi dasar, program latihan dan sebagainya. Kesimpulannya, bagi melahirkan pensyarah yang berkualiti dengan prestasi kerja yang baik, penekanan terhadap aspek persekitaran kerja yang bersesuaian haruslah dititikberat dan di pandang serius.

Kata Kunci: Persekitaran Kerja, Kolej Komuniti & Prestasi Kerja

SS056: Islamic Values in Transformational Leadership

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Mohd Fuaad Fesul & Fardhila Syahira Salmi Nordin

Leadership and management must go hand in hand. They are not the same thing; but necessarily linked, and complementary. Management activities such as planning, organizing and controlling could be dormant cocoons until the leader triggers the power of motivation in people and guides them towards their goals. Research supports the premise that a transformational leaders influence follower behaviors through a process by which the leader appeals to followers' ideals and values. In Islam, leadership is a process of inspiring and coaching voluntary followers in an effort to achieve a clear and defined shared vision. This paper focuses on Islamic Values that are embedded in transformational leadership. Muslims have always understood that a righteous leader will be able to positively influence a society whereas an evil leader can destroy a society. In particular, much has been written about what is often called 'management from an Islamic perspective'. Islam integrates religion and the practice of management. Under Islamic theory of management, both individual Islamic belief as well as organizational management



operates under the same revealed rules and directives. Note that in this study there is only one variable will be tested to measure the impact of Islamic Values in transformational leadership on organization commitment among the students in Politeknik Nilai. Assuming that the other factors are constant during the research period, it will be possible to have positive correlation between the two variables. In addition, a correlational research can verify this association further.

Keywords: Islamic Values, Transformational Leadership & Organization Commitment

SS057: Impak Pertimbangan Moral dan Kecekapan Moral dalam Kalangan Pentadbir Akademik di Institusi Pengajian Tinggi Awam, Malaysia

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Kata Kunci: Pertimbangan Moral dan Kecekapan Moral



SS058: The Relationship between Knowledge, Values, Attitudes, Skills and Sustainable Practices towards the Practice of Water Conservation during Ablution: a Case Study at Al-Barokah Mosque Kampung Bukit Cherakah Jaya

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Syahid Irfan Yunus, Jaanavee Devi Sundaresan, Fatin Najihah Zainal Abidin, Zainah Othman & Azizi Mursidy Zainol Abidin

The need to conserve water when performing ablution is highly encouraged among Muslims. The prophet Muhammad pbuh stressed that it is important to save water even when performing ablution. It takes strong self-discipline for one to avoid leaving the tap running while taking ablution. This study investigates on the elements that make people to save water while taking ablution. When green indicators were posted in Kampung Bukit Cherakah Jaya's mosque, 17 cubic meters of water were saved for three consecutive months. Furthermore, the stickers managed to reduce 44% of water consumption for the month of October until December 2019. Therefore, this study aims to examine the relationship between knowledge, values, attitudes, skills and sustainable practices towards the practice of water conservation during performing ablution after the green stickers were posted. This quantitative approach was conducted by distributing 500 questionnaires to the Jemaah of the mosque. As a result, a Cronbach Alpha of 0.962 was attained which allowed further analysis. A factor analysis was employed to discern the relationship between the independent and dependent variables. A KMO value of 0.819 was accomplished and exceeding the recommended value of 0.6 for the Kaiser-Meyer-Okin. The Bartlett's Test of Sphericity reached statistical significant of 0.000, supporting the factorability of the correlation matrix. Only skills and sustainable practices showed significant relationship towards the practice of water conservation during ablution. In the future, similar studies should be conducted on other mosques with additional variables that contribute to the water saving attitudes.

Key Words: Ablution, Water Conservation, Sustainable Practices and Water Consumption.

SS059: Utilization of Digital Marketing Strategies amongst Small and Medium Enterprises in Kelantan, Malaysia

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Tengku Ahmad Badrul Shah Raja Hussin & Deliana

Small and medium scale enterprises face many challenges in sustaining their competitive advantage. With the current advancement of digital marketing strategies, these SMEs faced some pressure to utilize digital marketing in their business conduct, especially to reach



their target customer. This research had been carried out to examine the utilization of digital marketing strategies among SMEs in Kelantan, Malaysia. A total of 7 SMEs owners, in the food and textile industries, had been interviewed face-to-face using a semi-structured format. This research was aimed to uncover the constraints, challenges and problems faced by SMEs in implementing digital marketing strategies and opportunities gained by SMEs by using digital marketing strategies. All respondents expressed their utilization of digital marketing strategies with varied level of involvement. Established and profitable SMEs were found to utilize high level of digital marketing strategies, such as maintaining their own website, using social media marketing, hiring their own marketing experts and strategists and promoting their business using paid advertisement. Less profitable and less established SMEs use social media marketing such as whatsapp, Instagram and Facebook and they used free marketing tools to promote their products. This article also presented some suggestions for improvement that can be implemented by SMEs owners to increase their business sustainability.

Keywords: Small and Medium Scale Enterprises, Digital Marketing, Social Media Marketing & Marketing Tools.

SS060: Potensi Keusahawanan Makanan Tradisi Kuala Berang sebagai Produk Industri Desa

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Kuala Berang is a small town located in the Hulu Terengganu district which is well-known for its delicious variety of traditional foods that has always been a tourist attraction for locals and visitors alike. However, these days, traditional foods have become increasingly scarce because of the lack of heirs to this increasingly marginalized industry. As such, the study was undertaken as an initiative to continue to preserve the traditional food culture of the Kuala Berang community so that it can be preserved and enjoyed and passed on by future generations. The objective of this study was to explore the public's view of the potential of entrepreneurship of Kuala Berang traditional foods to be promoted as a new product for Village Industrial Project and to identify potential traditional food varieties that can be promoted. This study is carried out descriptively using questionnaires distributed to 264 respondents in Hulu Terengganu who were randomly selected. The findings of this study show that respondents tend to believe and responded positively to the potential of the Kuala Berang traditional food to be promoted as a new product of the Village Industrial Project. The study also found more than 7 varieties of foods that can be commercialized and featured as key products to be promoted. Based on the positive findings of this study, the researchers also proposed several suggestions that could be considered to ensure the continuity of this local food to be inherited by future generations and additional source of income for the local community as well.



Keywords: Traditional Food, Local Entrepreneurs, Village Industries, Food Entrepreneurs, Local Economy, Generate Income & Traditional Cakes

SS061: Building Product Innovation and Brand Reputation in the Apparel Market

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Suraya Akmar Mokhtaruddin & Nik Hazrul Nik Hashim

Product innovation is linked with brand reputation that influences consumer behavioural intention in purchasing apparel product. This study will determine the influence of product novelty, product inimitability and product similarity, self-congruity and value consciousness on brand reputation that led to behavioural intention. Specifically the study proposes to determine the moderating role of self-congruity and value consciousness on the relationship between brand reputation and behavioural intention. There are limited empirical studies that examine consumer behavioural intention for apparel product in developing nation. The study focuses on new dimensions for product innovation-brand reputation relationship that reviews the impact of customer behavioural intention in developing nations by conducting a web-based survey on a sample of 299 women customers. The findings from Smart PLS-SEM indicate that product novelty, product inimitability, self-congruity, value consciousness significantly influence brand reputation. Notably self-congruity, value consciousness and brand reputation significantly influence behavioural intention. Based on the findings of this research, the relationship of product innovation-brand reputation needs to be further researched to discover in greater detail factors influencing consumer behavioural intention in purchasing apparel product.

Keywords: Brand Reputation, Product Novelty, Product Inimitability, Product Similarity, Self-Congruity, Value Consciousness & Product Innovation.



Category E (Life Science)



LS001: An Innovation of Walking Aid for Rehabilitation Patients

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Walking aid is used for two purposes as a tool for rehabilitation when the user is recovering from an injury or operation and for long term use when the user has a permanent difficulty with walking unassisted. In this research, the Easy Walking Aid (EWA) is developed to help the lower limb disabilities patient to live an independent daily life. EWA is product to help the patient for easy rise up from sitting to standing position and vice versa by adding additional features which is dc motor at the side leg of walking frame. The dc motor mainly function in adjusting height of the walking frame during standing and sitting activity done by the patient. The push button connected with dc motor to control the height of the walking frame. It helps the hip fracture patient to exert less force on the walking frame during standing up. In addition, two wheels was fixed at the front leg of the walking frame to help the patient move forward without lifting the walking frames during walking activity. 12V battery was used in this product

to run the DC motor efficient. In the meantime, by improving existing products to help and facilitate the lower limb disabled to do their daily activity. The product is tested for the smoothness of the DC motor in adjusting height with 12V and usability of the patient in walking with 2 wheeled walking aid. The device can help increase the confidence of the user's walking ability to do their rehabilitation and reduce the time taken for the lower extremity to recover.

Keyword: Walking Aid, Lower Limb Disabilities, Hip Fracture, Sit To Stand, Bone Fracture & Rehabilitation.

LS002: Alat Senaman *Pinball*

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Berat badan berlebihan dan obesiti merupakan faktor risiko utama yang sering dikaitkan dengan penyakit kronik seperti diabetes dan penyakit kardiovaskular. Untuk mengurangkan masalah ini, satu projek Alat Senaman *Pinball* (ASP) telah direka bagi menggalakkan generasi muda terutamanya mengamalkan gaya hidup yang sihat. ASP bersaiz sederhana dan dapat menampung beban sehingga 150 kg. ASP merupakan salah satu alat senaman yang dibangunkan bertujuan untuk membakar kalori dalam badan. Ia juga dapat menarik minat golongan muda untuk meluangkan sedikit masa mereka melakukan senaman sambil bermain. Selain daripada menggalakkan generasi muda menjalani gaya hidup sihat, ia juga dapat menghilangkan rasa bosan dan melupakan



tekanan setelah seharian menjalani aktiviti yang memenatkan minda. ASP ini menggabungkan dua fungsi dalam satu masa dimana terdapat alat senaman penginjak mini (*mini stepper exercises*) dan permainan *Pinball*. Pelancar ditarik dengan kuat bagi memindahkan bebola gelas (*bearing ball*) ke litar permainan *pinball*. Sistem *pulley* digunakan untuk menyokong pergerakan kabel dan menyambungkan pengayuh dengan *flipper*. Kayuhan pada alat senaman penginjak mini akan mengawal pergerakan *flipper* bagi mengawal bebola gelas supaya tidak jatuh, menyentuh bahagian-bahagian yang akan menghasilkan bunyi melalui buzzer disebabkan oleh hentaman bebola gelas yang kuat. Keseronokan bermain sambil bersenam ini secara tidak langsung dapat membakar kalori dan bilangan kalori yang berjaya dibakar dapat dilihat pada paparan di alat senaman penginjak mini.

Kata Kunci: Senaman, *Pinball*, Kalori & Gaya Hidup

LS003: Assessment of Environmental Sustainability using UI GreenMetric at Politeknik Merlimau as a Green TVET Campus

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Suziee Sukarti, Mohamad Nazri Ismail & Mohamad Nazri Ismail

Malaysia is concerned about the world greenhouse effect as expressed by Prime Minister during Conference of the Parties (COP 15) in Copenhagen. Green campus is a concept that can reduce the effects of greenhouse. Thus, its implementations is seen as a potential action to reduce greenhouse effect and also cares of the heritage. Politeknik Merlimau has embarked on a journey towards sustainable campus science 2010, on top of that, BLUEPRINT POLYGreen was introduced in 2015 to strengthen its commitments based on 10 areas of focus, namely Change Management & Communication, Environmental Management, Climate Change Management, Energy Management, Waste Management, Water Management, Transport Management, Air Quality Management, Landscape & Biodiversity Management and Green Procurement. The purpose of this study is to assess the extent to which the implementation of POLYGreen at the Politeknik Merlimau has successfully reduced greenhouse effect towards achieving green TVET campus status. UI GreenMetric World University Ranking was used as assessment tool by quantifying 6 criteria that are Setting and Infrastructure (SI), Energy and Climate Change (EC), Waste (WS), Water (WR), Transport (TR) and Education (ED). This study uses observational analyses to determine effectiveness of POLYGreen activities in terms of Sustainable Campus. The results showed the value obtained by Politeknik Merlimau in the UI GreenMetric World University Rankings standards.

Keywords: Green TVET Campus, Sustainability & GreenMetric.



LS004: An Overview of Design Thinking: Human Centric Approach

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Design thinking is generally defined as an analytic and creative process that engages a person in opportunities to experiment, create prototype models, gather feedback and redesign. The design thinking process has become increasingly popular over the last few decades because it was key to success of many high-profile companies such as Google and Apple. Hence, the primary of this study is to provide an overview of the current state of design thinking. Through a review of literature, the papers survey the basic viewpoints of design thinking, paying particularly attention to the perspective of design research and design education. Two viewpoints are discussed: the importance of design thinking in education and the implementation of design thinking in Malaysian education. The goal is to identify the features and characteristics of design thinking and discuss its importance in promoting students' problem solving skills in the 21st century.

Keywords: Design Thinking Approach, Malaysian Education, Human-Centric Problem Solving

LS005: The Application of Integrated System and Antenna Designs in Pineapples Fertigation at Sultan Salahuddin Abdul Aziz Shah Polytechnic's, Smart Farm

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This study explores the suitability of growing pineapples by using the fertigation technic in Sultan Salahuddin Abdul Aziz Shah Polytechnic's smart farm. Soil conditions were studied by using the AgroSync Antenna which was developed to read data from the internet. The research was aimed at establishing the relationship between seven thematic soil conditions and suitability of growing pineapples at the Smart Farm. Data were read and relayed from three different stations through the internet medium to the farmer. A digital data based was developed with seven thematic variables; they are the battery, humidity, pH, electronic conductivity, moisture and temperature. Then, a dependent variable, the height of the crop was included in the process of identifying the suitability of the crop growth. A non-parametric analysis was employed due to the non-normal nature of the data. This test was carried out to determine the co-relations between the thematic variables and the height of pineapples. An Independent K-Samples analysis was performed indicating that the data was significantly different between three stations with low and high readings that lead to the suitability of growing pineapples in Polytechnic's Smart Farm. The findings concluded



that in future, the height of the crop should be included in the thematic variables for easy measurement of the crop growth.

Key Words: Antenna, Pineapple Fertigation, IOT and Smart Farming.



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