



ICMCER 2024



5th International Conference on
**Multidisciplinary and Current
Educational Research**

11th-12th March, 2024 | Bangkok, Thailand



Organized by

Wainganga College of Engineering & Management, Nagpur, India

ASEAN Studies Centre Mahachulalongkornrajavidyalaya University, Thailand &

Institute For Educational Research and Publication (IFERP)-Thailand Society



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Conference Theme



Challenges and Solutions in Education Research: A Cross- Disciplinary Approach



Preface

We are delighted to extend a warm welcome to all participants attending 5th International Conference on Multidisciplinary and Current Educational Research (ICMCER-2024) organized by Wainganga College of Engineering & Management, Nagpur-India, ASEAN Studies Centre Mahachulalongkornrajavidyalaya University-Thailand and Institute For Educational Research and Publication (IFERP)-Thailand Society taking place in Bangkok, Thailand at Grand Mercure Bangkok Atrium, Huay Kwang, Bangkok, Thailand on March 11th-12th, 2024. This conference provides a vital platform for researchers, students, academicians, and industry professionals from all over the world to share their latest research results and development activities in the field of Educational Research. It offers delegates an opportunity to exchange new ideas and experiences, establish business or research relationships, and explore global collaborations.

The proceedings for ICMCER-2024 contain the most up-to-date, comprehensive, and globally relevant knowledge in the field of Educational Research. All submitted papers were subject to rigorous peer-reviewing by 2-4 expert referees, and the papers included in these proceedings have been selected for their quality and relevance to the conference. We are confident that these proceedings will not only provide readers with a broad overview of the latest research results in Educational Research but also serve as a valuable summary and reference for further research in this field.

We are grateful for the support of many universities and research institutes, whose contributions were vital to the success of this conference. We extend our sincerest gratitude and highest respect to the many professors who played an important role in the review process, providing valuable feedback and suggestions to authors to improve their work. We also extend our appreciation to the external reviewers for providing additional support in the review process and to the authors for contributing their research results to the ICMCER-2024.

Since November 2023, the Organizing Committees have received more than 350+ manuscript papers, covering all aspects of ICMCER-2024. After review, approximately 100+ papers were selected for inclusion in the proceedings of ICMCER-2024. We would like to thank all participants at the conference for their significant contribution to its success.

We express our gratitude to the keynote and individual speakers and all participating authors for their dedication and hard work. We also sincerely appreciate the efforts of the technical program committee and all reviewers, whose contributions made this conference possible. Finally, we extend our thanks to all the referees for their constructive comments on all papers, and we express our deepest gratitude to the organizing committee for their tireless work in making this conference a reality.

About 5TH ICMCER-24

Welcome !

The 5th International Conference on Multidisciplinary and Current Educational Research (ICMCER-2024) stands as a prominent gathering scheduled for March 11th-12th, 2024, in Bangkok, Thailand. This conference serves as a nexus for academics, researchers, and educators worldwide, fostering the exchange of pioneering research and innovative methodologies across diverse educational spheres. ICMCER-2024 aims to facilitate collaborative discussions, address contemporary educational challenges, and explore emerging trends to drive transformative changes in education. With an emphasis on practical applications and impactful insights, this event endeavors to shape the future of teaching practices and educational policies on a global scale.

The theme "Challenges and Solutions in Education Research: A Cross-Disciplinary Approach" encapsulates the core focus of the 5th International Conference on Multidisciplinary and Current Educational Research (ICMCER-2024). Set to unfold in Bangkok, Thailand, on March 11th-12th, 2024, this conference aims to unite global educators, researchers, and scholars in a collaborative pursuit.

Through a cross-disciplinary lens, the event will delve into pressing challenges facing education today while seeking innovative, multifaceted solutions. ICMCER-2024 endeavors to foster insightful discussions and research collaborations that transcend traditional boundaries, paving the way for transformative approaches to address complex educational issues across diverse disciplines.

Objective of Conference

The primary objective of the 5th International Conference on Multidisciplinary and Current Educational Research (ICMCER-2024) on March 11th-12th, 2024, in Bangkok, Thailand, is to create a vibrant platform for global scholars, researchers, and educators. The conference aims to facilitate the exchange of cutting-edge research across various educational disciplines. ICMCER-2024 seeks to encourage collaboration, foster interdisciplinary discussions, and showcase innovative methodologies, ultimately aiming to advance educational practices worldwide.

In addition to fostering research exchange and interdisciplinary collaboration, ICMCER-2024 aims to address contemporary challenges in education. The conference endeavors to explore emerging trends and innovative approaches that can effectively tackle these challenges. By providing a space for insightful discussions and presentations, ICMCER-2024 seeks to empower attendees with practical insights and solutions, encouraging the implementation of impactful strategies in educational settings globally. Through this, the conference aspires to contribute to the continuous improvement and evolution of educational research and practices.

About IFERP

The Institute for Educational Research and Publication (IFERP) is a professional association devoted to the advancement of the fields of engineering, science, and technology through the funding of research activities, propagation of the latest research insights, furtherance of industry trends, and other related ventures. IFERP aims to digitalize this entire process of innovation, collaboration, and knowledge-sharing through the fostering of a unified virtual scientific community worldwide. Everything from networking and joint ventures to learning, research assistance, publication, and more, will be carried out as part of this objective.

IFERP has established robust scientific, academic, and industry networks throughout Asia, the Middle East, and Europe. Some of the countries that IFERP has its presence in, include Iraq, Maldives, Thailand, Malaysia, Singapore, Philippines, Indonesia, Taiwan, Vietnam, UAE, Australia, Japan, Sri Lanka, Nepal, Ghana, and Africa.

Mission

“Upskilling the knowledge hub through technological innovation and excellence for the benefit of humanity”

Vision

“A Digitally equipped robust, dynamic & swift professional community integrating academics & industry for upgraded technical knowledge implementation”

What We Do !

IFERP believes that there is always a better way to treat the professionals by providing them a world class stage by organizing conferences. We are committed to doing the following activities:-

- We encourage convenient access to academic resources and support for all the aspirants and research scholars in urban and rural areas.
- IFERP organizes public education programmes, Workshops, Conferences, Webinars, Seminars, Guest Lectures, Short Term Training Programme, Faculty Development programme in the field of Engineering, Science & Technology.
- IFERP is dedicated to inquisitiveness, innovations and recent trends and developments in the field of Engineering & Technology.
- IFERP believes in knowledge sharing by collaborating with other Universities, organizations/Associations, to bring a better tomorrow.

From Managing Director, IFERP

On behalf of Institute For Educational Research and Publications (IFERP) & the organizing Committee, I express my hearty gratitude to the Participants, Keynote Speakers, Delegates, Reviewers and Researchers.

The goal of the 5th International Conference on Multidisciplinary and Current Educational Research (ICMCER-2024) is to provide knowledge enrichment and innovative technical exchange between international researchers or scholars and practitioners from the academia and industries in the field of Educational Research.

This conference creates solutions in different ways and to share innovative ideas in the field of Educational Research. ICMCER-2024 provides a world class stage to the Researchers, Professionals, Scientists, Academicians and Students to engage in very challenging conversations, assess the current body of research and determine knowledge and capability gaps.

5th International Conference on Multidisciplinary and Current Educational Research (ICMCER-2024) will explore the new horizons of innovations from distinguished Researchers, Scientists and Eminent Authors in academia and industry working for the advancements in Science and Engineering from all over the world. ICMCER-2024 hopes to set the perfect platform for participants to establish careers as successful and globally renowned specialists in the field of Engineering, Technology.



Mr. A. Siddh Kumar Chhajjer

MD & Founder, IFERP
Technoarete Group

From Chief Executive Officer, IFERP

IFERP is hosting the 5th International Conference on Multidisciplinary and Current Educational Research (ICMCER-2024) this year in month of March, 2024. The main objective of ICMCER-2024 is to grant the amazing opportunity to learn about groundbreaking developments in modern industry, talk through difficult workplace scenarios with peers who experience the same pain points and experience enormous growth and development as a professional. There will be no shortage of continuous networking opportunities and informational sessions. The sessions serve as an excellent opportunity to soak up information from widely respected experts.

Connecting with fellow professionals and sharing the success stories of your firm is an excellent way to build relations and become known as a thought leader. I express my hearty gratitude to all my Colleagues, Staffs, Professors, Reviewers and Members of Organizing Committee for their hearty and dedicated support to make this conference successful. I am also thankful to all our delegates for their pain staking effort to make this conference successful.



Mr. Rudra Bhanu Satpathy

CEO & Founder, IFERP
Technoarete Group

About Keynote Speaker

Dr. Abdul Rahim Ridzuan is an Associate Professor and economics lecturer at Universiti Teknologi MARA in Melaka, Malaysia. His academic journey is marked by a strong foundation, holding a Bachelor's degree in International Economics from Universiti Multimedia, a Master's degree in International Economics from Universiti Putra Malaysia, and earning his PhD in International Economics from Universiti Sains Malaysia in 2017.

Dr. Abdul Rahim Ridzuan has made significant contributions to academia, having successfully supervised 2 PhD students and 1 master's student, while currently mentoring 6 PhD students. His research expertise extends to key roles at the Big Data Analytics and Artificial Intelligence (IBDAAI) unit at Universiti Teknologi MARA and the Centre for Economic Development and Policy (CEDP) at Universiti Malaysia Sabah. He is also affiliated with the Accounting Research Institute and the Institute for Research on Socio-Economic Policy, both at Universiti Teknologi MARA.

Beyond his home country, Dr. Abdul Rahim Ridzuan has been acknowledged as a Visiting Professor at esteemed foreign universities, including those in Turkey and Indonesia. Presently, he holds the position of Visiting Professor at the University of Cyberjaya in Malaysia.

Dr. Abdul Rahim Ridzuan's prolific research record encompasses over 171 publications in various academic outlets. His dedication to advancing knowledge has resulted in securing research grants totaling RM2 million at both national and international levels. His commitment to excellence has earned him more than 60 awards, including recognition as the Most Prolific Author and accolades for his outstanding publications and contributions to consultations.



Dr. Abdul Rahim Ridzuan

Department of Economics and Finance
Universiti Teknologi MARA, Malaysia



About Keynote Speaker

Tarik Ahmed Rashid received his Ph.D. in Computer Science and Informatics degree from College of Engineering, Mathematical and Physical Sciences, University College Dublin (UCD) in 2001-2006. He pursued his Post-Doctoral Fellow at the Computer Science and Informatics School, College of Engineering, Mathematical and Physical Sciences, University College Dublin (UCD) from 2006-2007. He joined the University of Kurdistan Hewlêr (UKH) in 2017. He has also been included in the prestigious Stanford University list with 2.7% of the best world researchers for the year 2020.

Tarik is on the list of top 10 researchers in the Al-Ayen Iraqi Researchers Ranking (2022). AIR-Ranking 2022 is a national ranking organized by Al-Ayen University to honour those who have worked inconclusively to promote the Iraqi researcher image in the international domain. A group of highly skilled members has performed the ranking with the condition of the researcher having at least an H-index of 12 with more than 12 research papers in the Scopus database in 2021 and at least an H-index of 6 in WOS. The ranking of the researcher was established by considering several academic network websites that is including Web of Science, Scopus, Sci-Val, ResearchGate, Publons, and Google Scholar.



Dr. Tarik A. Rashid

Professor in Computer Science/Artificial Intelligence,
Director of the Centre for Artificial Intelligence and
Innovation,
Dean of the School of Science and Engineering
University of Kurdistan Hewler, Iraq.

About Keynote Speaker

Dr.Lampong Klomkul is a Vice-Director, ASEAN Studies Centre, and a lecturer from Faculty of Education, Mahachulalongkornrajavidyalaya University. She Graduated in Doctor of Philosophy (Ph.D.) in Educational Research Methodology, Faculty of Education, Chulalongkorn University, Thailand. She received award from National Research Council of Thailand: The best dissertation of year 2013 at Good Level (Education Field), received Graduate Scholar Award from The Nineteenth International Conference on Learning, The Institute of Education University of London, London, UK, August 14-16, 2012. She also received Golden Jubilee Scholarship to study in Canada for two years in Bachelor degree from 1997-1999. She also received best researcher in the year 2020 at excellent level from Buddhist Research Institute, Mahachulalongkornrajavidyalaya University. She is interested in conducting research in Education and ASEAN Studies. She is the author, co-author or editor of more than 50 articles and books. She has an experience of being a guest speaker and organizing international conferences. She has also completed research project in various research designs such as Structural Equation Model (SEM), Ethnographic Delphi Future Research (EDFR), and Mixed Methods Research (MMR).



Dr. Lampong Klomkul

Vice-Director for ASEAN Studies Centre
Mahachulalongkornrajavidyalaya University
Thailand

About Keynote Speaker

Dr. Thosporn Sangsawang is an Assistant Professor and the Head of the Center of Innovation Learning and Technology at the Faculty of Technical Education, Rajamangala University of Technology Thanyaburi, Thailand. Her expertise lies in the fields of Innovation and Learning Technology, Educational Technology, Digital Technology, and Instructional Design. With a Ph.D. in Learning Innovation in Technology, she has contributed significantly to the development of Internet-based Instructional Design Frameworks, including IDFVE and GCC. Dr. Sangsawang is a dedicated educator and researcher, known for her work in educational media and multimedia games for hearing impaired children. She has a wealth of international experience and a strong academic background, making her a notable figure in the field of educational technology and communication.



Dr. Thosporn Sangsawang

Assistant Professor,
Department of Technical Education,
Rajamangala University of Technology, Thailand

About Session Speaker

Assoc. Prof. Sr Ts. Dr Noorsidi Aizuddin Bin Mat Noor begins his academic career after graduating his degree and pursued his study till PhD degree level. He is a Registered Probationary Valuer with The Board of Valuer, Appraisers, Estate Agent & Property Manager (BOVAEAP), Malaysia. He has been a trusted examiner for professional exams under BOVAEAP and an expert panel for MQA to accreditation prog. in Real Estate in Malaysia, since 2015. His area of expertise and research interest includes Property Economics, Real Estate Valuation, Housing Policy and Issues, Community Dev., Urban Studies & Property Dev. His strengths lie on his networks with local and international industries as well as in both private & government sectors. He has led various high profile projects as well as other prog. and covering internal & overseas organizations. He has published a variety of articles related to real estate & community dev.

Amidst this, he has coached exceptional graduates, one of which has recently graduated with a PhD, Graduated on Time and Chancellor's Award Receiver. Previously appointed as MaGICX Sdn Bhd's CEO, UTM's Technovation Park Manager, Center for Real Estate Studies Vice President (Consultation) and also as a Quality Manager for the Faculty. In 2017, he received Best Academic Advisor award from UTM. He received numerous others awards as a recognition of his contributions. Also been appointed as Editorial Board of a number of journals and been invited and appointed as a Board Member for the RPKKJ (2014-2021). His appointment as the Head of Fellows for the CEO@Faculty 2.0 Cycle 2 (AlxCHANGE) prog., a flagship academia-industry linkages prog. under the MoE has had a huge impact on his own professional dev. & led him to establish networks with the various individuals & teams at the ministerial level & industry, to form a symbiotic relationship between industry, university, & community, in various ways. He has a vast experience in management, administration & teaching in higher education.



Sr Ts. Dr. Noorsidi Aizuddin Mat Noor

Faculty of Built Environment and Surveying
Universiti Teknologi Malaysia
Malaysia

About Session Speaker

Abdel-Hamid has over 32 years of experience in the academic and industrial fields. He has a multi disciplinary academic/research experience in digital signal processing including image/video processing, telecommunications, data acquisition systems, wireless sensor networks (WSN), Internet of Things (IoT) and Fibre Optics communication. He is working to harness and integrate different technologies towards implementing smart systems to contribute to smart cities and real-life applications. His research activities are not limited to the national level within the United Kingdom but are internationally extended to many partner Universities in various countries. His research has produced over 70 refereed papers on highly rated journals/ conferences.

In addition to his research activities, he is involved in several enterprise projects and consultancy activities for national and international companies. He has secured and been leading and involved in several externally funded projects on national, European and international levels, totalling £19M.

Dr Soliman's work has been recognised through several awards such as: Lord Stafford award "Impact through Innovation", for Designing and developing a smart monitoring and controlling system for diabetic people. The AWM ICT Excellence awards for "Best Knowledge Transfer project" category, for Designing and developing an electronic bladder diary, and UHNS "Clinical Innovation" award, for Designing and developing an online multimedia-based training system for surgeons



Dr. Abdel Hamid Soliman

Professor of Signal Processing and Telecommunications
Staffordshire University
United Kingdom

About Session Speaker

Dr Intakhab Alam Khan, an educationist, teacher, researcher, conference presenter, keynote speaker and author from New Delhi-India, is presently full professor (Education) at King Abdulaziz University, Jeddah-Saudi Arabia. An author of 18 books and around 90 papers/articles in international journals/edited books, Dr Khan is an honorary chief editor/associate editor/asst. editor of many online/print international educational journals/conference proceedings (especially Atlantic Press; part of Springer-Nature. (<https://www.atlantis-press.com/proceedings/hwesm-23/publishing>)). He successfully completed and published 10 research projects funded by the deanship of scientific research, King Abdulaziz university. (<http://intakhabkhan.blogspot.com/>). Dr Khan is one of highly read scholars (5,29,000 reads) on the researchgate. (<https://www.researchgate.net/profile/Intakhab-Khan-2/stats/reads>), and highly cited google scholars (English language teaching/Education) of king Abdulaziz university, Saudi Arabia. (<https://scholar.google.co.in/citations?user=kCXPbd4AAAAJ&hl=en>). Dr Khan has represented king Abdulaziz university in many conferences and events across the globe.



Dr. Intakhab Alam Khan

Professor of Education
King Abdulaziz university
Saudi Arabia

About Exclusive Event Speaker

Passionate lecturer for Bachelor and Master Degree students. Teaching students from numerous social and cultural backgrounds, possessing exceptional administrative, verbal communication and written skills along with constructive and effective teaching techniques that promotes a stimulating learning atmosphere. Classes are taught in a very practical manner. Firm believer in enhancing 21st century skills in a classroom.

Passionate MICE/Event Planner. Planned and Executed various events such as International Conferences, Workshops, Competition, Exhibitions and many more. Planned and Executed Events from small scale to large scale. Able to facilitate in Event Planning and act as Event Coordinator and Event Supervisor for various Events. Expertise lies in sponsorship management.

Guest Speaker specializing in mastering presentation skills. Conduct workshop sessions for Master Degree and Ph.D. students.

Fluent in English and Thai. Can offer Bilingual classes. Experienced teaching on-site, virtual learning and hybrid mode.



Dr. Natasha Doowa

Lecturer, Department of Business and Hospitality,
Asian Institute of Technology,
Corporate Trainer Bits, Thailand.



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Dr. Natasha Doowa

Lecturer, Department of Business and Hospitality,
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ABSTRACTS ►►



The Role of Digitalization in the Formation of Student Character in Primary Schools

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Abstract

In the era of information and communication technology development, information that was previously in analog form has now turned into digital form. This transfer utilizes digital technology, enabling information to be accessed and transmitted via internet equipment and networks. This technological development has expanded to various aspects of life and has become an important need for all individuals in society. Education is one of the institutions that has also experienced significant changes as a result of this innovation. Character education is an important part of the educational process, where various individuals are involved to achieve good goals and educate the younger generation to be ready to face competition. The values of character education become integrated and materialized in the learning process, forming students who have integrity and good social skills. Educators have a crucial role in shaping the character of students in elementary schools. They serve as role models and examples for students, thus becoming role models that students follow. This literature research aims to understand the role of digitalization in the formation of student character in elementary schools and how an educator can contribute to this process by utilizing existing digital technology.

Keywords

Digitalization, Student Character, Primary Schools



Examining Principal Challenges to Enhancing Service Quality in Primary Education

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Abstract

This study aims to identify and propose solutions to the challenges faced by school principals concerning service quality in elementary schools. Employing a qualitative descriptive research approach, the study gathered data through observations, interviews, and document analysis. The data analysis involved identifying key issues and focusing on problems within the institutions. The findings revealed challenges related to human resources, including educators and school staff, as well as a lack of public trust in these institutions. Educators and staff members require encouragement and recognition from local education authorities. Furthermore, there is insufficient involvement from local education agencies in monitoring the progress of state school institutions.

Keywords

School Challenges, Principal Issues, Quality of Service



Implementation of Ecopedagogy-Based Natural and Social Sciences (IPAS) Learning Media to Increase Environmental Care Attitudes

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Abstract

Human life and the environment are interrelated. However, today, global environmental challenges such as climate change, deforestation, pollution, and biodiversity loss have caused severe damage to the earth's ecosystem. Therefore, it is essential to increase environmental awareness and attitudes among the younger generation. Learning media focusing on Natural and Social Sciences (IPAS) has a crucial role in achieving this goal. This research proposes the development of eco-pedagogy-based learning media as a solution to increase students' environmental care attitudes. Ecopedagogy is an educational approach that emphasizes a balanced relationship between humans and nature, as well as an understanding of human dependence on the environment. This learning media combines ecopedagogical concepts in science material, creating a learning environment that promotes a deeper understanding of the relationship between humans and nature. The research method involves developing learning media, testing, and evaluating students. This learning media includes various types of material, such as learning videos, simulations, interactive games, and additional resources to support eco-pedagogy-based science and science learning—the results of the trial show that this learning media is effective in increasing environmental care attitudes. An environmentally caring attitude is critical to maintaining and protecting this planet. Through an eco-pedagogy-based approach in science and technology learning media, we can create a younger generation who is more aware, knowledgeable, and cares about the environment. Thus, this effort contributes positively to preserving the natural environment, which is increasingly critical in this modern era.

Keywords

Learning Media, IPAS (Natural and Social Sciences), Ecopedagogy, Environmental Concern



Village Marginal's Women Empowerment with Paulo Fraire's Problem-Facing Approach

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Abstract

The village marginal women group is a group of people who are marginalized and therefore unable to adapt to current developments. The inability to adapt results in women not having strong relationships and the power to adapt their identified needs to align with the demands of village development developments. Marginal village women's groups are neglected and do not receive attention from the government and village community as a whole, so women experience obstacles in expressing themselves, speaking out to express their rights, and providing opinions on the things they experience. This research analyzes efforts to empower rural marginal women based on Fraire's empowerment theory by using a problem-facing approach in the context of empowerment as an awareness effort at four levels of awareness. The research method used is a library study with techniques of content analysis. The research results state that: 1) empowerment of marginalized village women has been carried out in various countries including Indonesia with different empowerment concepts. This empowerment is carried out on a regional, national, and international/global scale; and 2) empowerment of marginal village women based on Fraire's theory has been carried out in several countries such as Finland, Pakistan, Nepal, China, and other countries. However, in Indonesia, the Fraire empowerment concept has not been implemented properly and can only reach the intransitive awareness stage.

Keywords

Village Marginal's Women Empowerment, Paulo Fraire's Facing Problem Approach





Paulo Freire's Dialogical Approach in the Implementation Program of the Kampung KB Bintaran, Yogyakarta City

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Abstract

Kampung KB Bintaran is located in Wirogunan Village, Mergangsan District, Yogyakarta City, DI Yogyakarta Province, Indonesia. The Indonesian Government launched Kampung KB to create quality small families. The Kampung KB has experienced quite significant growth, especially in the success of the KKBPK program, Nawa Cita Indonesia, and Sustainable Development Goals (SDGs) in 2030. The success of the Kampung KB program is reflected in several aspects. First, control the population; second, improve the quality of the population as measured by increasing resilience and prosperity by implementing the eight family functions. The Kampung KB Program leads to community empowerment. This program adheres to a top-down system from the central government, City Government, and BKKBN. In general, top-down system empowerment in program implementation comes from the government or institutions to the community. However, the implementation of the program in Kampung KB Bintaran does not entirely come from the government. There are several activities implemented as a result of community dialogue so that the community feels appreciated, respected, and heard. This research aims to describe Paulo Freire's dialogical approach between companions and the community in implementing the Kampung KB program. The method used in this research is an empirical study by interviewing residents and PKB in Kampung KB Bintaran. The research results state that Paulo Freire's dialogical approach is implemented through humility, hope, faith, love, and critical thinking. The dialogic approach occurs in several activities, namely the monthly POKTAN cadre coordination meeting which produces program proposals from the community and consultation services by PKB for every resident in Kampung KB Bintaran.

Keywords

Dialogical Approach, Paulo Freire, Kampung KB Bintaran Program



Deep Learning Technique for Analyzing Genetic Regulation of Estrogen Receptor Inhibition during Memory Formation

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Abstract

Over the past few decades, Ribosome Profiling methodology has captivated the genome-wide data acquisition within living cells, offering a sophisticated view of these occurrences at the level of singular nucleotide. Memory formation involves intricate translational repressive mechanism in the brain such as inhibition of estrogen receptor 1 (ESR1). Conventional mutual transcript-level down-regulation technique via ESR1 inhibition has following limitations: lack of granularity to decipher convoluted genetic regulatory dynamics, complications engendered during integrating transcriptome-translatome data from different conditions and narrow potential band to identify regulatory network which hinder actual analysis of gene regulation over time. To solve above mentioned restraints at genomic level, this paper proposes novel deep learning approach which offers the potential optimization. This self-supervised learning has attained enhanced dynamic resolution during memory formation by applying time series analysis, differential expression analysis and clustering model. Smooth data integration is achieved by multimodal fusion methods on combined transcriptomic and ribosome profiling data to govern targeted genes. Thus, this model gains comprehensive findings in interpreting biological connotations and genetic regulation during memory formation.

Keywords

Ribosome Profiling, Estrogen Receptor, Deep Learning, Genetic Regulation, Memory Formation



The Use of Seminar-based Discussion to Improve the Learners' Self-Confidence to Speak English in Creative English Club

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Abstract

This study aims to investigate the effectiveness of Seminar-Based Discussion as a method to increase student's confidence in speaking English in the context of the Creative English Club. In the design of this study, the researcher used Classroom Action Research (CAR) with two cycles and consisted of four meetings. This research was conducted at SMAN 16 Bone. The subjects of this study were students who were members of the creative English club of SMAN 16 Bone. The number of students who are active in this creative English club is 30 people. The study involved two cycles of intervention and assessment. The pre-test results showed that only a small number of students achieved satisfactory scores, while most others were below the target level, indicating a lack of student enthusiasm and engagement during regular learning sessions. The questionnaire results showed that Seminar-Based Discussion contributed to a more enjoyable learning experience, which positively affected students' confidence. In addition, observation results showed that the method fostered teamwork, expanded students' vocabulary, improved pronunciation, and increased overall engagement. In conclusion, Seminar-Based Discussion proved to be an effective approach in increasing students' confidence in speaking English, making it a valuable tool for language teachers and learners alike.

Keywords

Students, Speaking English, Creative English Club, Classroom Action Research (CAR)



Analysis of Science Literacy Skills of Primary School Teacher Education Students in Terms of Critical Thinking and Science Process Skills

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Abstract

This research aims to determine the science literacy skills of Primary School Teacher Education (PGSD) students in terms of critical thinking and science process skills in science learning. The approach used in this research is quantitative. The research was conducted on 53 Primary School Teacher Education students from Yogyakarta State University. The sampling technique used in this research was total sampling. Data collection was done using a test method, specifically a subjective test. The data processing method in this research utilized the IBM SPSS Statistics 24 program. The results of this research indicate that 1) Critical thinking skills have a significant positive relationship and influence on students' science literacy skills; 2) Science process skills have a significant positive relationship and influence on students' science literacy skills. The implication of this research is that science learning in higher education should emphasize learning with critical thinking skills through science process competencies in its practice, either by using suitable models or learning approaches.

Keywords

Science Literacy Skills, Primary School, Teacher Education, Critical Thinking, Science Process Skills, Primary School Teacher Education (PGSD)



Correlates of Personal Halal Beliefs and Service Quality in the Halal Restaurants in Bangsamoro Region in Southern Philippines

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Abstract

The study analyzes how personal halal beliefs affect BARMM halal restaurant service quality. The study investigates restaurant halal practices, service quality, and personal halal beliefs and gives recommendations to improve food facility service and compliance. The Philippines' rising Muslim population is driving halal product and service demand. The study fills the Bangsamoro-specific variables affecting organizational operational efficacy research gap. The study's research questions include service quality, restaurant halal practices, the relationship between service quality and personal halal beliefs, issues in complying with halal standards, and the development of a program. This study triangulated quantitative and qualitative data and uses Likert scale surveys and interview guides. SERVQUAL assessed efficiency, and service quality. A literature review and best practices question alignment enhanced reliability and accuracy. Data analysis shows BARMM restaurant customers' demographics. These places draw men and women equally. These firms emphasize affordability to attract all income levels. Halal beliefs influence their food choices. Halal regulation is improving guest handling, but staff awareness needs growth. Halal certification requires government, marketing, and promotion for restaurants. Service quality, customer satisfaction, and halal-certified restaurant growth will show program success. Halal principles influence clients' opinions and decisions, therefore BARMM food businesses must modify services.

Keywords

Service Quality, Personal Halal Belief, Restaurant Halal Practices, and BARMM



Factors, Challenges, and Prospects of Sustainable Tourism and Hospitality Development in a Regional Context: The Case of Lanao del Sur Province

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Abstract

This study aimed to grasp an in-depth understanding of the existing factors, challenges, and prospects of sustainable tourism and hospitality development in Lanao del Sur, which can be used by the local governing bodies of the province to formulate an effective, sustainable tourism development plan. This study used a descriptive-exploratory approach in presenting, interpreting, and analyzing the gathered data. As such, the researchers sought the views and insights of local tourism officers or administrators as respondents of this study. After a thorough exploration of the needed facts and data in this paper, this study concluded that there are varying factors for sustainable tourism and hospitality development in the Province of Lanao del Sur, in terms of accommodation, accessibility, activities, and amenities sectors. Nonetheless, despite these existing factors, there are still challenges faced by the respondents that range from economic, socio-cultural, and environmental challenges. Finally, the study also found that given the existing factors and challenges of sustainable tourism and hospitality development in Lanao del Sur, there were some prospective recommendations of the respondents to the Local Government Units toward the sustainable growth and development of the industry in the locale.

Keywords

Tourism, Hospitality, Factors, Challenges, Prospects, Sustainable Development



Residents' Attitude Towards Sustainable Tourism Development at The Municipality of Balindong

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Abstract

The municipality of Balindong, Lanao del Sur, has been getting recognition as a tourist destination in the Southern Philippines as it started establishing and promoting tourist attractions in the area. This study was conducted to determine the attitude of its residents towards sustainable tourism development and its relationship with the demographic profile of the residents, current status, and impacts of sustainable tourism. The study used the quantitative research design and was participated by the Municipality of Balindong tourism-related business owners, LGU staff, and students.

The findings of the study showed that there is a positive response from the residents of the municipality of Balindong regarding sustainable tourism development. Furthermore, the study showed that there is a significant relationship between the demographic variables, educational attainment, and occupation and this suggests that residents of Balindong who are educated and have occupations are more likely to hold diverse perspectives than those who are not. It also revealed that there is also a significant relationship between the current status and impacts of sustainable tourism development and the residents' attitude towards sustainable tourism development at the municipality of Balindong.

Keywords

Residents' Attitude, Tourism, Municipality of Balindong



A Bibliometric Study on Annals of Library and Information Studies during 2012-2021

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Abstract

The present Bibliometric study is based on the articles published in the Annals of Library and Information Studies (ALIS) Journals during 2012-2021. The study provides the publication trends in the ALIS. This research will be useful for Library and Information Studies (LIS) professionals as well as associations in identifying publication trends in Library sciences. From the literature reviewed it has been observed that there is an urgent requirement to have a state-of-the-art analysis of trends in the field of LIS in India. This study aims to analyze publication characteristics of ALIS Journals in the last decade in order to find out the year-wise contribution of articles along with author productivity and collaboration trends. A total of 315 published articles are scanned in ALIS Journals during the study period to collect various bibliometric details considering factors such as year-on-year growth, authorship, and collaborations. Authors and institutions that are prolific, geographically distributed, and keywords that are popular. The study found that a total of 598 authors had contributed articles out of which 104 had authors shared one paper each followed by 157 authors who have published with two authors. It has been found that out of the 28 states, 135 authors from New Delhi had contributed 85 articles followed by West Bengal 47 articles with 66 authors.

Keywords

Bibliometric, Prolific Author, Prolific Institution, Author Productivity, Prolific Institution, Library Science





Critical Reading: Exploring Undergraduate Students' Reading Strategies and Problems

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Abstract

Critical reading is considered as the high level of reading skill for undergraduate students to master. To succeed, several reading strategies should be implemented during reading to overcome reading problems. This study was intended to explore EFL students' reading strategies and problems in critical reading. Qualitative research design was used to obtain the data by employing interview and questionnaire. To find out students' reading strategies, the questionnaire adapted from Mokhtari & Sheorey about Survey of Reading Strategies (SORS) was used. The questionnaire divided into 3 categories: global reading strategies (GLOB), problem solving strategies (PROB) and support reading strategies (SUP). To discover students' problems encountered during critical reading, semi-structured interview was done to obtain the relevant data. The participants involved were 20 undergraduate students majoring on English Language Department who have taken Reading Comprehension course. The result showed that the majority of students used problem solving reading strategies (PROB) with the percentage (73.7%) during reading. The result of reading problems yielded related to linguistic aspect on text and students' anxiety during reading. It can be concluded that reading strategies assist students to comprehend texts as well as overcoming reading difficulties. Further research should implement other reading strategies for undergraduate students in order to elicit reading problems resulted as to improve critical reading ability.

Keywords

Reading Strategies, Reading Problems, Critical Reading, Undergraduate Students



The Creation of a Digital Game to Teach Basic KYC Practices in a Microfinance Setting

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Abstract

Microfinance institutions (MFIs) in the financial industry are required to practice caution when choosing which customers to approve. The Know Your Customer (KYC) process is a set of standards that ensure client authenticity through the collection and assessment of any information necessary to validate their identities and financial backgrounds. This study aims to develop a serious game for KYC training that simulates the process of customer verification and risk assessment within the financial lending industry on a conceptual level. 20 participants were divided into four groups (Video, Game, Hybrid, Supervisors) and evaluated to see if the game was in any way effective in helping its players learn about the conceptual skills needed in KYC. The results showed a significant improvement in knowledge among those that played the game with only a slight increase in improvement for those who watched a video presentation alongside it. It is recommended that future studies be conducted with those outside the microfinance industry and that further builds of the game be improved upon to make it more accurate and accessible to those who are not familiar with video games in general as it would be beneficial to cater to those that wish to try games as a learning experience.

Keywords

Microfinance institutions (MFIs), Know Your Customer (KYC), Microfinance Industry



Investing Though Children: An Analysis of How Capitalism is Practiced in Traditional Javanese Families with Regard to Children's Educational Patterns

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Abstract

Capitalism is present in various aspects of human life, one of which is through the family. The family plays a large role in the legitimization of capitalism from generation to generation. This is done through children's education patterns. One of the traditions of family capitalism is the traditional Javanese family, which provides advice on child ownership and how to educate them. Unfortunately, this ownership of children then slowly leads to capitalist practices in the form of exploitation and investment. This research aims to reveal how investment practices with children and the education patterns carried out by parents to create children who meet "standards" operate in traditional Javanese families. It doesn't just stop there, this research will also look at how children struggle to abstract from the hegemony that occurs in the family. The concept that will be used to conduct this research is schizoanalysis, from Gills Deleuze and Felix Guattari. The results of this research show that family capitalism is still being passed down from the sandwich generation to their children. These ideas of family capitalism are passed down from generation to generation through the parenting and education of children. Generally, those who inherit this family capitalism come from the lower middle class, who live in the suburbs and have not experienced much social change and modernization. Children who feel dominated by the capitalist system then use their knowledge and courage to deterritorialize the system in their family.

Keywords

Capitalism, Javanese Traditional Family, Schizoanalysis



The Relationship Between Risk Management and the Success of Small and Medium-Sized Enterprises in Riyadh City

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Abstract

Small and medium enterprises are often regarded as the foundation of economic and social development in developing nations, and there is no doubt that these initiatives face numerous economic, financial, and administrative risks. However the most significant of which are financial risks. To confront these financial risks must follow carefully considered strategies so that they can be developed and growth. To do so, it must have competent management that is focused on controlling various environmental risks in general and financial risks in particular. The objective of this paper is to discuss the role of financial risk management in the success of small and medium-sized enterprises in Riyadh. Finding a link between financial risks and their beneficial effects on small and medium-sized businesses' growth in Riyadh is the research problem. The paper seeks to comprehend this relationship In order to offer advice and risk-management solutions through a comprehensive literature review. The research also concentrated on the dimensions of financial risks represented by the following: 1- Inadequate financial liquidity. 2- Inadequate treasury management. 3- Inadequate financial planning. 4- The risk of failing to repay loans and debts. The findings of the study will help to raise awareness of the importance of financial risk management in small and medium-sized businesses, as well as provide project owners with the knowledge and resources they need to achieve success and sustainable growth in Riyadh. In addition this paper will present and highlight the most important financial risks that small and medium enterprises will face when they begin, how to avoid these risks, and how to monitor and follow up on these risks for small and medium enterprises when carrying out their activities in order to improve the financial situation of small and medium enterprises in the city of Riyadh. The paper will also give ideas to assist small and medium-sized businesses in dealing with financial risks in order to stabilize and improve their performance and financial status in order to meet project objectives.

Keywords

Risk Management, Small and Medium-Sized Enterprises, Weak Financial Liquidity, Poor Cash Flow Management, Weak Financial Planning, Risk of Non-Repayment of Loans and Debts



Improving the Control and Evaluation of Educational Achievements of Students in the Digital World

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Abstract

The purpose of the study is to review various types of assessment projects for the development of a person in social or future professional activities in the digital world, taking into account the balance between cognitive loading and unloading. The article deals with the issues of cognitive loading and un-loading when organizing such exams in the digital environment as Testing, Open Book, Closed Book (written), Practical (practical work + oral defense), Project (project work + oral defense), Oral exams, as well as combined and creative exams. To determine the preference for the type of exam, a survey was conducted with the participation of 2287 university students in Kazakhstan. According to the results of the survey, the students are more successful in learning the material when they are given the opportunity to think about their answer and express it in writing or show practical skills (the choice of written exams, including those with an open book, project and practical exams). Thus, exams using cognitive unloading are preferred among student responses. The study revealed problems in assessment: misunderstanding on the part of teachers, how to correctly formulate learning outcomes; lack of a common understanding of the use of the assessment means; formal examination of the task; lack of methodological recommendations for assessing learning outcomes. When preparing tasks, teachers should take into account the cognitive loading on students, if necessary, offer cognitive unloading.

Keywords

Assessment, Cognitive Loading, Cognitive Unloading, Exam, Information Technology

Javanese Speaking Skills of Grade IV Elementary School through Role Play Method with Storytelling Media

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Abstract

This study aims to improve the Javanese speaking skills of fourth grade students of SD Negeri 2 Saradan, Baturetno, Wonogiri, Central Java, Indonesia through role-playing learning method with storytelling media. The type of research is class action research. The subjects in the study were fourth grade students of SD Negeri 2 Saradan which amounted to 8 students, 3 male students and 5 female students. The object of the research includes Javanese speaking skills. The research design used is the Kemmis and Mc. Taggart model. The research was conducted in two cycles with each cycle consisting of four stages (Planning, Implementation, Observation, and Reflection). Data collection techniques were observation, field notes, and students' Javanese speaking performance assessment. Data analysis techniques used descriptive quantitative and descriptive qualitative. The results showed that the application of the role-playing learning method with storytelling media can improve the Javanese speaking skills of fourth grade students of SD Negeri 2 Saradan Baturetno as evidenced by the improvement in the results of the pre-cycle, cycle I, and cycle II speaking performance assessments. The average value of the pre-cycle speaking performance assessment results of 53.25 with a percentage of student completeness of 0% increased to 62.63 with a percentage of completeness of 37.5% in cycle I. In cycle II with improvements in cycle I, the average student score was 78.88 with a percentage of 100% completeness.

Keywords

Javanese Speaking Skills, Role Play, Storytelling



Impact of Science, Technology, Engineering, Mathematics (STEM) Assisted with Scratch Media, Improving Mathematical Logical Thinking Ability Students In Primary School

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Abstract

The STEM approach has a role that can be influential in the maintenance of education as it can integrate subjects with the use of technology. Through the STEM approach the presentation of the learning process can be packaged in an interesting way and is expected to arouse the motivation as well as the ability of students to think mathematically and logically. The research focuses on the use of STEM approaches to mathematical learning assisted with Scratch media to improve students' ability to think mathematically logically. This research is aimed at finding out the effectiveness of the application of STEM learning in primary schools. The method used is a quasi-experimental non-equivalent design research method. The participants in this study were 47 primary school students who were in Karawang, West Java. In the study, tests were conducted in the form of pre-test and post-test to collect data on the effectiveness of the learning process performed using the STEM approach. Test measurements in this study using indicators of mathematical logical thinking capabilities include: 1) Giving logical answers; 2) Integrating understood concepts with facts; 3) Thinking critically in search of logical-based responses; 4) Integrating mathematics problems rationally; 5) Logically concluding answers. The results showed that there was an improvement in the ability to think mathematically logically in students who gained learning with the STEM supported media application scratch as well as there was the influence of learning using the Scratch supported STEM approach on the improvement of the students' mathematical logical thinking ability.

Keywords

Science, Technology, Engineering, Mathematics (STEM), Media, Logical Thinking Ability, Student, Primary School, STEM Approach

Campus Grid Deployment with Automation

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Abstract

Campus grid is a feasible deployment of grid computing since campus environment is equally controlled and the managerial permission is simpler than any other industries. The usability of grid computing is also potentially high, because of the numerous demands from students or researchers in need of high-end computational power and data storage. However, automated efficient way of campus grid platform deployment has never been disclosed, therefore we propose a methodology to deploy a campus grid with automation based on the desktop-grid architecture. Some related issues and challenges that are currently being addressed, with improvements further to be explored, are presented in this paper. Large scale campus grid deployment in this campus involving multiple computer labs and hundreds of computers in total was accomplished, by combining both automation scripts and manual intervention. The chosen campus grid software system is Berkeley Open Infra-structure for Network Computing (BOINC). This practice is expected to guide future BOINC campus grid administrators to establish a working grid computing system, in order to provide grid-based computing and storage resources for running especially heavy simulation programs.

Keywords

Autolt, BASIC script, BOINC, Campus Grid, Centralized Software Deployment, EMCO, Malaysian Grid



Students Self-Efficacy in Solving Geometric Problems: Case Study in Private Junior High School in Malang City

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Abstract

This research aims to describe junior high school students' self-efficacy in solving geometry problems. Instruments include the Self-Efficacy Questionnaire (SEQ) and the Geometry Problem Solving Test (GPST). The research instrument has been validated by three senior lecturers with doctoral degrees in mathematics education. The readability test was carried out by two mathematics teachers and two students from State Junior High School in Surabaya, purposively selected 9th grades of Junior High School Muhammadiyah 4 Malang City, consisting of 6 boys students and 3 girls students who were divided into low subject, medium subject, and high subject groups. The research results showed that low subjects were only capable at the analysis stage, but not at the exploration, planning, implementation, and verification stages. Medium subject is capable at the analysis and exploration stage, but not at the implementation and verification stage. High subjects are capable of all problem-solving indicators. Each subject has different self-efficacy, as well as geometry abilities. It is recommended that future researchers develop and test other subjects according to the education level of junior high school students.

Keywords

Self-Efficacy, Students, Solving Geometry Problems



Clinical Competence and Transition Experiences of Novice Nurses

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Abstract

Novice nurse is one with limited work experience who may never have faced real-life problematic situations and their transition process experienced is associated with feelings of confusion, uncertainty, and stress. The study aims to determine the clinical competence and transition experiences of novice nurses. This research utilized both quantitative and qualitative methodologies. In this study, thirty (30) new nurses in General Santos Doctors Hospital were purposively sampled that answered the modified "Clinical Competency Questionnaire" then six (6) were randomly selected to participate in the focused-group discussion. The results of the study revealed that novice nurses were satisfactorily competent in terms of delivering safe and quality care, communication, collaboration and teamwork, ethico-legal-moral responsibilities, and management of resources and environment. More so, there were five themes emerged after the focused group discussion that described their transition experiences: (1) Difficult and Challenging, (2) Striving and Thriving, (3) Acceptance and Adjustment, (4) Tolerance and Receptiveness, and (5) Fulfilling and Rewarding. The study findings concluded that novice nurses possessed satisfactorily competence which signified low level of confidence in performing various nursing jobs and their transition experiences also implied weakness to perform their roles and responsibilities. Therefore, it would be essential to create a transition to practice program to provide support strategy for novice nurses to transition effectively and a leader-preceptor transitioning would be needed for nurse leaders and managers to provide the necessary skills to preceptor new nurses and be physically and psychologically prepared and equipped for the role.

Keywords

Novice Nurse, Clinical Competence, Transition Experiences, Transition to Practice Program, Leader-Preceptor Transitioning

Modeling the Instructional Design of an Open Educational Resources for the Arts and Design Track of Mapúa University

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Abstract

In the realm of education, Open Educational Resources (OER) have garnered considerable attention as a prospective permanent solution for enhancing access, quality, and affordability of digital learning materials. (UNESCO, 2020) In the Philippines, there is only one recognized OER developed by the Philippine Department of Education called DepEd Commons. There are existing general guidelines on OER content usage. However, without specific criteria, there will be challenges in its accuracy, alignment, and appropriateness that are linked to the intended learners. This research focuses on the Arts and Design track with 100 student respondents from Mapúa University Senior High School based in the Philippines. Using a comparative thematic analysis, importance, and effectiveness survey, the primary objective is to formulate a model for OER instructional design tailored to this track's specific instructional needs. The comparative thematic analysis benchmarked DepEd Commons and the top three OER platforms ranked by weareteacehrs.org. The thematic coding postulated User Interface and User Experience elements, generating three content guidelines. Organized content covering visual appeal and content presentation; Accessibility content ensuring inclusivity and accessibility to diverse learners; and interactive content emphasizing gamification and collaborative creativity. Grounded by the connectivity theory, the relationship of its content guidelines with the respondents' instructional needs established a model envisioned to enrich the track and their learning experience. This concluded that collaborative and dynamic learning cultivates a commitment to lifelong learning, particularly emphasizing the arts, design, and new media.

Keywords

Open Educational Resources (OER), Digital Learning Materials, UNESCO, Mapúa University Senior High School

Elevating Visual Interaction: Exploring GAN-XGBOOST Integration in Augmented Reality for Advanced Information Communication

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Abstract

Augmented Reality (AR) integration enhances information communication by overlaying digital content onto the real-world environment, providing users with a seamless and interactive experience. This advanced technology allows for the integration of real-time data, 3D models, and contextual information, fostering a more immersive and engaging interaction between users and their surroundings. In the realm of augmented reality (AR), this research pioneers a novel integration of Generative Adversarial Networks (GANs) and XGBoost, presenting a groundbreaking approach to enhance visual interaction and information communication. By synergizing the generative capabilities of GANs with the predictive power of XGBoost, our proposed framework empowers AR applications to dynamically generate and adapt visual content in real-time, significantly improving user engagement and experience. The novelty of our work lies in the seamless fusion of GANs and XGBoost, creating a symbiotic relationship that not only refines the realism of generated content but also optimizes its relevance based on user context. The model achieves a remarkable accuracy of 99%, indicating its overall correctness in classifying visual and informational elements. This integration enables AR systems to intelligently respond to user interactions, providing a personalized and immersive experience. The significance of our research extends to various domains, including education, gaming, and professional training, where effective information communication is paramount.

Keywords

Augmented Reality, GAN, XGBoost, Visual Interaction, Information Communication, Real-time Generation





Deduplication Methods Using Levenshtein Distance Algorithm

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Abstract

The study aimed to propose methods to improve the data integrity of the Relational databases such as MS SQL, MySQL and PostgreSQL via record duplication detection. The FODORS and ZAGAT Restaurant database benchmark datasets have been utilized to facilitate the processes involved in preparing and delivering high-quality data. Furthermore, the Levenshtein distance algorithm was used to propose three (3) methods namely: default, eliminating equal string, and knowledge-based libraries to cut duplicate records in the database. In the 70% selected threshold, the average detected duplicate records of 88 out of 112 records in the restaurant dataset. Finally, to efficiently detect duplicate records in the database, depend on the data being analyzed and threshold selected.

Keywords

Data, Efficiency, Information, Quality, Record



The Associations of Color Adjectives and Color Preferences among Children Aged 9 to 12

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Abstract

The current literature lacks information on how children associate colors with their content. This study investigated children's personal color preferences to explain their associations with color adjectives. The experiment was divided into two stages: (1) color association vocabulary collection and (2) investigation of color adjectives and color preferences. Five elementary school teachers and thirty children aged 9-12 separately participated at these stages. The results of this study found that: (1) the number of abstract words extracted was 227, (2) preference affects the association of adjectives in color, (3) cultural differences affect the perception of color, and (4) difference of the preference color in gender. In the future, the color association caused by media changes may change from time to time. The results of this research can help children use color in learning.

Keywords

Color Adjectives, Color Preferences, Children





Research on using Game Teaching Aids to Train Visually Impaired Preschool Children's Oriented Actions

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Abstract

Oriented mobility skills are an important key to the development of visually impaired children in various fields. They must be learned from early childhood to establish a foundation for the future. Each visually impaired child has different physical and mental disabilities and different mobility needs, which makes the supply of such teaching aids to assist walking scarce or even incomplete. This study designs "game teaching aids" for directional action teaching and training. Therefore, this study cooperated with Taichung Huiming School for the Blind and took two visually impaired children aged five to six in the kindergarten department of the school as the research subjects. The experiment requires each child to undergo a "preschool oriented mobility assessment" to discover their mobility problems and usage needs, and to establish the needs and design criteria for oriented mobility teaching aids. Then, use game teaching aids to train and guide the directional actions of visually impaired children to evaluate their acceptance and helpfulness of their own actions. The results of this study can provide reference for the design of teaching aids for blind schools in training visually impaired preschool children in mobility and mobility.

Keywords

Game Teaching Aids, Visually Impaired, Children



Children's Aesthetic Education Development and Cognitive Differences

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Abstract

Nowadays, Taiwan's social living standards have improved, and parents are paying more and more attention to their children's aesthetic and art education. This study used a questionnaire to investigate the learning factors and expectations of parents and children regarding aesthetics education. There are three findings in this study: (1) parents and children have a common awareness of aesthetic education and both learn based on interest; (2) children are worried and afraid if their parents feel that their learning results are not good; (3) Children are more obedient to their mothers when they are studying. The results of this study understand the importance of beauty in education and allow parents and children to understand the differences in aesthetic cognition.

Keywords

Game Teaching Aids, Visually Impaired, Children





The Influence of Product Innovation and Marketing Performance to Maintain Market Leader Position as a Result of an Empirical Study at PT Telkom Indonesia Tbk

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Abstract

Telkom Indonesia is a holding company that provides telecommunication services. Telkom leads the telecommunication market in Indonesia with their strong product portfolio of mobile services, fixed broadband internet and telecommunications. However, to become a market leader in the industry, Telkom has to come up with innovation and effective marketing strategies. This study aims to establish the impact of product innovation and marketing performance towards maintaining market leader position in the industry. To evaluate the influence, a quantitative methodology was implemented. The questionnaire was distributed to the public through social media. IBM SPSS Statistics 26 was used to assess the 400 responses that we collected. The result shows that both product innovation and marketing performance have a significant influence on sustaining the market leader position. This study provides enhanced clarity in understanding the factors that influenced Telkom's position as a market leader.

Keywords

Telecommunication, Telkom, Product Innovation, Marketing Performance, Market Leader



Positioning of Female Actors in News Portals Online Detiksultra.com and Metrokendari.id

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Abstract

The aim of this research is to identify the positioning of female actors on local news portals Detiksultra.com and Metrokendari.id. In addition, researchers also investigate the ideology contained in the two media. This study used descriptive qualitative method. The data collection technique is through note-taking techniques. The analytical approach used is a critical approach, namely focusing on dismantling the hidden aspects behind a visible reality so that criticism and changes are made to a social structure. For this reason, the critical discourse analysis framework of Theo Van Leeuwen is used. The results of this study indicate that Detiksultra.com tends to marginalize the position of female actors in its editorial. This is found through the inclusion model and mostly found is identification and determination strategy. Besides, there is exclusion model that exclude male actors beyond the text. Meanwhile, Metrokendari.id tends to be neutral and upholds caution in publishing its news editorial. It is known from the results of the analysis through the inclusion model that news contains more indeterminations. Thus, the position of female actors is not marginalized.

Keywords

Critical Discourse Analysis, Inclusion, Exclusion, Detiksultra.com, Metrokendari.id



Language Kinship among Javanese and Wolio Languages (A comparative Historical Linguistic Study)

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Abstract

This research aims to describe phonemic correspondences, genetic relationships and indicate the time of language divergence between Javanese and Wolio languages. The theory used in this research is Comparative Historical Linguistics (CHL). The data used in the research consists of 200 basic Swadesh vocabularies and they were obtained from informants using the form of transcribed interviews. The data is analyzed using lexicostatistics and glottochronology methods. Result shows that the percentage of genetic relationship between Javanese and Wolio language is 18%. Out of 200 basic vocabularies, there are 34 cognate pairs, 164 non-cognate pairs and 2 uncounted pairs. Based on lexicostatistical and glottochronological calculations, Javanese and Wolio languages are diverged as separated languages approximately 4,316 to 3,814 years ago. Javanese and Wolio languages belong to the same language family at a subgroup level.

Keywords

Historical Relationship, Javanese, Wolio, Language



Spending Patterns and Perceptions: Malaysian Citizens' Views on the High Cost of Living

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Abstract

The cost of living in urban Malaysia is higher compared to rural Malaysia. Individuals with lower incomes face significant challenges in fulfilling fundamental needs such as sustenance, shelter, healthcare, and education because of escalating expenses. With the increasing cost of living, individuals may face difficulties in effectively managing their financial resources, perhaps leading to an excessive level of poverty. The objective of this study is to measure the perceptions of Malaysian individuals on the escalating expense of living particularly for lower income group (B40), middle income group (M40) and higher income group (T20). The study employed a descriptive research approach, with a sample size of 231 homes from various regions in Malaysia serving as the respondents. The data were obtained using a standardized questionnaire (involved the application of tables and percentages) and further analysis will use SPSS to analyse the relationship between variables. Unfortunately, the results do not indicate a significant detrimental link between consumption and lifestyle. The distribution of respondents across different states in a study might influence the statistical significance of the test results. Some states may have a larger or smaller representation in the sample compared to others. For future study, we suggest using stratified sampling to guarantee a more uniform distribution of responses across states. To reduce measurement mistakes, we should gather data in a methodical and reliable manner.

Keywords

Spending Patterns, Perceptions, Cost of Living, Poverty



Mental Health Care Using IoT, AI, and Blockchain

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Abstract

Mental health has become the most discussed issue in the world. With the increasing cases of mental health among all the age groups especially after the pandemic, researchers are working to use some emerging technologies to handle the issue. The Internet of Things (IoT) is being used increasingly to make health care more affordable and accessible to everyone. Earlier IoT was used to monitor health parameters by using wearables. Extensive research and advancements in the IoT domain have paved the path for tackling issues related to mental health. IoT can be combined with Blockchain, Artificial Intelligence (AI), and Machine Learning to give better results. The IoT wearables are subjected to high risks of malicious attacks due to the health care data. The attackers can compromise the devices and alter the health parameters. This will deliver false information to the doctors, relatives, and the caretakers thus sometimes leading to fatal consequences. Some of the advantages of using Blockchain and AI for IoT health care are: making data management more scalable and reducing the risks of illicit activities. The ability of IoT to obtain real-time data to indicate patterns of activity and behavior of the people and remote monitoring of patients by the health care professionals can contribute to improving the quality of life for the patients and their well-being. This chapter will discuss the effectiveness of IoT systems in combination with AI and Blockchain technology for mental health care.

Keywords

Mental Health, IoT, AI, Blockchain, Security, Privacy



Intelligent Resource Effect on Current Education System

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Abstract

The system's advancements all transpired in step with time, giving kids the finest opportunity to learn at home. There were some obstacles in the way, but they were all overcome with great zeal to provide instruction at that crucial moment. All of these initiatives are beneficial in ensuring that every child has access to quality education. An innovative educational model can enhance the effect of education on individual life for economic benefits and better life quality with the help of digital technology. A multi stakeholders' partnership will definitely help to achieve this goal globally.

The COVID-19 pandemic has presented a significant opportunity to modernize the entire system, with a greater emphasis on digital technology to maintain learning continuity, cross geographic divides, and disseminate the best practices now accessible.

Rather than focusing on teaching children, the entire education system has to be knowledge-centric. Therefore, our next goal is to increase the knowledge of the generations to come rather than their level of education. Many instruments for skill development have been made available by the intelligent education system to help each person to reach their full potential. Every child's confidence will undoubtedly increase as a result of this. There are many opportunities in the world today, and with the help of our technologically advanced system, we can make all the data publicly available so that people may make better decisions for their own futures.

Acquiring information is education's ultimate goal. Getting knowledge depends on several aspects, such as,

- FOCUS
- Resources
- Good mentorship
- Dedication
- Perseverance

All these factors are directly or indirectly contribute to success of a person.

Keywords

Digital Technology, Partnership, Education System, Skill Development





Development of a Virtual Reality-based Forehand Smash Training Model for Table Tennis Athletes

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Abstract

Background: This research background is based on the crucial assumption that skills acquired through virtual reality (VR) based forehand training can be effectively applied in real life. Although, research that specifically tests the validity of these assumptions is still limited to specific applications. This research is expected to provide new insights and enrich our understanding of the effectiveness of using VR to improve forehand skills in young table tennis athletes.

Objective: The aim of this research is to design and develop a model of forehand training in table tennis sports using VR technology specifically for athletes aged 13-17. The model consists of four components aimed at improving motivation, concentration, hand movement techniques, waist rotation, and standing position.

Research Design: Performance in VR-based forehand training is assessed using mixed model variation analysis. This analysis involves inter-subject factors (VR training group vs control group) and intra-subjects' factors. This method of research involved 60 participants, who were subsequently divided into VR training groups ($n = 30$) and non-training control groups ($n = 30$). During the VR training session, participants engaged in a competitive table tennis game against players based on artificial intelligence. An expert table tennis trainer evaluates the performance of participants in table tennis materially before and after the training phase. Without knowing the participant's training group, the expert trainer assessed the participants' forehand in terms of the quantitative aspects (number of rallies without error) and the quality of the skill aspects.

Results: The application of a VR-based forehand training model significantly improved the performance of table tennis athletes compared to the non-VR-based control group, both in terms of quantitative assessment ($p < 0,001$, Cohen's $d = 1,08$) and skill quality evaluation ($p < 0,001$; Cohen's $d = 1,10$). **Conclusion:** The implementation of the VR based forehands training model improved significantly table tennis performance compared with the control group without VR- based forehand training. There was a significant improvement in both quantitation assessment and skills quality assessment.

Keywords

Training Models, Table Tennis, Smash Forehand, Virtual Reality



Exploratory Study of Concurrent Engineering Dimensions on Supply Chain Performance

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Abstract

Supply Chain Performance refers to the actions of an extended supply chain in meeting the ultimate customer's requirements, including on-time delivery, and product availability all the needed volume and inventory in the supply chain to deliver that performance in a responsive way. Define concurrent engineering as the tool in the form of techniques, expertise software, and algorithms and production sequence and, judgment of people who make up the complete design to achieve their business objective. Multiple emerging companies have its focus on the supply chain's value in addition to quality, time, quantity and cost. A survey has been done in Indian organizations to identify the greatest influencing impact of concurrent engineering dimensions in the Indian scenario. Numerous hypotheses were introduced to evaluate the effect of these selected concurrent engineering dimensions on supply chain performance and hierarchical regression has been done for their validation. Finally, the proposed relationship dimensions are revealed by the result: Development time, Manufacturing time, Manufacturing cost, and Quality are correlated to Time, Product cost, Quantity, and Quality which therefore positively affects Supply Chain Performance.

Keywords

Supply Chain Performance, Concurrent Engineering, Dimensions of SCP



The Effect of Market Orientation, Innovation, and Entrepreneurial Orientation to the Competitive Advantage of the Coffee Shops in Indonesia

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Abstract

This study investigates the effect of market orientation, innovation, and entrepreneurial orientation to the competitive advantage of coffee shops in Indonesia. The study adopted qualitative and quantitative approaches, utilizing a questionnaire and in-depth interviews to collect the data. The sample is 200 business owners/ CEOs/managers of coffee shops in Indonesia who have run the business for two years or more. The researcher interviewed respondents who are three business owners/ managers who have a coffee shop that is unique from their competitors. The quantitative data is analyzed using descriptive statistics and multiple regression analysis, and the qualitative data is analyzed using deductive analysis. The findings of the study revealed that market orientation, innovation, and entrepreneurial orientation have a positive and significant effect on the competitive advantage of coffee shops in Indonesia. The most important factor that influences the competitive advantage is entrepreneurial orientation, followed by innovation and market orientation. To gain a competitive advantage, the coffee shop owners/managers must be proactive in regularly evaluating the coffee shop's market position and revenue compared to the competitors and organizing events/ social programs. To be distinct from the competitors, the coffee shops must have signature food or drinks or give a unique name/presentation of the product, or have more variety of menu options, e.g., vegan, healthy, caffeine-free, and dairy-free alternatives. To meet the customer's wants and needs, the coffee shop has to provide high-quality coffee products, offer a variety of flavor options, and create a comfortable place.

Keywords

Market Orientation, Innovation, Entrepreneurial Orientation, Competitive Advantage, Coffee Shop



Mathematical Modeling and Analysis of Variables on MRR in Inner-jet Electrochemical Grinding

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Abstract

Now-a-days most of the aerospace, medical, and tool industries require that the machined products should have precision and must be error (burr, surface scratches, and stress) free. These properties in the hard-to-cut or machine materials cannot be easily achieved with the conventional or unconventional machining methods. Tool wear, melting of workpiece materials and formation of recast layer are the some issues which was observed during machining of difficult-to-cut materials. Electro-Chemical Grinding (ECG) is machining processes which overcome such issues and comes out as highly efficient and low cost process for the application of difficult-to-machine materials. ECG basically combines the electrochemical dissolution and mechanical grinding which incorporates to achieve better MRR as well as surface finish. In this paper, an attempt has been made to develop the mathematical model to predict the material removal rate in inner-jet ECG process. The effect of process parameters such as diamond grain size, pressure of electrolyte, applied voltage, electrolyte conductivity, feed rate and concentration of electrolyte have also been analysed. It was observed that MRR increases with increase in applied voltage and electrolyte concentration. Predicted value of MRR is close to experimental observation with an average error of 11.79%. It was also observed from ANOVA results that the maximum individual percentage contribution of process parameters is diamond grain size about 60.01%.

Keywords

Electro-Chemical Grinding, Mathematical Modeling and MRR.



Adopting Cognitive Theory of Multimedia Learning to develop an Augmented Reality learning kit in Topic of Gravitation in Physics High School

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Abstract

Abstract concept which has been believed to be one of the problems in physics. This paper proposed an integration of Cognitive Theory of Multimedia Learning to develop a learning kit based on augmented reality. Cognitive Theory of Multimedia Learning is believed to guide researchers to develop a meaningful learning kit to help students increase their knowledge in Gravitation. The five principles involved in this theory are Coherence Principle, Signalling Principle, Redundancy Principle, Spatial Contiguity Principle and Temporal Contiguity Principle. Many technologies have been used in producing better learning environment.

The study involves 15 students in a high school. The instruments used in this study are Pre test, Post test and Wilcoxon Signed-Ranks Test. Findings show there was increase in scores after the implementation. The inferential analysis of non-parametric test Wilcoxon Signed-Ranks Test also being done after the implementation of the AR learning kit. The study shows there are significant differences between the mean of the Pre Test scores and the Post Test scores in Gravitation Test ($z = -3.411$, $p=0.001$). The results show that AR learning kit have a significant difference in the scores of Pre and Post test of the students in topic Gravitation by integrating the CTML theory.

Keywords

Augmented Reality, Cognitive Theory of Multimedia Learning, Gravitation, Physics



Local Characteristics in Contemporary Malaysian Art Creation

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Abstract

Contemporary art in Malaysia is a visual representation of Malaysian culture, and its artistic style and characteristics have been formed with the development of Malaysia, presenting a multicultural characteristic. Exploring the local characteristics of contemporary art creation in Malaysia is an important dimension for observing and understanding the spirit of Malaysian culture. This study is based on the contemporary art environment, using cultural symbol analysis methods and style analysis methods to analyze the artistic works of Malaysian contemporary artists from three aspects: theme, style, and characteristics. From the perspective of cultural semiotics, Malaysian contemporary art is expressed and summarized in the main three symbol series, discovering and summarizing the local cultural accumulation, the initiative of Malaysian artists, and Islamic culture. The promotion of the art market has profound significance for the localization construction process of contemporary art creation in Malaysia, and provides some inspiration for current art creation.

Keywords

Malaysian Contemporary Art, Artistic Identity, Local Art, Diverse Exploration

In-Class Flip Model for Mathayom 1 Students in Laboratory Science of the English Program at TriamUdomsuksa Pattanakarn School

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Abstract

The study delves into the intricacies of teaching laboratory science in Thai government schools, grappling with issues like large class sizes and students' low English proficiency. In response, the researcher embraced the In-Class Flip Model, a modification of the Flipped Classroom, wherein students watch recorded videos in class. This adjustment enables teachers to regulate video access, fostering immediate interaction for query resolution.

The preference for the In-Class Flip Model in Thailand is justified due to its enhanced support and monitoring capabilities compared to the Flipped Classroom. Conducted at Triamudomsuksapattanakarn School, the research evaluates the model's efficacy by comparing student achievements in laboratory science classes with and without its implementation.

Methodologies encompass experimental research with two groups, one utilizing the In-Class Flip Model and the other not. The study scrutinizes socio-demographic profiles, correlations between gender/age and achievements, and pre/post-test outcomes. Findings underscore a noteworthy upswing in student achievements with the In-Class Flip Model, affirming the study's hypothesis.

In summary, the In-Class Flip Model emerges as a potent tool for enhancing student achievements in laboratory science, particularly in Thailand's government schools. The study recommends its adoption as an intervention program, contributing valuable insights to the discourse on overcoming challenges in science education within Southeast Asia.

Keywords

In-Class Flip Model, Mathayom 1 Students, English Program, TriamUdomsuksa Pattanakarn School

Effect of Loan-loss Provisions on Loan Growth of Selected Private Commercial Banks in Bangladesh

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Abstract

Non-performing loans (NPLs) exacerbate banks' overall profitability and it becomes a matter of concern for the banking sector. Under the guidance of BASEL III, banks maintain loan loss provisions as a cushion to adapt to the expected loss resulted from NPLs. However, this provision blocks banks' fund for lending purpose and thus creates a hindrance in earnings. The current study focuses on this issue and examines whether the protection in the form of loan loss provision makes any impact on the loan portfolio of banks.

Purpose of the research: The purpose of this research is to monitor the impact of loan loss provision on banks' loan growth and to understand which factors can drive up the efficient credit management to mitigate the NPLs problem for the commercial banks.

Methodology: In order to examine the effect of loan loss provision on commercial bank's lending activity, 15 private commercial banks listed in DSE has been taken as sample. A multiple regression analysis has been done through the SPSS software to identify whether loan loss provision significantly influence the loan growth or not. In this regard, growth rate of loans of the sample banks' has been taken as dependent variable in the model. On the other hand, Bank size, Capital Adequacy, ROE, Cost to Income, Deposit growth, Loan loss provision to total loan, Equity to Total Asset, Loan to Total Asset, Deposit to Total Asset ratio, Inflation, GDP growth have been considered as independent variables.

Findings: The results show that bank size, deposit growth, loan to total asset and GDP growth positively influence the loan growth of selected private commercial banks and these relations are statistically significant. Conversely, Loan loss provision to total loan, Capital Adequacy Ratio, Cost to Income ratio have significant negative influence on the loan growth. This finding establishes the inverse relation between loan loss provision and loan growth. It is because of backward looking provisioning system of banks as it has been observed from the literature review that, non-discretionary loan loss provision system reduces a bank's lending capacity.

Research Limitation: The limitation of this study is that it has been conducted on only 15 private commercial banks which are listed in DSE. Further analysis can be done including more banks in the study.

Originality: The study is an attempt to investigate various banking factors that affect the lending behavior of private commercial banks in Bangladesh. In our concern, no other paper was found focusing on the issue for commercial banks in Bangladesh.

Keywords

Loan-loss Provisions, Loan Growth, Private Commercial Banks, Bangladesh, Non-performing loans (NPLs)



Deep Learning-Based Cancer Classification from DNA Sequences: Prediction using End-to-End Neural Networks without Feature Selection (DRAFT)

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Abstract

In this study, we investigate the application of deep learning models for cancer classification based on DNA sequences, eliminating the need for feature selection. Our exploration encompasses five distinct models: a hybrid CNN-RNN, LSTM, biLSTM, k-NN, and k-NN with PCA. The evaluation centers on their efficacy in accurately predicting cancer from DNA samples, emphasizing the potential of end-to-end neural networks in genomics-based medical applications. Our methodology involves a meticulous assessment of each model's performance, focusing on their unique architectural nuances. Importantly, we scrutinize practical implications, considering factors such as model interpretability, computational efficiency, and generalization capabilities. The findings contribute to advancing our understanding of the application of deep learning in genomics-based cancer classification, highlighting avenues for improving medical diagnostics through advanced neural network architectures.

Keywords

Deep Learning, Cancer Classification, DNA Sequences, Neural Networks



Comparison of SVM and K-NN in Classification Cyber Bullying

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Abstract

The application of machine learning technology in the classification of cyber bullying in WhatsApp groups can have a positive impact in combating the spread of dangerous and detrimental content in the digital world. The machine learning model is trained using training data containing WhatsApp group conversation data that has been classified as cyber bullying or not. In the process, text data from conversations or messages in WhatsApp groups that have been labeled as "cyber bullying" or "non-cyber bullying" are collected and processed thoroughly. Data pre-processing steps such as tokenization, removal of special characters, and conversion of text to numeric form help convert text into a format that machine learning algorithms can understand. Then, using machine learning algorithms such as Support Vector Machine (SVM) and K-Nearest Neighbors (K-NN), the model is trained to recognize patterns and characteristics of texts containing cyber bullying. During the training process, the model is evaluated using validation data to measure its performance in classifying text correctly. Based on system testing results, the Support Machine Learning algorithm obtained an accuracy of 60.00%, with a standard deviation of $\pm 39.44\%$. This indicates that the SVM model has a relatively low level of accuracy and high variation in its performance when tested with various test data sets. For tests carried out using the K-Nearest Neighbors algorithm, the accuracy was 85%.

Keywords

Cyber Bullying, Classification, SVM, K-NN

Tensegrity Structures in Contemporary Design: Exploring the Interplay of Art and Engineering for Aesthetic Appeal, Structural Efficiency, and Sustainable Innovation

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Abstract

This comprehensive research delves into exemplary case studies and research endeavors, illuminating the harmonious integration of art and engineering within tensegrity-inspired designs. The primary focus is on accentuating the intrinsic aesthetic allure and structural efficiency of tensegrity structures, thereby advocating for their seamless integration into design practices. By elucidating the potential and conducive properties of tensegrity structures in fostering design innovation, the study seeks to narrow the gap between architectural concepts and practical applications. The research employs a multifaceted approach involving discussions, case studies, hypotheses, experiments, and conclusive findings to cultivate a nuanced understanding of the aesthetic, structural, and sustainable dimensions of theory-informed design principles, particularly within the realm of tensegrity structures. This qualitative experimental initiative systematically explores the integration of tensegrity structures into diverse design domains, utilizing observation and experimentation. Foundational principles of tensegrity structures serve as a critical framework, facilitating the convergence of theoretical constructs with practical applications. The research extends to various possibilities for utilization and production processes, exemplified by the integration of tensegrity structures with furniture design. This innovative synthesis holds promise for profound applications in contemporary design, where theoretical frameworks seamlessly align with practical implementation. In essence, the study endeavors to explore the application of tensegrity principles in creative design, categorizing works in architecture, interior design, furniture design, and decorative art. This effort establishes a robust conceptual framework that integrates principles from science, engineering, and art, thereby fostering innovative designs with diverse applications.

Keywords

Design, Furniture, Structures, Tensegrity

Maximizing Online Collaboration Tools in Enhancing Student Engagement: A Qualitative Study

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Abstract

This study examined how Online Collaboration Tools are utilized by Junior High School teachers synchronously and asynchronously. Moreover, the challenges and the coping strategies employed have been explored. A semi-structured interview was employed for data gathering. Interview transcripts constituted the collected qualitative data. The qualitative data were analyzed in three major stages: open-coding, axial coding, and selective coding. The thorough analysis of the data resulted in five major themes that represent the findings of the study: 1) teacher's understanding of OCTs, 2) uses of OCTs synchronously and asynchronously, 3) student-related challenges, 4) teacher-related challenges, and 5) coping strategies. Results reveal that teachers employ OCTs in their instruction to improve student engagement. These tools are mainly employed as they allow students and teachers to collaborate, communicate, and discuss online. Problems arise commonly due to technological concerns, time management, and reduced student participation. Teachers and educational institutions observe means to mitigate the challenges by engaging more in understanding OCTs and improving technicalities.

Keywords

Online Collaboration Tools, Online Distance Learning, Pandemic, Student Engagement

Gamification Techniques in Teaching and Learning Exploratory Courses in Technology and Livelihood Education: A Phenomenological Study

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Abstract

The traditional teaching method has been employed in the educational system for a long time and requires no active engagement from the students, making lessons challenging to comprehend. The use of gamification techniques in learning, on the other hand, removes the formalities of learning and allows learners to learn while having fun. This qualitative phenomenological study aimed to investigate the students' perspective on using gamification techniques in teaching and learning exploratory courses in Technology and Livelihood Education. The study explored the game experiences of 7 participants who experienced and were affected by using gamification techniques in education. This study used the Modified Stevick-Colaizzi-Keen phenomenological method of data analysis to examine the participants' transcripts. Analysis of the data gathered during the interviews developed four themes: 1) Connect: Building relationships; 2) Change: Traditional schooling is too formal and Boring; 3) Captivate: Learning is fun when it is linked to memorable experience; 4) Compete: To compete and be recognized. Findings from the study recommended the following: a) educational institutions should consider including the use of gamification techniques in their curriculum to provide students with appropriate learning opportunities; b) researchers and developers can create more engaging resources for students' enjoyment and learning; c) school administrators should consider enrolling teachers in professional development seminars and training linked to gamification approaches; d) future scholars can choose to perform a qualitative and quantitative study on their subject areas to add to the body of knowledge in this understudied field, and e) future study collaborations on the application of gamification approach in teaching and learning can be done with educators from other countries.

Keywords

Gamification Techniques, Games, TLE, Exploratory Courses

Architectural legacy: French Colonial Administrative Building in Cambodia

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Abstract

The study focuses on the architectural landscape of the French colonial period in Cambodia, specifically emphasizing office architecture. The topic was chosen due to the paramount importance of understanding the French influence, the amalgamation with indigenous traditions, and the architectural evolution in the region.

The French colonial era distinctly shaped the architectural identity of Cambodia, leaving lasting imprints on its built environment. Examining the architectural developments during this period is crucial for unraveling the complexities of cultural assimilation, power dynamics, and the fusion of Western design with local influences. By scrutinizing the French architectural footprint, nuanced insights into historical exchange and adaptation emerge.

Keywords

Cambodia, Administrative Buildings, Characteristics, The French Colonial Period, Cultural Context, Traditional, Climate, Adaptation

Pilot Studies to Produce Steel from Mill Scale: Novel Approach to Recycle Waste Material

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Abstract

Mill scale emerges as one of the byproducts rich in iron, originating from the steel production process within hot-rolling steel companies. Typically constituting 1% to 3% of the weight of the steel subjected to milling, this study focuses on the transformation of mill scale into Direct Reduced Iron (DRI) through an induction furnace, leveraging the reduction process. The research commenced with the design of a suitable induction furnace, exploring various process parameters related to processing, optimization, and characterization. The induction furnace underwent scrutiny involving different combinations of mill scale, reducing agents, time, and temperature. However, challenges arose during the introduction of mill scale with reducing chemicals into the furnace, leading to practical issues, notably damage to the furnace lining. To overcome this obstacle, a crucible with a neutral lining material was introduced, resolving the furnace lining damage. Subsequently, bridging issues were identified within the furnace, posing a safety concern by impeding the uniform distribution of heat in the reaction mass. This challenge was addressed by forming lumps of raw materials with reducing agents, subsequently charging them into the furnace for processing. In the final step, the successful production of DRI from mill scale, a waste material, was confirmed by XRD and EDAX characterization. This research not only sheds light on the creation of value-added products from waste but also contributes to preventing losses within the steel industry, reducing pollution loads, and opening avenues for environmentally sustainable practices in the stainless steel sector.

Keywords

Circular Economy, Material Recycle, Induction Furnace, Direct Reduced Iron

Crossing Cultural Boundaries: An Analysis of the Innovation Path of China's Opera A Dream of Red Mansion

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Abstract

The success of the English opera Dream of Red Mansions overseas is a phenomenal event. This also shocked Chinese opera creators and promoted the reflection of Chinese opera creators. Based on this background, this article carries out the study of the English opera Dream of Red Mansions. This article discusses the reasons for the success of the Dream of Red Mansions through the research on the adaptation strategies of the opera Dream of Red Mansions, such as the choice of storyline, the consideration of character selection, the deviation of the narrative perspective, the innovation of artistic presentation form and the design of the narrative structure. And this article uses a comparative case analysis to compare the English version of the opera Dream of Red Mansions with other existing opera examples in China, and obtains the advantages of Dream of Red Mansions in artistic creation. Therefore, this article firmly believes that the success of the Opera Dream of Red Mansions has set a model for the world dissemination of Chinese drama: facing the world with Chinese characteristics, showing it to the world with full cultural self-confidence, and respecting the subjectivity and cultural uniqueness of the work, creating a masterpiece with unique Chinese cultural spirit and cultural philosophy in the context of Western discourse.

Keywords

Opera, Dream of Red Mansions, Comparative Research, Chinese and Western Integration



Optimization of Tensile Strength and Shrinkage on R-ABS And ABS Blend using Taguchi and PCR-TOPSIS Method

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Abstract

The growing focus on ecological balance has led to the exploration of alternative materials and recycling methods, such as blending recycled ABS with virgin ABS. This approach not only reduces plastic waste but also enhances the composite's mechanical properties and overall quality. Tensile strength is crucial for the performance and quality of the final product. The Taguchi method, a statistical technique for designing experiments, has been successfully applied to optimize injection molding processes. This study uses Taguchi and PCR-TOPSIS techniques to maximize the tensile strength of a mixture of recycled and virgin ABS and minimize shrinkage. The research findings indicated that the ideal parameters were achieved by combining a mixing proportion of 70:30, a mold temperature of 60°C, a melt temperature of 230°C, and a packing pressure of 150 Bar. Among the four criteria, the packing pressure is the most essential factor.

Keywords

ABS, Alternative Material, Recycle, Taguchi Method



Empower Recruit

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Abstract

Due to changing employment market dynamics and trends, campus placements at higher education institutions around the globe encounter several difficulties. Our creative website was created to address these problems and address the difficulties that the placement process is now facing. Operating inside the placement ecosystem, the website provides a complete platform that meets the demands of universities, students, administrators, and recruiters. One of the website's primary characteristics is that it has several login roles for colleges, students, administrators, and recruiters, which guarantees each user group individualized functioning and access. In order to guarantee flawless performance and a positive user experience, administrators supervise the platform's entire operation. The platform is used by recruiters to expedite the hiring process by utilizing cutting-edge capabilities for prospect search, evaluation, and selection.

The platform helps universities enhance their placement services by providing insights into placement trends and outcomes, as well as better coordination between recruiters and students. Specific employment recommendations, in-person encounters with recruiters, and personalized profiles all improve students' chances of securing their ideal profession. The website addresses issues and trends around university placements using data-driven strategies and cutting-edge technologies. The platform seeks to transform campus placement with its user-friendly design, cutting-edge functionality, and data-driven insights. Increased efficacy, transparency and success will accrue to all involved participants in the process.

Keywords

Cultural tourist attractions, Bangkok Yai Canal, Thonburi District, Bangkok



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The Cutting Parameter Optimization of CO₂ Laser Cutting with Taguchi-Grey Relational Analysis Method

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Abstract

Acrylic is extensively used in automotive, electronics, and advertising due to its light, transparent, and easily machinable properties. This research aims to determine the optimal cutting parameters for acrylic in CO₂ laser cutting using multi-response optimization. Taguchi-Grey Relational Analysis was applied in this research to find the optimal parameters. Four parameters were considered in this research, namely - laser power, feedrate, nozzle distance, and acrylic thickness. Those parameter's effects will be studied towards two responses, namely surface roughness and dimensional inaccuracies. Employing the Taguchi method with L16 orthogonal array, the grey relational analysis identified the optimal cutting parameters as follows: 90% of laser power (LP), 10 mm/min of feedrate (F), 5 mm of nozzle distance (ND), and 4 mm of acrylic thickness (T).

Keywords

Taguchi Method, Gray Relational Analysis, Laser Cutting CNC machine



Cultivating Understanding: A Systematic Review of Factors Influencing Consumer Purchase Behavior in the Organic Food Landscape

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Abstract

In recent decades, the global interest in organic food has steadily risen, prompting increased scholarly attention to unravel the complex motivations and barriers influencing its consumption. Despite a plethora of studies on the subject, there exists a lack of cohesive synthesis in literature. This study addresses this gap by conducting a systematic literature review that comprehensively analyzes the factors and challenges influencing the purchasing decisions of organic food. Drawing from 59 empirical research articles spanning from 2019 to 2023, various theoretical frameworks, including the Theory of Reasoned Action, Theory of Planned Behavior, Value-Belief-Norm, Attitude-Behavior-Context, and Value-Attitude-Behavior Hierarchy, were employed to categorize identified motives and barriers. The main findings of this systematic literature review encompass several key aspects: firstly, the provision of descriptive statistics about the chosen studies; secondly, a comprehensive synthesis of the factors discussed in the selected studies, employing various theoretical frameworks; thirdly, identification of potential possibilities for future research; and finally, the implications of these findings for scholars, managers, and policymakers seeking to enhance their understanding of organic food consumption-related issues. This review paper significantly contributes to education (SDG4) by sharing insights, drives innovation (SDG9) in sustainable agriculture, aids policymakers in building resilient, organic food systems in communities (SDG11), and fosters collaborative partnerships (SDG17) for holistic sustainable development.

Keywords

Barriers, Factors, Motives, Organic Food, Purchase Intention, Purchase Behavior



Exploring the Relationship between Entrepreneurial Orientation and Ethics among Malaysian Women-owned MSMEs: A PLS Analysis

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Abstract

Entrepreneurship is vital for modern economies, with entrepreneurial orientation (EO) being key for micro, small and medium-sized enterprises (MSMEs) to thrive. This study addressed the literature gaps by examining the EO, ethics, and business performance in women-owned MSMEs in Malaysia, considering the gender variations. The ethical dimension's role in influencing business performance was explored, leveraging the Partial Least Square (PLS) approach and data from 207 women-owned MSMEs. Three pivotal EO elements—risk-taking, proactiveness, and innovativeness—were identified through PLS regression analysis. The study enriched the literature by empirically probing connections between EO subcomponents, ethics, and business performance in underexplored Malaysian women-owned MSMEs. Findings underscored the critical role of EO and ethical practices in entrepreneurial success. Policymakers could glean valuable insights to develop supportive policies for women-owned MSMEs in Malaysia, emphasizing the need for user-friendly, consistent, and standardized policies across all MSMEs' sectors. Overall, this research contributed to fostering entrepreneurship, ethical practices, and gender equality, indirectly impacting SDG 4 by providing practical insights into entrepreneurship that benefit the learning and development of MSMEs.

Keywords

Business Performance, Entrepreneurial Orientation, Ethics, Women-Owned MSMEs



Risk Assessment of Fire Protection Pumps at The Faculty of Applied Science Building

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Abstract

Thailand has many large buildings. The fire protection systems in high buildings must be inspected and maintained so that they are ready to use in the event of a fire. The Hazard and Operability Study (HAZOP) was used for the pumps risk assessment of the fire protection systems of the Faculty of Applied Science building, King Mongkut's University of Technology North Bangkok (KMUTNB). From examining the fire pump and jockey pump of the fire protection systems, it was found that both pumps have never been damaged and need not be replaced. The pumps of the fire protection system are ready to use in the event of the fire and will provide safety to the people who use the building as well.

Keywords

Building, Fire pump, Jockey pump, Risk assessment

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A Systematic Review of Economic Policy Uncertainty and Sustainable Development Goals: Climate Action Center

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Abstract

This study investigates the relationship between Economic Policy Uncertainty (EPU) and Sustainable Development Goals (SDGs), with a specific focus on SDG 13 addressing climate change. The introduction highlights global concerns regarding emissions, economic expansion, and natural resource depletion, emphasizing the importance of the SDGs, particularly SDG 13. The study focuses on Malaysia, exploring its commitment to international climate agreements, including the National Policy on Climate Change and its adaptation efforts. The Malaysian Development of SDG section examines the involvement of Malaysian companies in the UN Global Compact, highlighting their contributions to sustainability. The economic, social, and environmental aspects of SDGs in Malaysia are discussed, emphasizing the country's transformation into an upper-middle-income economy and its progress in poverty eradication, healthcare, and climate resilience. Various studies on the intersection of SDGs and social work, corporate financial performance, energy efficiency, and poverty distribution in Malaysia are presented. In summary, this study contributes to the limited but growing body of literature on the intersection of EPU and SDGs. It calls for further research across different nations to formulate appropriate policies that align with sustainable development objectives. The study recommends future research to conduct pre and post analyses of carbon emission trading in relation to EPU and climate change action.

Keywords

Climate Change; Economic Policy Uncertainty; Sustainable Development Goals; Sustainability



Conditions to Build a Framework of Sustainability Indicators in Tourism (Case: Suchitoto)

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Abstract

It is unavoidable to mention that the tourism sector is increasingly gaining importance on the international agenda due to the economic benefits it brings and which in a very concrete way is summarized in the contribution it generates in the formation of the gross domestic product of several economies worldwide but also due to the very concern of climate change and of course that El Salvador, as part of the Central American region, is also moving in the same direction. However, it is important to delve deeper into whether the economic benefits generated at the country level through the attraction of tourists are developed under the paradigm of sustainable tourism, that is, aligned with its sociocultural, economic and environmental benefits, but in each of the territories in which there is a tourist destination.

Precisely the objective of the project focuses on identifying the conditions that exist to adopt a sustainable tourism strategy in the municipality of Suchitoto, using a qualitative research approach through a case study and supported by participant observation and not participant complemented with interviews with the different key actors linked to the activity of the destination under study.

The tourist destination as such has several attractions for which it is already part of the guided tours carried out by mostly foreign tourists who like experiences ranging from hiking, contact with nature, landscaping, and coexistence with local people; Now, the path to adequately enhance the sustainability of the destination and each of its actors begins precisely with the proposal of a sustainability observatory that manages different indicators that help preserve sociocultural and environmental conditions and contribute to the social development of their communities, educational, economic and technological.

Keywords

Tourism, International Agenda, Central American Region



Simulated Learning: Integrating Virtual Reality as a VLE with Education of Disabled Students and It's Procedure and History

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Abstract

Online or Virtual Learning has become a common place environment for education for many years now and has become a widespread phenomenon due to the influx of schools and institutions which had to switch to Online Learning due to the COVID pandemic. This research is done to show how Virtual Reality, a technology used to create 3D environments can be used as a Virtual Learning Environment (VLE) and can influence the education of those who are physically or mentally challenged and cannot study at a direct school. This research is serving as a foundation to show the impact of this program and its effect on the quality of learning environment

Keywords

Virtual Learning Environment (VLE), Online Learning, Virtual Reality, Disability (physically or mentally challenged), Theoretical



Advancing the Circular Economy within State University Systems: A Framework for Managing Complex Cross-Campus Material and Energy Flows

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Abstract

As centers of knowledge and innovation, universities have a crucial role to play in advancing sustainability transitions through the adoption of circular economy (CE) principles. However, decentralized campus operations present significant challenges for managing complex material and energy flows across academic departments, facilities, and supply chains. This paper develops an integrated framework to guide CE implementation within state university systems to promote resource efficiency, waste reduction, and environmental stewardship across campuses. A critical review of the literature traces the evolution of CE from ecological and industrial systems theories and examines existing campus CE frameworks to identify limitations in managing interconnected sustainability flows. The study proposes a nexus approach conceptualizing university systems as dynamic socio-technical ecosystems involving physical, digital, and organizational dimensions across which CE principles need coherence. Mapping of campus infrastructure and asset flows coupled with models of circular resource cascades inform the outline of procurement, design, and operational guidelines. Importantly, the framework offers assessment tools to evaluate decentralized initiatives against system-level impacts. A detailed roadmap recommends policy levers, pilots for validation and scaling, and change management strategies to foster a conducive environment for CE adoption. As universities occupy a unique niche within society, this systems-focused framework to proliferate CE practices leverages that positionality to inspire bottom-up, top-down, and peer-to-peer sustainability transitions more widely. With identifications of limitations and future research needs, the paper calls for university administrators, facilities managers, and sustainability officers to embrace the framework to lead by example in responsible resource management.

Keywords

Circular Economy; Systems Thinking; Nexus Approach; University Systems; Sustainable Development Goals

AURA (Audio Utilization for Remanufacturing Adaptions)

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Abstract

This revolutionary venture harnesses the electricity of automation and creativity to revolutionize the way we have interaction with tune and audio content material at the internet. In a virtual age wherein tune is conveniently to be had online, the task's primary recognition is on streamlining the extraction and downloading of track and audio from various online assets. by using imparting an automatic solution, it simplifies the technique for customers who want to experience their preferred song and audio content material offline, making it less complicated to curate non-public collections or share content material with others. What actually units this challenge apart, however, is the concept of abstracting track documents. as opposed to simply handing over uncooked audio documents, the assignment takes a bold step by means of transforming them into precise creative representations. This fusion of generation and creativity adds an interesting measurement to track accessibility, transcending the conventional revel in of downloading and being attentive to music. The method of abstracting tune documents includes making use of various inventive and aesthetic filters, algorithms, or alterations to the audio content, ensuing in visually stimulating and emotionally evocative representations of the tune. those summary representations may be thought of as visual interpretations of the audio's rhythm, melody, and mood. by doing so, the assignment breathes new life into audio content material, making it greater attractive and appealing to a broader target audience. In essence, this project now not handiest simplifies the manner human beings access and store music and audio content however additionally gives a clean perspective on how we can enjoy and recognize those auditory treasures. through combining generation and creativity, it bridges the space between the auditory and visible senses, supplying a multi-dimensional revel in that invitations customers to have interaction with tune in a extra profound and artistic manner.

Keywords

AURA (Audio Utilization for Remanufacturing Adaptions), Audio Utilization

Review on Developing a Platform-Adaptive Spirometer for Evaluating Lung Function

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Abstract

This paper focuses on a device used for medical care treatments known as spirometers. Spirometer was designed to provide a more accurate and efficient means for measuring lung function. Current spirometer designs offer only visible feedback, which can be difficult for patients to interpret. Therefore, the data collected by the spirometer must be calibrated to ensure accurate readings. The widespread presence of respiratory disorders such as asthma and chronic obstructive pulmonary disease (COPD) is increasing globally[1]. There are over 900 million people currently affected. To analyse a diverse models for evaluating lung function that is adaptable and capable of one-to-many communication was the key objective of this paper. The device can be used by patients at home to perform routine respiratory health checks, providing valuable data for pulmonologists and other medical professionals for study, diagnosis, and interpretation.

A pressure difference sensor is used in the design of spirometer to measure and covert changes in pressure into electrical signals[5]. The obtained electrical signals is then processed using a microcontroller[5]. To gain easy access and to analyse more efficiently, the output is connected to desktop [5]. This unit has the potential to predict and monitor the progression of respiratory disorders, and can be used by medical professionals to research and analyze the causes of obstructive and restrictive disorders. The results of the distinct spirometer models are slightly different from those obtained using existing spirometers, highlighting the potential for improvement in current designs. The data gathered from this device will help doctors and other medical professionals in the research and analysis of respiratory disorders.

Keywords

Spirometer, Lung Function, Chronic Obstructive Pulmonary Disease (COPD)





Navigating to Modern Finance: Impact on Chit Funds

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Abstract

Chit funds, a popular financial instrument in India, play a vital role in informal savings and investment practices. These pooled investment schemes involve a group of individuals contributing fixed amounts at regular intervals, with one member receiving the collected sum through an auction-like process. Widely popular in India, chit funds serve as informal savings and credit mechanisms, catering to diverse socio-economic segments. This research paper comprehensively explores chit funds, examining various types and providing insights into the top chit fund companies in India. It conducts a profitability analysis to assess their financial performance. Additionally, the study investigates the impact of modern financial instruments on chit funds, elucidating how contemporary financial tools influence their functioning. Through in-depth analysis, the paper offers a holistic understanding of chit funds, financial viability, and their susceptibility to the influence of modern financial instruments. Profitability is assessed through Net Present Value (NPV) in three scenarios based on the time of lifting the chit, measuring the present value of cash inflows against initial investments. This research paper will investigate the influence of contemporary financial instruments, such as stocks, bonds, and mutual funds, on chit funds. Through an examination of individuals' educational qualifications, income levels, financial goals, and risk tolerance, the study aims to elucidate the interplay between these factors and the dynamics of chit fund participation, shedding light on broader financial inclusion patterns. Research findings indicate that lifting the chit at the end of the period is profitable. Despite a trend towards diversified financial instruments, uneducated, low-income individuals persist in investing in chit funds, emphasizing a need for financial education and inclusion. This research concludes that despite modern alternatives, financial education is crucial for inclusive participation, especially among marginalized groups.

Keywords

Financial Instrument, Financial Viability, Net Present Value (NPV), Risk Tolerance, Financial Inclusion



Best Course Suggesting using Sentiments Analysis

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Abstract

E-learning, also known as online learning, has experienced a significant surge in popularity during the COVID-19 lockdowns. However, the abundance of online information has made it challenging for users to identify the most competitive courses in the global market. In order to solve this problem, the evolution of an online recommendation system is crucial. Such a system would assist users in selecting the finest courses available in the realm of E-learning. The proposed system is developed using web scraping techniques to gather information about available courses from various online learning platforms. To build a robust recommendation system, we employ machine learning algorithms to train models on the collected data. Furthermore, the sentiment analysis results are integrated with additional course attributes, such as popularity, course duration, pricing, and skill level, to create a comprehensive recommendation system. To evaluate the effectiveness of our approach, experiments are conducted using a real-world dataset.

Keywords

Web Scraping, Sentiment Analysis, Online Learning, Course Selection



Cooperative Game Theory in the FPA Contract Mechanism for MRO Materials in the Mining Industry (Case Study of PTX)

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Abstract

This study explores the implementation of Cooperative Game Theory in the context of the mining industry, particularly in the procurement of materials involving various parties such as Vendors, Business Users, and the Supply Chain Management Department. The primary focus is on the mechanism of the Forward Purchase Agreement (FPA), which plays a crucial role in routine activities such as maintenance, especially concerning MRO materials.

In this research, it is found that the application of cooperative game theory in FPA can optimize expenditures by considering various cost scenarios. Through a cooperative strategy approach, the involved parties can reach a more optimal cost agreement, taking into account factors such as inventory costs and potential production loss that could lead to financial losses.

A case study on PT X illustrates the success of using cooperative strategies in identifying unnecessary cost sources and formulating strategies with a tendency towards lower costs.

Keywords

Cooperative Game Theory, Forward Purchase Agreement (FPA), Contract Agreements, MRO



Detect-to-Summarize Network for Video Summarization: A Versatile Approach

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Abstract

The supervised video summarizing architecture known as the Detect-to-Summarize network (DSNet) is presented in this proposed study. Completing the initial video summary approach required a lot of work. The DSNET framework offers solutions that are both anchor-free and anchor-based. The anchor-based method generates temporal interest suggestions to identify and locate the representative contents of video sequences, but the anchor-free method predicts importance scores and segment placements without requiring any prior temporal proposals. Unlike existing supervised methods that formulate the problem as a regression problem without respect to temporal consistency and integrity constraints, our interest detection framework is the first attempt to leverage temporal consistency in video summarization using the temporal interest detection formulation. First, we give a rich sample of temporal interest ideas with multi-scale intervals, which in the anchor-based method account for variations in interest lengths. The long-range temporal features of these recommendations are then retrieved for location regression and importance prediction. Notably, details regarding the accuracy and caliber of the summaries generated are included in both the good and negative sections. We immediately alleviate the limitations of temporal suggestions in the anchor-free technique by directly predicting segment positions and video frame significance ratings. More specifically, it is easy to integrate the supervised video summarization techniques that are widely available in the market with the interest detection system. We use the Tsum and SumMe datasets to evaluate both anchor-free and anchor-based methods. The trial's results clearly show that both anchor-based and anchor-free methods are effective.

Keywords

Modeling, Anchor-Free Detection, And Video-Summarization





A Features Based Machine Learning Prediction Model for Sentiment Analysis on Social Media

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Abstract

Sentiment analysis is discovering the current ideology of a group of people and their thoughts. This Sentiment analysis co-relates the natural reaction of people on social media to reflect their mental status. Sentiment analysis also deals with society's environment and its impact effects towards the media world. However, this is the key task of understanding every part of the world. The evolution of feeling simulates the sentiment behaviours to show different direction of reactions and feeling across time. It can help users obtain a more advanced and detailed understanding of the views and attitudes represented in the content provided by users. The development of social media platforms, such as journals, forums, blogs, micro-blogs, Twitter, and social networks, has fostered sentiment analysis. Competitive advantages for organizations are collecting corporate social media and implementing machine learning algorithms to get valuable insights. Business experience can be valuable when applying user's choice findings to their company's brand and practices. Sentiment analysis can help and figure out what their customers need and want from company items. Market research is perhaps the most important field for sentiment analysis applications, aside from brand perception and customer opinion surveys and feedbacks. This study aims to try to show the crucial way of classifying social media tweets feedback into positive categories or either negative category via using the classifier as a baseline to demonstrate in what manner comments are important based on features for that any business model and their results.

Keywords

Sentiment analysis, Randomforest, Naive Bayes, Logistic regression, Decision Tree



An AI-based serious Mobile Game to Assist Learning between Turkish and English Languages

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Abstract

Globalization impacts various aspects of society, from demographics to culture and politics, making proficiency in a second language essential for job searching and communication. However, students face challenges, such as limited vocabulary, which hinder learning and fluency in the new language. To address this issue, a serious game for mobile devices was developed in Unity 3D, employing Mobile Learning, Digital Game-Based Learning, Software Engineering, and Artificial Intelligence concepts. This game utilizes an AI-based model to adjust the game difficulty dynamically according to the user's performance. A trial was conducted with 27 students over 30 days, divided into control and test groups. The control group played the game only three days at the beginning and end of the trial period, while the test group played it frequently throughout the 30 days. It was expected that, by the end of the period, the test group, having used the game more, would show better results and a significant increase in their vocabulary compared to the control group. The results indicated that students in the test group improved their final scores by 48%, 9.3% more compared to those in the control group (38.7%), thus demonstrating the effectiveness of the game as a learning tool for Turkish and English.

Keywords

AI, Mobile Game, Turkish Language, English Language, Unity 3D





Duo Music Player: Enabling Dual Song Playback for Enhanced Audio Sharing

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Abstract

"Duo Music Player" is a cutting-edge application designed to revolutionize the way users experience music on their Android devices. With its unique capability to play two songs simultaneously, each through different earphones, the app redefines audio sharing and personal music enjoyment. This paper delves into the technical aspects of Duo Music Player, exploring its innovative features and functionalities. By providing a comprehensive overview of its design, implementation, and user interface, this paper aims to elucidate the underlying technology behind Duo Music Player and its potential impact on the music listening landscape. Additionally, the remarkable milestone of over 5.3 lakhs+ fans joining Duo Music Player within two years underscores its widespread adoption and significance in the realm of music applications.

Keywords

Duo Music Player, Dual Song Playback, Enhanced Audio Sharing, Android devices



The Renaissance of Tradition: Reform and Practice of Aesthetic Education in Chinese Universities

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Abstract

Education in aesthetics plays a crucial role in shaping cultural awareness and values of individuals in Chinese society. This paper discusses the cultural tracing and pedagogical practice of university aesthetic education in China to promote the revival of traditional culture. From historical and philosophical perspectives, it investigates the influence of Confucianism, Taoism, and other traditional Chinese philosophies on aesthetic education in universities. By analyzing the current teaching situation in universities, it examines the challenges and opportunities of integrating traditional cultural concepts into modern educational practices. The study emphasizes the importance of incorporating traditional cultural values into the framework of contemporary university aesthetic education and contributes to the discussion on cultural preservation and inheritance in Chinese higher education.

Keywords

Education, Chinese Society, Confucianism, Taoism, Chinese Higher Education



Early Childhood Literacy Program: A Challenge Towards Sustainability in Developing Countries

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Abstract

Childhood education is crucial for lifelong learning. However, sustaining early childhood education programs is a challenge for many developing countries like the Philippines. This paper aims to examine the different challenges in implementing a Day Care Program (DCP) in one of the cities in Eastern Visayas, Philippines. An explanatory case study was used in the study. Particularly, interviews and observations were conducted to gather the data. Participants were the focal person for the Day Care Program of DSWD Region 8, Program Director of city social welfare, DepEd supervisor for kindergarten program, Day Care Workers, and parents. The study finds that the primary needs of DCP is to forge a solid alliance or linkages with NGOs and other agencies of the government, constant professional development for Day Care Workers and supervisors, increase salary and benefits including transparent and viable recruitment and promotion policies, and improvement of facilities and resources (including ICTs). Anchored on these challenges, a model was conceptualized on how to implement DCP, address the different challenges encountered in the implementation of the program, and proposed ways how to ensure the program sustainability, not only in early childhood programs in the locale of the study but in the entire Philippines.

Keywords

Childhood Literacy Program, Childhood Education



The Pursuit of Happiness and the Harsh Realities of Life: A Close Review on Characters in the Select Novels of Thomas Hardy

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Abstract

The present paper attempts to explore the pursuit of happiness and the harsh realities of life from the characters in the select novels of Thomas Hardy. Like many other authors, he used his works to offer new light on the subject, language, style, and method. Hardy's viewpoint on character portrayal is revealed in the current discussion, especially in relation to female characters and a comparable environment. According to Hardy's use of picturesque language to describe men and women in his works, each character has a distinctive feature. This discourse goes into great length into the sad depth of the main characters, Gabriel Oak, Henchard, Jude, and Tess. Hardy continues to be a writer of great power and integrity. Regarding Hardy's writing style, it is admirable since it is uncomplicated, basic, and capable of nuanced connotations. It is also infused with a straightforward dignity and a captivating honesty without any strained aftertaste. In the present paper, Thomas Hardy, a legendary British novelist of the 19th century, is featured.

Keywords

Pursuit of Happiness, Character Portrayal, Power and Integrity, Writing Style



An Experimental Monitoring and Comparative Performance Evaluation of A Solar Tracking-Fixed System

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Abstract

Solar technology has been widely used nowadays because the source of sunlight can be converted into electricity and used by humans on the surface of the earth. The National Energy Policy (NEP) acknowledges the increase in oil prices in 2015 and the global electricity crisis adversely affecting Malaysia, which is solely dependent on oil. In general, when harvesting solar energy can be done, another challenge that will be faced is the inefficiency of solar panel arrays, and insufficient sunlight sources due to weather factors to generate more electricity. To solve this problem, another approach is to build an automatic system that consists of solar panel tracking, Light Dependent Resistors (LDRs), microcontrollers, and servo motors that are used to detect sunlight throughout the day to allow the system to generate maximum electricity. It was found that the voltage output from the solar panel detection approach is higher when compared to the horizontal method which is a fixed solar panel. Therefore, the output generated from the built system will be distributed to the rural population for daily use.

Keywords

Light Dependent Resistors, Microcontrollers, Servo Motor, Tracking System

A Review on Used Cooking Oil Collection Business Process for Bioavtur Feedstock in Indonesia

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Abstract

The global aviation industry has shifted its focus towards the utilization of biofuels, incorporating Sustainable Aviation Fuel (SAF) blends into avtur. In 2023, Pertamina, the leading aviation fuel manufacturer in Indonesia, introduced bioavtur produced from palm kernel oil on the inaugural trial commercial flight. The next initiative aims to increase the production of sustainable fuel to further decrease carbon emissions by utilizing various feedstocks, including Used Cooking Oil (UCO), with a targeted completion date of 2026. UCO emerges as an attractive raw material due to its widespread availability and potential for circular economy initiatives. Although there is potential to enhance the UCO supply for bioavtur production, the effectiveness of the UCO collection system depends on existing infrastructure, economic and socio-cultural dynamics within local communities, and governmental support. The UCO collecting business process is mainly localized and only partially executed. This study aims to provide a comprehensive understanding of the challenges and opportunities involved in developing sustainable UCO collection business processes in Indonesia. Leveraging insights from systematic literature reviews, industrial reports, and case studies, this study examines key factors influencing the design and execution of UCO collection processes. It covers logistical aspects, socio-cultural conditions, stakeholder engagement strategies, and regulatory frameworks. The improvement of the UCO collection proposed in this paper is by enhancing the UCO collection management system to better suit local socio-cultural conditions. This paper is expected to offer a valuable resource for decision-makers involved in revising and executing the UCO collecting method for sustainable bioavtur feedstock.

Keywords

Used Cooking Oil (UCO), Business Process, Collection Process, Bioavtur



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A Monte Carlo Simulation Approach to Assess the Probability of Free Swapping Used Cooking Oil with New Cooking Oil

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Abstract

Used cooking oil (UCO) is a promising resource for creating valuable products like biofuels. It has become widespread by promoting collection efforts to resolve waste oil disposal problems while fostering sustainability and economic progress. Various schemes have been implemented to collect a large amount of UCO by attracting public interest including households and HoReCa. One of the schemes used involves swapping such quantities of UCO with new cooking oil. However, this approach is inefficient as it requires additional efforts and time. This study utilizes a Monte Carlo simulation, a probabilistic model used to predict possible outcomes, to analyze the financial performance of UCO collector. The simulation takes into critical uncertainties that affect the calculation of the income statement, such as operational expenses (fees, storage, transport, labor, overhead costs, price and volume of new cooking oil) and revenue (price and potential volume of used cooking oil). The Monte Carlo analysis results indicate a probability of achieving break-even point, suggesting that implementing proportional swap schemes could be feasible. Sensitivity analysis confirmed that the business's financial performance highly depends upon UCO and new cooking oil prices, requiring a policy to ensure price stability. To develop a large-scale trading system for UCO collection, both regulatory backing and a strong alliance with the principal buyer are essential for the continuity of business. Such measures foster mutual advantage in addressing UCO disposal concerns while upholding economic goals.

Keywords

Used Cooking Oil (UCO), Proportional Swap, Financial Performance, Monte Carlo Analysis

Prospects for Augmenting UCO Collection from Households for SAF Production in Indonesia

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Abstract

Indonesia, the fourth most populous country globally, has a population of 270 million and a growing demand for cooking oil. In 2022, the Ministry of Agriculture reported a 7.6% rise in per capita cooking oil use to 12.28 litres. Based on previous research, multiple rounds of frying cooking oil can lead to the formation of harmful residue containing free radicals. Unfortunately, many Indonesian households still cook with used cooking oil. In 2021, LPEM FEB UI discovered that 86.5% of Indonesian households reuse cooking oil multiple times, and 44.7% use up all their oil. The potential for household “used cooking oil” collection in Indonesia is quite low compared to national cooking oil consumption. A study from ICCT in 2022 highlighted that around 255,000 tonnes of wasted cooking oil were collected from households in Indonesia, equivalent to 0.94 kg per capita each year. In this study, literature reviews and BPS data were utilized to reassess the total capacity of used cooking oil that can be generated at both national and regional levels, with a particular emphasis on the household sector. It considers both the potential size and regional distribution within Indonesia. It has been calculated that the household sector can produce 898 thousand tonnes of used cooking oil per year, with 23.8% in Sumatra, 60.9% in Java, 4.2% in Nusa Tenggara, 5.4% in Kalimantan, 4.0% in Sulawesi, and 1.6% in Maluku & Papua. Moreover, with the assistance of this potential for used cooking oil analysis, a strategy that intends to consistently collect used cooking oil from a regional source to be utilized as a feedstock for aviation fuel (SAF) can be carefully planned.

Keywords

Used Cooking Oil (UCO), Cooking Oil Consumption, SAF, UCO Collection

DC Nano-grid Driven Landsman Converter for Gel Electrophoresis Apparatus

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Abstract

Research institutions are progressively integrating renewable energy sources and DC grid systems, reflecting a strategic alignment with broader sustainability objectives. This transition, however, requires maintaining precise voltage control for specialized equipment like Gel Electrophoretic unit which is critical for ensuring the reliability of research outcomes. In response, this research proposes a DC Nano-grid driven Landsman Converter, designed to enhance Gel Electrophoresis through stable, ripple-free power output. A prototype of the Landsman converter has been developed, which boosts a 12-Volts DC Nano-grid input to 50-Volts DC, 100mA Current output. A Raspberry Pi Pico Microcontroller has been used to precisely control this process to ensure minimal ripple at a switching frequency of 200kHz and achieving an efficiency of 93.78%, thus surpassing traditional power supplies in performance and sustainability. The converter was tested using Agarose gel and Sodium Dodecyl Sulphate-Polyacrylamide Gel Electrophoresis, with a focus on higher limits of 10Kb marker DNA and 10KDa marker protein, respectively, using Tris Borate EDTA buffer to accommodate lengthy, high-voltage electrophoresis runs. These tests confirmed the converter's ability to maintain optimal conditions for Gel Electrophoresis, preventing band broadening and thereby ensuring high-resolution results, with precise separation and minimal DNA stacking overlap. The integration with photovoltaic (PV) inputs highlights the prototype's role in aligning with sustainable development objectives. This development marks a significant step in adapting renewable energy technologies to meet the precise requirements of scientific research, facilitating a transition towards more energy-efficient, cost-effective and sustainable laboratory practices.

Keywords

DC Nano-grid, Landsman Converter, Ripple Reduction, Voltage control, Gel Electrophoresis apparatus.

Staff Level Optimization in an Electronics Manufacturing Enterprise: A Quantitative Approach using Queuing Model

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Abstract

The focus of the study is to evaluate the existing set-up of the electronics manufacturing company in terms of staffing levels. The study aims to describe the current staffing level of an electronics manufacturing company in Cebu, Philippines, identify problems and their root causes, and employ staff level optimization techniques to propose recommendation for the company.

The researchers utilized observation and document analysis to determine the existing staff level and observed the arrival of the orders in the line. The arrival of the orders in the assembly line follows a Poisson distribution (the calculated test statistic for the Chi-square Goodness of Fit Test was 0.8092. Comparing this value to the critical value of 7.81 at a significance level of 0.05) thus queuing theory is applied.

The study concluded that the appropriate number of operators should be observed to improve operator efficiency. The recommended number of servers is 48, which would save the company an opportunity loss of Php21,000 per day. In terms of changes in performance, reducing the number of operators to 48 instead of 57 would improve server efficiency by 15%.

Keywords

Staff, Electronics Manufacturing Enterprise, Queuing Model



Perspectives and Impacts of Spiritual Science on Real Life Practices towards Enhancing the Overall Sustainable Development in 21st Century

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Abstract

Overall development of humans, societies, nation and generations under various components of infrastructure, health sector, value system, cultural, scientific, socio-economic, or psychological balances depends upon their habits, trends and practices. Integrity and well-beingness on raising the standard of livelihood of an individual, family or plethora of ethnic groups develop by practicing the spiritual principles in real-life for solving real-time issues and challenges. Thoughts of Sri Aurobindo, Vedant_Swami Vivekanand in principles of Shreemad Bhagvad Geeta, and Spiritual Sciences form a pious Triveni-Junction that creates bundles of sparks full of supreme divine energy that meets with all requirements, demands and needs of entire humanity, worlds and generations. Such resonance of maximum dynamism and power reception is not unique or rare for anyone to achieve or attain but its resemblance is realized when frequencies of thoughts and actions fully match and enable one to control and in fact surpass the three stages of Lust-Anger-Greed (L-A-G). The T-J of an individual determines the size of one's multiverse and its elements of eating, behavioural, ritual, socio-personal, professional or physical destinations that transform into short-term or life-long-Dhyey. The Dhyey remains a Dream only when the legs of L-A-G are broken or chained tightly, and the Dhyey gets dragged into miserable spheres of life. The soul-core is attaining oneness and being the-one through time-immemorial habits like food, thought and deeds.

Forewords in Principle:

Sri Aurobindo and the Bhagavad Gita share a profound spiritual connection. Aurobindo's interpretation of the Gita emphasizes the synthesis of spiritual knowledge and active life, advocating for a divine life in the material world. He sees the Geeta as a guide to transform human nature and achieve a higher spiritual consciousness. Sri Aurobindo's and Swami Vivekanand's integral yoga aligns with the Geeta's teachings on selfless action, devotion, and the pursuit of knowledge to attain spiritual realization. Overall, both perspectives converge on the idea of transcending limitations and realizing the divinity within, traveling deep inside infinite space.

The Bhagavad Geeta addresses the relationship between science and spirituality by emphasizing the integration of knowledge, action, and devotion. While the Geeta is not a scientific text in the modern sense, it offers insights into the holistic understanding of life.

Keywords

Sri Aurobindo, Swami Vivekanand, Shreemad Bhagvad Geeta, Spiritual Science, Overall Development, Lust-Anger-Greed (L-A-G), Triveni-Junston (T-J).

Optimizing Ethereum Transactional Security: A Comprehensive Approach of Machine Learning & Predictive Modeling for Enhanced Fraud Detection

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Abstract

This research paper introduces a comprehensive methodology centered around Blockchain, Data Source, and Machine Learning to enhance transactional security within the Ethereum network. The meticulously crafted architectural framework provides a structured overview, optimizing parameter utilization and fortifying security measures. Through training and prediction, the Random Forest emerged as the final model with a notable accuracy, supporting the paper's title, "Optimizing Ethereum Transactional Security: A Comprehensive Approach of Machine Learning & Predictive Modeling for Enhanced Fraud Detection." This research not only fulfills its promises but also establishes a benchmark for Ethereum transactional security, showcasing the synergy of Blockchain and Machine Learning in a holistic and efficient solution for secure transactions in the dynamic Ethereum landscape.

Fraud Detection is A Solidity Smart Contract we implement in our Ethereum Blockchain based solution. This technology can prevent financial transaction alteration and maintain tamper-proof systems ensuring that all records are kept safe. It is effective because it guarantees transparency, which enhances safety from fraudulent activities. Integrating blockchain technology makes the entire system safer by verifying all transactions' authenticity as well as eliminating manipulations.

Keywords

Ethereum, Fraud Detection, Modeling, Machine Learning Algorithms, Random Forest, ERC20 Tokens, Data Skewness, Decision Tree Classifier, Gradient Boosting, XGBoost Classifier



Short Term Solar Power Generation Forecasting with AI Based Model

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Abstract

The increasing integration of solar energy into power grids necessitates accurate and reliable short-term forecasting models to optimize energy management and grid stability. This paper proposes an Artificial Intelligence (AI)-based model for short-term solar power generation forecasting, leveraging advanced machine learning techniques. The proposed model integrates historical solar power generation data from CSPTCL to predict solar output power with high precision. The machine learning algorithm employed includes a combination of recurrent neural networks (RNNs) and long short-term memory (LSTM) networks in comparison with ANN, allowing the model to capture complex temporal dependencies inherent in solar power generation. The model are forecasted for a week ahead prediction and the performance of the model are evaluated over MAE, MSE, MAPE and R2. The simulation results demonstrate the effectiveness of the LSTM model over RNN and ANN model in terms of high accuracy. This research contributes to the ongoing efforts in advancing sustainable energy systems by harnessing the capabilities of AI for precise solar power forecasting.

Keywords

Solar Power Generation Forecasting, Machine Learning, Artificial Neural Network, LSTM, RNN

Experimental Investigations on the Behavior of High-Strength Concrete Under Cyclic Loading

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Abstract

It has been established that high-strength concrete (hence referred to as HSC) is very brittle and less ductile in compression and shear; energy dissipation, including seismic energy, can be best achieved through flexure yielding. The confinement of concrete in the form of lateral ties and stirrups promotes ductility, which is a basic requirement of structural components, particularly beams and columns. Many research and experimental studies on HSC subjected to monotonic loads have been carried out by various research teams all over the world; however, there is still a need to understand the behavior of HSC under cyclic and fatigue loading. The demand for higher ductility in HSC members in seismic zones and members subjected to cyclic stresses has grown in importance.

Some significant and noteworthy contributions made can be summarized as assurance of adequate ductility, which can be precisely defined as a reinforced concrete member's ability to deform at or near the ultimate load without significantly losing strength. This is one of the most important requirements in the design of HSC members, and this ductility requirement becomes increasingly brittle. Various mathematical expressions for the ductility of RC elements are developed considering the maximum compressive strain of concrete and the yield strength of steel.

The current study aims to investigate compression, tensile, and flexural behavior. Various HSC models with varying reinforcing grades and percentages will be cast and tested for monotonic, cyclic, and fatigue loads. The stress strain characteristics of HSC under uni-axial cyclic compressive loading will be obtained initially, followed by an investigation of the load-deformation behavior of HSC beams with convectional reinforcement for cyclic flexural loading.

The important finding for the present studies is that (1) the fatigue life of an RC beam is substantially determined by the stress range applied to the steel reinforcements. (2) Repeated loads soften concrete, increasing the tensile strength of the steel reinforcement. (3) The strain life approach was thought to be the best for predicting RC beam fatigue behavior. (4) They emphasized the importance of conducting more research employing fibers or polymer laminates.

Keywords

Cyclic loading, Cyclic Curve, Fatigue curve, High Strength Concrete, Static Loading, Stability Curve





Advanced Surface Geometries and Other Ways to Improve Heat Exchanger Performance: Review

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Abstract

Economic losses stemming from compromised heat exchanger performance underscore the urgency of enhancing their efficiency. This paper investigates diverse methodologies to bolster heat exchanger performance, focusing on advanced surface geometries, coatings, and other techniques. Our methodology involves a comprehensive review of existing research literature. Analysis reveals that optimizing geometrics, manufacturing methods, and surface texturing significantly enhance heat exchanger efficiency, offering promising avenues for industry improvement.

Keywords

Additive Manufacturing, Micro Channeling, Surface Texturing, Topology Optimization



A Study of Pipeline Corrosion, Hydrate Formation, and the Application of Magnetic Flux Leakage as Predictive Controlling Methods: A Case of the West African Gas Pipelines

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Abstract

In this article, the West African Gas Pipeline (WAGP) is used as an example to highlight the significance of treating corrosion and hydrate development in oil and gas pipe-lines. By presenting some findings from the literature and from the area of WAGP, it delves into many types of pipeline corrosion that influence the WAGP. While experts claim that it is difficult to totally prevent these problems, it is important to use Magnetic Flux Leakage (MFL) technology to develop predictive models using MFL data for early identification and management to maintain pipeline integrity. A pipeline flaw can be found using MFL, a non-destructive testing technique. Various corrosion growth models, including deterministic (linear, non-linear, and single-valued) and probabilistic models (Bayesian, Markov Chain and Gamma process), are explored in this article. These models consider uncertainties and probabilistic components to predict pipeline corrosion rates and future states. Finally, we constrained on the significance of predictive strategies for proactively addressing pipeline anomalies and recommended additional research. It also encouraged the oil and gas sector, particularly WAGPCo, to embrace these methodologies for improved pipeline management and safety.

Keywords

Pipeline leakages; Corrosion; Hydrates; MFL; WAGP





Electromyography Signal Classification for Individuals with Diabetes Using Artificial Neural Network and Particle Swarm Optimization

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Abstract

Diabetes is associated with several serious complications, including Diabetic Peripheral Neuropathy (DPN), which can be identified through Electromyography (EMG), a diagnostic procedure. The complexity of EMG signals poses challenges in analysis, often leading to delays in the detection and treatment of muscle and nerve disorders. Consequently, there is a pressing need for more efficient and accurate methods for EMG data analysis. This study aims to develop machine learning models, specifically utilizing Artificial Neural Networks (ANN), to classify healthy individuals and those with diabetes. Muscle Sensor V3 records EMG signals, which are then transformed into a set of features for classification using a feature extraction process. The study further involves the optimization of ANN hyperparameters through Particle Swarm Optimization (PSO) to maximize accuracy. The EMG data analysis reveals that healthy individuals exhibit higher EMG amplitudes than those with diabetes. Furthermore, the classification results demonstrate the effectiveness of the proposed ANN model, achieving an accuracy rate of 94.44%. Hence, the findings confirm that the optimized ANN model using PSO is a promising classifier for distinguishing between healthy individuals and those with diabetes based on the EMG data and methodology adopted in this study.

Keywords

Electromyography; Classification; Diabetes; ANN; PSO



Exploration of Flow Experience in Violin Learning: Enhancing Skills and Inner Cultivation

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Abstract

This study aims to explore the role of flow experiences in violin learning, particularly in terms of facilitating skill improvement and inner cultivation. Analyzing cases of three violin learners from diverse backgrounds, the research reveals the significant impact of flow experiences in enhancing learning motivation, concentration, and technical skills. Findings indicate that learners from various backgrounds achieve growth in both technical and emotional aspects through flow experiences, demonstrating the universal importance of flow in improving violin learning outcomes. Additionally, the study emphasizes the significance of inner cultivation in violin education, highlighting that educators should engage students emotionally and artistically through diverse teaching methods and musical experiences. This research offers new perspectives for violin teaching, suggesting the creation of environments conducive to flow experiences and the adoption of personalized teaching methods to promote comprehensive student development.

Keywords

Flow Experience, Violin Learning, Skill Improvement, Inner Cultivation, Music Education

Obesity and Diabetes Management Using IoT and Machine Learning with an Interactive AI-based Telehealth Platform to Enhance Health Awareness

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Abstract

Obesity and diabetes are common health problems affecting both adults and children in Oman. Prioritizing the development of strategies for diagnosing, managing, and treating these illnesses is crucial to prevent a future increase in their occurrence. To address the present obesity and diabetes-related health issues, a monitoring system was developed to monitor individuals' weight and blood sugar levels using emerging technologies such as the Internet of Things, Artificial Intelligence, and Machine Learning. The designed system utilized Photon Redboard microcontrollers to collect and analyze data from electronic sensors measuring various health metrics such as weight, height, cardiac rate, arterial pressure, blood oxygen level, breathing rate, and glucose levels in the blood level. It then computed the Body Mass Index (BMI), BMR, and PBF. Physiological data collected from sensing devices and anthropometric measurements were stored in cloud platforms and a Firebase database, which can be accessed online and instantaneously via a mobile computing device. The interactive AI-based telehealth platform developed using MIT App Inventor installed on the mobile device assisted in analyzing the patient's weight classification and predicting the onset of diabetes, as well as providing personalized recommendations for lifestyle changes and medical interventions based on the patient's health conditions. If the system detects obesity or the onset of diabetes, the application for mobile devices will display the recommended daily calorie intake and physical activity for weight loss, as well as a referral notification to a medical doctor for appropriate weight and diabetes management. According to the results of the experimental trials, the percentage difference between data acquired from the prototype and certified medical testing equipment for each physiological parameter was no more than 5%. A machine learning polynomial regression model accurately predicted non-invasive blood glucose levels, closely aligning with readings from an invasive method utilizing a commercially available glucose monitor, with a percent difference of under 5%.

Keywords

Internet of Things, Natural Language Programming, Machine Learning, Obesity, Diabetes, Telehealth

Determining Radon Concentration in Water in Dong Pao Rare Earth Mine Area and Neighboring Residential Areas

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Abstract

Dong Pao rare earth mine is a rare earth mine being exploited in Lai Chau province, Vietnam. During the mining process, the flow of groundwater is formed and comes into contact with soil and rock containing Uranium, leading to an increase in water concentration in the mining area and surrounding residential areas. In this study, the radon concentration in the Dong Pao rare earth mine area and neighboring residential areas was analyzed by using RAD7 machine. The results showed that calculated parameters were higher than these of the USEPA and WHO recommended limit.

Keywords

RAD7, Radon concentration

Assessment and Feedback in Higher Education in India: Implementation and Findings

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Abstract

This research paper investigates the implementation of assessment and feedback in higher education in India. The main objectives of the study were to analyze the historical development of assessment and feedback practices in the Indian higher education system, explore current practices, identify challenges and issues faced in implementation, and make recommendations for improvement. The study utilized a mixed-methods research design, including surveys and interviews with faculty members and students, as well as document analysis of assessment policies and guidelines in higher education institutions. The findings of the study revealed that assessment and feedback are important components of the higher education system in India, with a focus on evaluating student learning outcomes and providing constructive feedback for improvement. However, there were several challenges identified in the implementation of assessment and feedback. These challenges included a lack of standardized assessment practices, limited faculty training on effective feedback techniques, and a disconnect between the expectations of students and faculty regarding feedback provision. Additionally, students reported a lack of clarity and specificity in the feedback provided, as well as inconsistent timeliness of feedback. Moreover, the study found that there is a need for greater emphasis on formative assessment practices, which promote active student engagement and self-regulated learning. The results of the study highlight the need for improvements in assessment and feedback practices in higher education institutions in India.

Keywords

Higher Education, Assessment Practices, Feedback Mechanisms, Implementation Challenges, Student Learning Outcomes, Educational Improvement

Recent Trends in Deep Learning based Bone Fracture Detection and Classification System using CT images: A Review based on Challenges and Future Direction

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Abstract

The objective of this review paper is to provide a comprehensive overview of the most modern image processing algorithms available currently for the detection of bone fractures. As the need of quick and precise fracture diagnosis grows, image processing has emerged as a critical tool for enhancing detection approaches. This review objectively assesses a variety of image processing algorithms and highlights hurdles and potential future instruction, in addition to reviewing major research publications and highlighting current advancements.

A thorough review of the literature was conducted in order to identify and assess image processing algorithms utilized in bone fracture identification. The important research publications' methodologies, findings, and contributions were recognized and thoroughly examined. Recent advancements and new tendencies were investigated to offer a current viewpoint on the topic.

The paper divides image processing approaches into methodology and evaluates their advantages and disadvantages. Key research publications are summarized, allowing readers to get insight into the progress of fracture detection systems. Recent advances are highlighted, such as the incorporation of machine learning and innovative algorithms. The paper also addresses challenges such as accuracy, computational efficiency, and real-time applications, proposing potential solutions and avenues for future research.

This comprehensive review consolidates the current expertise on image processing for bone fracture detection. It underscores the significance of image processing in advancing fracture diagnosis and provides a important analysis of current methodologies. By outlining latest trends and addressing challenges, this evaluation ambitions to guide researchers and practitioners in shaping the destiny of image processing applications in bone fracture detection.

Keywords

Bone Fracture Detection, Medical Imaging, Computer-Aided Diagnosis, Biomedical Engineering, Diagnostic Methods, Fracture Diagnosis

Simple Mathematical Modelling of Thai Glutinous Rice, Khao Tan Rice Cracker

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Abstract

Thailand considers rice a crucial economic crop. Significant quantities are consumed domestically and exported annually. Competition in the rice trade market with other countries, particularly with Thailand preparing to join the ASEAN Community in 2015, will impact price mechanisms and product quality. Thailand must inevitably confront the need to enhance the value of Thai rice through diversifying products and further improving product quality. Furthermore, supporting in expanding distribution channels. It also expands choices for consumers. The aim of this work was to investigate the thin layer GIR-HAD drying behavior of crackers at drying temperatures 60 70 80°C. For such purpose the mathematical modelling of the drying curves is presented, a first useful approach to the moisture diffusivity values is given, and finally the activation energy of cracker is evaluated. This work describes the application of GIR-HAD drying technique to crackers, to increase the effective thermal processing. Non-linear regression methods are used to estimate drying coefficients with mathematical models. The results indicated that the Midilli Kucuk model is known to be the best model for all GIR-HAD drying. The drying rate increased with gas-fired infrared intensity, hence reducing the total drying time. The total color difference (ΔE) varied from 21.38 to 25.89 and increasing gas-fired infrared intensity decreased in hardness, chewiness and fracturability of product. The effective moisture diffusivity increased with the GIR-HAD drying varying from 1.37×10^{-11} to 3.64×10^{-10} m²/s. The temperature dependence of the effective diffusivity coefficient was expressed by an Arrhenius type relationship. Activation energy for the moisture diffusion was determined as 19.27 kJ/mol. The specific energy consumption at 80°C was 2.93 kWh/kg of water removed resulting in a 79% energy saving when compared to 60°C. This study provides a way for preparing rice crackers that could be a beneficial option for the industry.

Keywords

Mathematical Modelling, Thai Glutinous Rice, Khao Tan Rice

Effect of Microwave Power and Puffing Time on the Quality of Yam Bean Cracker

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Abstract

Fried crackers have issues with high-fat content, oil absorption, and oxidation during storage. The objective of this research was to study the effect of microwave power and puffing time on the quality of yam bean crackers. The microwave has power settings of 160, 400, and 800 watts, with puffing times for each power setting of 30, 45, and 60 seconds, respectively. The dried semi-product has an initial moisture content of 10 to 12% on a dry basis. The cracker products contained yam bean pulp, accounting for 30 percent of the weight of the cassava starch. The results showed that increasing microwave power and puffing time resulted in a loss of lightness (L^*) and an increase in redness (a^*), with no significant difference in yellowness (b^*) between different microwave powers. Increasing power level and puffing time affected the physical characteristics of the yam bean crackers, resulting in darker-coloured crackers. The expansion ratio ranged from 2.10 ± 0.23 to 5.10 ± 0.30 times the original size of the raw yam bean crackers, with the highest expansion ratio of 5.10 ± 0.30 attained at 800 watts and a puffing duration of 60 seconds. Moisture content and water activity of yam bean crackers decreased with increasing puffing time and microwave power. Yam bean crackers puffed at 160 watts for 30 seconds had the lowest hardness and fracturability values, at 9.23 ± 1.98 N and 5.50 ± 1.66 N, respectively. The yam bean crackers puffed by microwave had a fat content ranging from 0.026 ± 0.054 to $0.201 \pm 0.013\%$, while those puffed by frying had a fat content of $23.33 \pm 1.36\%$.

Keywords

Yam Bean, Cracker, Microwave Power, Puffing Time, Texture



Adopting the Health Belief Model Framework to Explore Factors Affecting STIs Prevention Behaviors among Youth in Vietnam

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Abstract

Sexually transmitted infections (STIs) are currently an important problem for public health in Vietnam, with a steadily rising occurrence rate, particularly among young people. These infections have serious implications for individual well-being, life expectancy, and society's welfare. Preventive behaviors against STIs among Vietnamese youth seem to be widely adopted, posing significant challenges despite the seriousness of the issue as a whole. This research evaluates and investigates the real preventative actions conducted toward sexually transmitted infections by this specific group. Our research explores the factors that affect STIs prevention behaviors by combining the Social Cognitive Theory (SCT) with the Health Belief Model (HBM). We examined data collected from 835 respondents in different regions of Vietnam, utilizing SPSS 26.0 and SmartPLS 4.0 software. The results highlight the major components influencing STIs prevention and supply recommendations for enhancing these preventative actions. The goal of this research is to lower STIs rates while boosting sexual and reproductive health among young adults to guarantee a brighter future.

Keywords

Education, STIs Prevention Behaviors, Health Belief Model, Youth in Vietnam



Revolutionizing Mine Safety and Operations through Advanced Wireless Sensor Networks

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Abstract

The field of wireless communication is improving day-by-day, and its abdominal growth must be a trend setter in today's real-time problem-solving system. Among wired communication system, the wireless network becomes feasible and it might be a replacement of conventional method of which fall into problem such as huge investment on installation and replacement. Meanwhile the system is installed on multiple perspectives. To provide reliable communication platform with low operating cost, the wireless network is implemented on those fields such as telecommunication, internet connectivity, cable television. In recent times, the mining industries facing severe problem due to lack of communication which in turn fails to ensuring the safety of operating personals and loss of materials. As such optimised wireless sensing network (WSN) stepped onto mining industries. This suggested study focusing on overcoming from those difficulties by designing a system which considers parameters namely temperature, gas, and fire. This monitoring system interlinks the workers and fixed base station to know the status of mines and health state of employee. And it would reduce the risk factors and improve the productivity of mine industries.

Keywords

Mining Industry, Wired Communication, Wireless Communication, Embedded System, Sensor, Zigbee network





Motivation of Female Students Enrolled in Computer Science in Nepal: A Narrative Inquiry

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Abstract

In today's digitally driven world, the demand for IT professionals is substantial, yet the representation of females in this field remains disproportionately low. Research has consistently shown that female enrollment in computer science programs at higher education institutions worldwide is limited, a trend mirrored in the context of Nepal. This study explored the motivations of female students in pursuing Bachelor's degrees in Computer Science and Information Technology (CSIT), shedding light on the factors that drive their choices. Employing a qualitative research methodology, the study involved interviews with six female participants chosen from two colleges offering CSIT courses, situated in different districts of Nepal. Within an interpretive paradigm, participants shared their life experiences through a narrative inquiry approach. Their narratives illuminated the various influences on their motivation. Maslow's hierarchy of needs theory was used as the main guiding theory for this study. The research revealed that intrinsic motivation was relatively low among participants. Motivational factors included family support, handsome salary, role models, passion for technology, and the perception of computer science as a prestigious field offering a means for social contribution. Some participants also pursued computer science as an alternative to their initial preferences. The research underscores the need for greater visibility of female role models within the IT field and emphasizes the importance of nurturing individual interests and passions in technology from a young age. These findings offer valuable insights for parents, teachers, and educational institutions. They provide guidance for the development of educational policies that can create an environment conducive to the success of female students in computer-related fields.

Keywords

Female Enrollment, Education, Computer Science, Motivation, Maslow's Hierarchy of Needs Theory



The Evolution of Hemoglobin Measurement with IoT

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Abstract

The development and integration of Internet of Things technology in healthcare systems have opened up new possibilities for monitoring and managing the health and well-being of individuals outside of traditional medical institutions (Yin et al., 2016). This technology has been particularly advantageous for patients with chronic diseases and the elderly, as it allows for remote health monitoring and real-time clinical feedback. By leveraging IoT-enabled smart devices, healthcare providers can collect real-time patient data and transfer it for assessment or self-management. One specific area where IoT technology has shown promising potential is in the monitoring of hemoglobin levels. Hemoglobin is an important protein in the blood that carries oxygen to different parts of the body. Accurate monitoring of hemoglobin levels is crucial for diagnosing and managing various medical conditions, such as anemia and certain types of cancer.

Keywords

Smartphone App , Hgb level Monitor, Image Analysis, Algorithm and IoT.



Passive Fingerprinting of Chat Services: Machine Learning Based Classification for Anonymous Identification of WhatsApp Packets (Encrypted Network Traffic Classification Using Machine Learning Model*)

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Abstract

Passive fingerprinting is the main topic of this work, which employs classification algorithms based on machine learning to identify packets sent by different chat services, with a special emphasis on WhatsApp. This method seeks to categorize packets into chat programs without examining their payloads, to guarantee anonymity, in contrast to conventional TCP/IP fingerprinting that centers on operating system detection. There is a lack of exploration of this innovative analysis method in the literature. Identifying unique WhatsApp packets and, ideally, classifying the contents transmitted via WhatsApp, is the main goal. Data from chat applications still contains useful metadata for passive identification, even after encryption. But it's not easy to handle data at such a high velocity and volume, particularly in real-time systems. To achieve high accuracy, it is essential to efficiently capture and process this data without loss. Discarding useless data post-classification helps with storage and cost management. Results show that neural networks outperform other classifiers, achieving a high f1 score of 0.997 and 99.8% accuracy. Among the classifiers considered, SVM+RBF stands out with an f1 score of 0.996 and 99.7% accuracy.

Keywords

Passive Fingerprinting, Chat Applications, WhatsApp, Machine Learning, Privacy



Rooted in National Identity, Towards the World Stage—Nationalisation and Internationalisation of Chinese Opera

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Abstract

The study thoroughly outlines the evolution of Chinese opera from the late 19th century to the present day, focusing on its nationalisation and internationalisation. The article examines the inception and development of the nationalisation of Chinese opera, emphasising the significance of productions like the “White-Haired Girl” in advancing this process. It highlights how these productions blend traditional Chinese cultural aspects with Western opera styles, showcasing a distinctive national flair and contemporary spirit. The essay also explores how Chinese opera represents the national spirit and incorporates national aspects through vocal music and stage design, enhancing the comprehension and portrayal of China’s rich culture and history.

The study proposes four important components for internationalisation development path: art strategy, market strategy, talent strategy, and communication strategy. The artistic approach focuses on incorporating aspects from The Times and scientific resources while preserving national qualities in the creating process to achieve diversified growth. The market approach emphasises the need of targeting both domestic and international audiences and meeting public demand by studying and drawing inspiration from Western classical operas. The talent plan aims to address the shortage of professional talents and develop modern opera talents through enhancing the education and practice platform. The communication approach focuses on utilising the “celebrity effect” and incorporating pop music elements to broaden the market reach of opera productions, as well as nurturing a new cohort of opera performers to strengthen the impact of artistic expression.

This study discusses how Chinese opera has preserved its national identity while incorporating international influences, highlighting its active role and potential for future development in global cultural interactions.

Keywords

Nationalisation, Internationalization, Chinese Opera, Development Path, Strategy





Navigating The Nexus: AI in Healthcare – Unraveling Policies, Ethics, and The Pursuit of Responsible, Trustworthy Systems Across Time

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Abstract

This research paper delves into the intricate interplay between artificial intelligence (AI) and healthcare, unraveling the evolution of policies, ethical considerations, and the pursuit of responsible and trustworthy systems across time. Beginning with a historical perspective, we trace the trajectory of AI in healthcare, scrutinizing past policies and ethical frameworks to glean insights for contemporary challenges. The paper meticulously examines the current landscape, scrutinizing existing policies, ethical frameworks, and the trustworthiness of AI systems deployed in healthcare settings. Ethical dilemmas and challenges, including privacy concerns, bias, and informed consent, are dissected to shed light on pressing issues. A comprehensive policy analysis explores global variations, identifying gaps and proposing recommendations for policy improvement.

To pave the way for a future where AI seamlessly integrates into healthcare ethically, we explore strategies for building trustworthy systems. Emphasizing transparency, explainability, and human-AI collaboration, the research navigates the complexities of ensuring responsible AI applications in healthcare. Anticipating future developments, the paper probes into ethical and policy challenges on the horizon, offering a roadmap for stakeholders to navigate the evolving landscape. Case studies showcase noteworthy AI implementations, their impact on policies, ethics, and system trustworthiness, providing valuable lessons for future deployments. In conclusion, the paper synthesizes key findings, issues a call to action, and envisions a future where AI and healthcare coalesce responsibly for the betterment of patient outcomes and societal well-being.

Keywords

Navigating The Nexus, AI, Healthcare



High-Resolution Imaging of a Complex Moving Target for Higher-Order Phase Terms using a Novel Technique

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Abstract

High-resolution radar (HRR) imaging of moving targets can be modeled as uniform, second, third, and higher-order phase terms. cubic chirps. The sea state, wave height, and wind speed are all important factors to take into account while visualizing a target-like ship. In these circumstances, the phase of the radar return signal fluctuates as it moves through the second, third, and higher orders. In this research, a novel technique using ISAR is employed for imaging with high resolution that works exceptionally well even in scenarios of maneuvering targets. Comparing the suggested algorithm to all earlier techniques demonstrates its superiority. The simulation uses a 4-point target and ship target and the results support the viability of the suggested algorithm.

Keywords

ISAR, HRR, RD, RID, RIC



Development and Validation of Parallel Corpus: A Framework for Building Bikol-Filipino Linguistic Resource

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Abstract

A parallel corpus is a valuable resource for machine translation. However, creating a parallel corpus is a challenging and time-consuming task. In the Philippines, where 185 different languages are spoken, most of them have rich text, but annotated data is scarce. Bikol is one of the major languages of the Philippines, yet there have been only a few studies on this language. This study presents the process of developing a parallel corpus of Bikol and Filipino texts, which is curated from biblical text, Wikipedia, and translated Bikol songs from various sources. The corpus alignment was improved through word alignment and translation. We validated the collected parallel corpus by comparing its similarity with the raw corpus and the word-aligned corpus. By calculating the cosine similarity, we determined the extent to which word alignment had modified the original text. A transformer model then was fine-tuned with the parallel corpus and evaluated using the BLEU metric. The resulting score of 48.54 indicates that the output is of high-quality translation. This study provides a significant contribution to the development of machine translation tools for Bikol and Filipino languages.

Keywords

Bikol-Filipino Translation, Language Resources, Natural Language Processing, Parallel Corpus, Transfer Learning



Mobile Application on Road Condition Awareness and Routing for Calamities using Adaptive System

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Abstract

Climate change and calamities has been causing problems and on the roads of the province of Albay. This led to hazardous and damaged roads that presents risks in the safety of the drivers and passengers in the province. The province faces recurring challenges arising from extreme weather events, volcanic eruptions, seismic activities, and coastal hazards, all of which severely impact its transportation infrastructure. As climate change accelerates, the frequency and intensity of these environmental disturbances are on the rise, posing significant risks to the accessibility, safety, and resilience of Albay's road networks. The province's vulnerability to these phenomena necessitates proactive and adaptive measures to mitigate their adverse effects and ensure the continuity of vital transportation services. Road condition rerouting systems play a pivotal role in ensuring efficient transportation networks, particularly in regions prone to environmental disruptions and infrastructural challenges like Albay Province. This research paper presents a development of a conceptual mobile application aimed for travelling awareness of drivers and passengers specifically tailored for Albay Province. The development of the application integrates adaptive systems conceptual framework to provide adaptability of the system in different calamity and climate change scenarios. The research identified the map plans of the road and routes, calamities, and the types of vehicles, and application program interface mainly the Google Map API and Weather Ambee as key points used in the development of the mobile application. The designed road condition awareness and routing for calamities mobile application provided awareness that assisted in identifying safe routes to travel in between municipalities in the province of Albay.

Keywords

Mobile Application, Road Condition Awareness, Adaptive System



A Study of the History of Cultural Tourist Attractions along the Bangkok Yai Canal, Thonburi District, Bangkok

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Abstract

The purpose of this research was to study the history of cultural tourist attractions along the Bangkok Yai Canal, Thonburi District, Bangkok. This was qualitative research with data collection by in-depth interviews and observation. Key preferment were people related to tourist attractions. Data analysis was by content analysis with triangulation data verification. The research found that there are many tourist attractions along the Bangkok Yai Canal 15 attractions are divided into 3 periods, 1) built in the Ayutthaya period 9 tourist attractions 2) built in the early Rattanakosin period 4 tourist attractions and 3) built in the present 2 tourist attractions. These are mostly temples. The many temples along the Bangkok Yai canal can be an interesting tourist attraction because each attention has a history and very important landmarks. If open for tourists to visit. The tourists learn about various arts and cultures. The temple and the community surrounding the temple receive income from tourism. It makes the community generate income, spend money, and make the way of life of people in the community better. The suggestions of this study were 1) The local Government and communities should use the research findings as data to create strategies for developing community-based cultural tourism, 2) The local Government agencies responsible for tourism should allocate budgets to stimulate tourism, 3) There should be an annual event to promote tourism, and 4) Information signs of tourist attractions should be created for tourists to know information.

Keywords

Cultural tourist attractions, Bangkok Yai Canal, Thonburi District, Bangkok



Gender-Responsive Policies to Support Women Start-ups to Make a Difference in the World

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Abstract

The 2019 Social Enterprise Promotion Act in Thailand represents a pivotal step towards promoting social enterprises, aiming to foster self-reliance and contributing to a fair and sustainable future for the country. Despite their significance, there is a noticeable research gap focusing on the factors that motivate Thai entrepreneurs to venture into social entrepreneurship. This study seeks to fill that gap by analyzing data from 2,000 respondents in Thailand, utilizing linear regression to explore whether the awareness of the United Nations Sustainable Development Goals (SDGs), the adoption of digital technologies, extrinsic motivations, such as the overall societal view of entrepreneurs, social awareness, and perceptions of entrepreneurial capabilities influence the decision to start a social enterprise. In a gender comparison, our findings reveal that the societal context plays a crucial role for both male and female entrepreneurs, although in distinct ways. Male entrepreneurs are found to be more influenced by individualistic extrinsic values, with motivations linked to power, respect, and societal recognition. In contrast, female entrepreneurs display a collectivistic orientation, being more likely to be inspired by intrinsic motivations, such as the success and visibility of other successful startups within their society. This suggests that women are more motivated by positive examples of social entrepreneurship rather than by the pursuit of prestige, which appears to be a stronger motivator for men. These findings underline the need for a gender-sensitive approach by government bodies, educational institutions, and other relevant organizations aiming to boost the start-up rates of enterprises who 'make a difference in the world'. Tailored support and educational programs to address the unique motivations and perspectives of male and female entrepreneurs could play a crucial role in enhancing the effectiveness of strategies designed to promote social entrepreneurship in Thailand and beyond.

Keywords

Start-Up, Social Entrepreneurship, SDGs, Entrepreneurial Capabilities, Entrepreneurship Education, Extrinsic Motivations

INTRODUCTION

Social enterprises are self-sustaining enterprises [1] because they not only address social and/or environmental concerns, but also produce goods and services, thus creating employment [2]. In addition, these enterprises aim to 'make a difference in the world' and pursue both profit maximization and reinvestment towards their social goal [3]. As other entrepreneurs, social entrepreneurs tend to be innovative for their social purposes, and thus create new social innovations [3, 4]. In Southeast Asia, only 3.8 percent of the adult population are social entrepreneurs, the lowest number in a global comparison [5], estimated to account for 500,000 to 1 million social entrepreneurs in the region [2]. All countries in Southeast Asia lack equivalent support from governments and organizations to help in scaling social enterprises from small start-ups or social communities or groups to become investable businesses [6]. With regard

to policies in Thailand, the legal status of a social enterprise is regulated since 2019, requiring regular reporting and restrictions on dividends [7], whereas main obstacles faced by social entrepreneurs tend to be access to capital, including early-stage and equity funding, and a limited understanding of what a social enterprise really is [2].

The increased awareness towards sustainable development and the United Nations Sustainable Development Goals (SDGs) has seen an increase in entrepreneurship education for the creation of sustainable and social enterprises, targeting both attitudes and aspirations of entrepreneurs towards social concerns [8]. Another important aspect of social entrepreneurship education is to develop an entrepreneurial mindset for social entrepreneurship activities and the capabilities needed for starting and running these enterprises [9, 10]. This is supported by the British Council and UNESCAP, who identified a general lack of business capabilities and knowledge in social entrepreneurs



[2]. This included not only general business knowledge but also the lack of an entrepreneurial mindset.

Specifically for Southeast Asia, there is a lack of research concerning motivating factors for the creation of enterprises with a focus on making a social impact. This empirical study addresses this gap by analyzing 2,000 randomly selected working-age respondents from Thailand. Linear regression is used to identify predictors that motivate entrepreneurs to create start-ups aimed at making a social difference. These predictors include SDG awareness, increased use of digital tools, extrinsic motivations, social awareness, and own entrepreneurial capability perceptions. Objectives of this exploratory study are

(1) To understand the imperatives that drives entrepreneurs to start a businesses with a social purpose.

(2) To explore gender differences in these predictors for gender-responsive policy recommendations and entrepreneurship education.

LITERATURE REVIEW

Within the two domains of academic and practical entrepreneurship, social entrepreneurship is positioned at the intersection of not-for-profit organizations pursuing revenue generation strategies and for-profit entities that incorporate social mission driven strategies [11]. The term 'social enterprise' is increasingly being applied by organizations and in policies to describe enterprises that aim to 'make a difference in the world', encompassing both for-profit and revenue-generating operations and inclusive enterprises [6]. Asia Development Bank as a principal advocate for inclusive businesses within Southeast Asia acknowledges their capacity for widespread social influence and their role in diminishing poverty. Particularly, when inclusive social enterprises are financially viable entities that deliberately generate beneficial social or environmental outcomes, they are also regarded for their capability to achieve regional development objectives [1]. Barton et al. (2018) provide evidence supporting the significant impact of social entrepreneurship on economies, including the creation of new industries, the validation of innovative business models, and the reallocation of resources towards previously overlooked social issues [11].

A. SDG Awareness and Social Entrepreneurship Education

Social entrepreneurship can be characterized as applying entrepreneurial capabilities, leadership, innovation, and creativity to address challenges faced by marginalized socio-economic communities or environmental concerns [12]. Kim and Lim (2017) identify that various values upheld by social enterprises play a pivotal role in influencing local and regional

developments [3]. These enterprises contribute to 'making a difference in the world' not just through (1) the production of goods and services, thereby strengthening the enterprise itself and giving it a competitive edge, but also through (2) creating employment opportunities for marginalized individuals, encompassing their training and assisting in finding employment. Additionally, they also contribute through (3) facilitating economic and social development via grants, including those provided by foundations, and through microfinance or low-interest loans [3]. To break even or to make a profit lets a social enterprise become more self-sufficient, thus requiring fewer loans, funds or being less dependent on grants or donors. United Nations (2023) view social entrepreneurship also as an important link between civic society and enterprises to address societal challenges and innovation [13].

In recent decades, with an acceleration in the Covid-19 pandemic, the sustainable development of enterprises has increasingly come into the focus of entrepreneurs, organizations, and societies. This attention stems from the recognition that integrating sustainable practices into entrepreneurial activities can strengthen the potential for prosperity among individuals and societies alike, promoting continuous, inclusive, and sustainable economic growth across nations and regions [14].

The SDGs can serve as a critical compass for potential social entrepreneurs, guiding their efforts to align with and contribute to one or more of these goals. On the contrary, social entrepreneurship is also a driver of the SDGs [13]. The crucial role of entrepreneurs and entrepreneurship in enhancing human wellbeing is recognized and supported by governments and institutions alike. These entities have undertaken proactive measures to foster entrepreneurial thinking, underpinned by the SDGs, especially through educational initiatives [15].

The significance of the education system in promoting sustainable development is summed up in the global objective to provide inclusive and equitable education, together with lifelong learning opportunities for everyone (SDG 4) [16]. The potentially beneficial effects of entrepreneurship on the social and economic development are recognized by linking SDG 4, which aims to ensure inclusive and equitable quality education and foster lifelong learning opportunities for all, with SDG 8, which focuses on advocating for sustained, inclusive, and sustainable economic growth, as well as full and productive employment and decent work for all [13]. We therefore hypothesize, that

H1: For both genders, SDG awareness is a significant positive predictor for starting a social enterprise.

B. SDGs, Digital Technologies and the Circular Economy

The United Nations' '2030 Vision' is designed to foster collaboration among enterprises, non-governmental organizations (NGOs), and governments, providing them with the necessary technologies and resources to achieve the SDGs. The UN 2030 vision aims to enhance its impact through the utilization of Industry 4.0 technologies (also known as the Fourth Industrial Revolution or 4IR) and the principles of a circular economy [17]. This latest technological industry revolution facilitates interactions of a variety of different physical systems, using advanced technologies such as artificial intelligence (AI), machine learning, Big Data, and the Internet of Things (IoT), among others [18]. In recent years, these advanced technologies have played a crucial role in accomplishing societal objectives, such as combating the COVID-19 pandemic. AI and machine learning have been instrumental in saving lives by applying screening, tracking, and prediction algorithms, and by aiding in vaccine development. Additionally, IoT has enabled remote patient monitoring [19].

The shift from a linear to a circular economy model has become increasingly prominent in the last few years, providing innovative solutions to some of the most pressing sustainable development challenges. These 4IR technologies are already being applied across various sectors to support the achievement of some of the SDGs [15]. As early as the 1970s, the Ellen MacArthur Foundation in the United Kingdom highlighted the connection between sustainability and the circular economy by leveraging digital technologies. Furthermore, the foundation actively promotes to accelerate the adoption of circular economy principles through various initiatives across sectors and partnerships [20]. The rapid expansion of the information and communication technology (ICT) sector, and the consequent increase in global connectivity, will play a significant role in advancing economic and social change across many regions of the world. However, disparities in access to IoT are evident among developing and developed nations, as well as between rural and urban areas, and between genders. This situation calls for an integrated approach that combines the development of ICT and 4IR technologies towards achieving the UN SDGs [21]. We therefore hypothesize, that

H2: For both genders, digital technology use is a significant positive predictor for starting a social enterprise.

C. Extrinsic Motivations and Social Awareness

The impact of mass media on entrepreneurial intentions is less researched [18] and leads to the question how media coverage about successful social enterprise start-ups may give a perceived social legitimacy to other start-ups and -in series- affects their own entrepreneurial start-up activities.

Petkova et al. (2013) discovered that start-ups that engage in more intensive and varied sense-giving activities, thereby aiming to launch enterprises that contribute positively to the society, are influenced in their start-up decisions by higher levels of media attention [23]. These media effects or social awareness of like-minded businesses tend to directly influence the human capital of the start-up founders. On the contrary, it has also been observed that engaging in meaningful business ventures can attract greater media interest.

Social entrepreneurs often engage in self-reflection by observing activities of other social enterprises within their ecosystem, as these businesses typically encounter a range of unique challenges. To some degree, social entrepreneurs may also depend on the support of these other enterprises to achieve their business purpose [24]. Therefore, a prevailing positive attitude towards social entrepreneurship within a society and -consequently- the ecosystem, can be instrumental. The social entrepreneurship ecosystem can be described as being "characterized by a large number of loosely interconnected participants who depend on each other for their mutual effectiveness and survival" [25, p.26]. This supportive environment may enable entrepreneurs to enforce their contributions towards making a meaningful difference in the world.

Past research has highlighted the efforts of economic and social policymakers to cultivate entrepreneurial ecosystems by linking actors, institutions, social structures, and cultural values that are crucial for entrepreneurial endeavors [e.g. 26, 27]. However, there is an identified research gap concerning the interactions of social entrepreneurs within clusters that include other entrepreneurs, organizations, institutions, and the overall cultural dimensions of the ecosystem. Consequently, Roundy (2017) discovered that an increase in the number of social entrepreneurs within a society leads to a corresponding rise in similar types of founders, thereby boosting their presence in the ecosystem [28]. Supporting social entrepreneurs and initiatives that focus on making a difference in the world, together with a societal context that encourages social entrepreneurship, e.g. by granting status and respect to successful social entrepreneurs, through media visibility or other extrinsic motivating factors, fosters the entrepreneurial ecosystem for social entrepreneurship [28]. Therefore, there appears to be a correlation between positive attitudes towards successful entrepreneurs, such as those social entrepreneurs striving to make a difference or led by intrinsic motivations, and the intentions to start up as a social entrepreneur.

However, previous research indicates gender differences in perceptions and social awareness in the context of social entrepreneurship. The desire to build a professional career and for career achievements are ranked lower for women than

for men. Women social entrepreneurs also tend to pursue a greater level of agreeableness than men, indicating more reliance on their peers and their social acceptance by peers [29]. They also seem to be more positively influenced than men by altruistic behavior (intrinsic motivations), whereas men's social entrepreneurial activities are fostered by increased income levels, materialistic objectives, and status (extrinsic motivations)[30]. We therefore hypothesize, that

H3: For men, extrinsic motivations are a significant positive predictor for starting a social enterprise.

H4: For women, social awareness is a significant positive predictor for starting a social enterprise.

D. Entrepreneurial Capability Perception

Entrepreneurial intentions towards social entrepreneurship are influenced by factors such as prior entrepreneurial experience, entrepreneurship education, and personal attributes like self-efficacy and proactiveness, which are crucial catalysts[11]. Typically, entrepreneurs have the ability to spot unmet customer needs and market gaps. In social entrepreneurship, the ability to identify opportunities often arises from consumers who are well-educated and prioritize ethics, social values, and environmental sustainability. If social entrepreneurs want to effect meaningful change, they must possess a unique skill set that enables them to balance their social purpose with the financial sustainability of their venture [31]. Lacking these essential capabilities, social entrepreneurs may find themselves focusing solely on either their social mission or the commercial and profit-driven aspects of their enterprise.

Smith et al. (2012) identify three interconnected leadership capabilities that are essential for navigating the challenge to balance mission and profit in the social enterprise: 'acceptance', 'differentiation', and 'integration' of competing demands [32]. The first capability, 'acceptance', involves recognizing and embracing the two aspects of these demands - mission-driven versus profit-driven. By accepting them, social entrepreneurs can transform potential obstacles into opportunities, fostering innovation through paradoxical thinking and open-mindedness. The second capability, 'differentiation', enables the entrepreneur to acknowledge and appreciate the distinct value of each demand, keeping the business aligned and motivated to pursue both its social and financial objectives. The final capability, 'integration', means the ability to merge these conflicting demands and overcome the conflict between fulfilling a social mission and generating profit. To effectively integrate this, a social entrepreneur must possess advanced interpersonal and decision-making capabilities[33].

Few research studies focus on the specific capabilities required by social entrepreneurs who aim to reinvest their profits towards social or environmental purposes. Polas and

Afshar (2021) highlight a distinctive finding regarding female entrepreneurs, identifying a positive correlation between their problem-solving skills, networking capabilities and their entrepreneurial intentions in social entrepreneurship [33]. Problem-solving and networking capabilities not only increased their interest in addressing specific societal issues but also led to a greater societal engagement, both of which is often more associated with women than men. Such enhanced societal awareness, in turn, could contribute to their propensity to start a venture aimed at effecting societal change. We therefore hypothesize, that

H5: For women, capability perceptions are a significant positive predictor for starting a social enterprise.

E. Gender

Contributions of women to social entrepreneurship and the distinctions between female and male social entrepreneurs have been insufficiently explored in existing research, especially with regard to their personal characteristics [29]. Apparently, women social entrepreneurs tend to follow a different approach in starting their social endeavors than men do, as they start their social enterprises as a response to a certain social problem they perceive from a personal perspective [34] or by a general social purpose, pulled by intrinsic motivations. On the other hand, men are more strongly influenced by economic and materialistic goals [35] and tend to pursue social entrepreneurship stemming from extrinsic motivations, such as higher reward or recognition [36].

As these gender differences in social entrepreneurship are prevalent, we will control for gender to find gender-related differences in the motivations to start a business to 'make a difference'.

F. Research Framework

The overall research framework is displayed in Fig. 1 below.

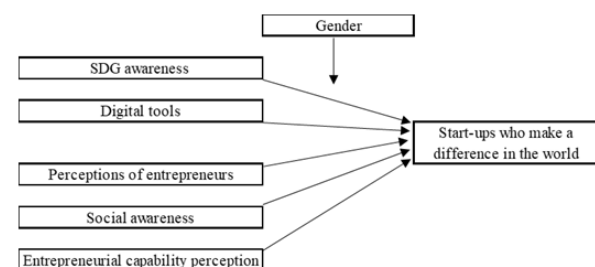


Fig. 1 Research Framework

RESEARCH METHODOLOGY AND DATA

Primary data in this study stem from the Global Entrepreneurship Monitor (GEM) project, an annual large-

scale entrepreneurship research project. GEM collects data on entrepreneurial activities, aspirations and behavior across many countries globally. Each year, the survey is conducted among a random representative sample of the adult population (age 18 to 64) in each country to identify individuals who, at the time of the survey, owned and managed a business or were in the process of starting one [37]. Each GEM team undertakes two surveys: the Adult Population Survey (APS) and the National Expert Survey (NES). For the Thailand APS 2023, questions from a randomly selected group of 2,000 adults were collected in May and June 2023, and 202 male respondents and 190 female respondents answered that their start-up reason was to 'make a difference' in the world (dependent variable DV).

Frequency analysis was employed to assess the significance of various questions to the entrepreneurs. To explore whether SDG awareness (2 independent variables IV), extrinsic motivations (3 variables), the adoption of digital technologies (1 variable), social awareness (1 variable), and capability perceptions (1 variable) could predict the creation of a social enterprise – aiming to make a positive impact in the world, a linear regression analysis was conducted. In the model summary, the R-Square value served as an overall indicator of the strength of the association, determining the proportion of variance in the dependent variable that could be predicted from the independent variables. The ANOVA test was utilized to assess the predictive power of the dependent or outcome variable, with a p-value of less than 0.05 indicating the statistical significance of the regression model.

DV was 'the reason to start a business is to make a difference in the world'. The IVs, 'more digital technology use to sell products and services in the next 6 months', the grouped extrinsic motivation variables ('starting a new business as a desirable career choice', 'high level of status and respect for successful startups', and 'public media and/or internet coverage about successful startups'), social awareness ('businesses primarily aim to solve social problems'), and 'personal perceptions of knowledge, skill and experience required to start a new business', were answered on a scale of 5 from 'strongly disagree' to 'strongly agree'. The SDG awareness variables ('awareness of the 17 UN SDGs' and 'identified goals as a priority for business and defined a set of clear objectives') were dichotomous questions.

RESULTS

Awareness of the 17 SDGs within the overall Thai adult population was relatively low with 41.0% of men and 36.4% of women being aware of them. However, within the business community, a significant majority, 74.5% of male and 79.5% of female start-ups and young businesses, defined as being in business for up to 42 months, acknowledged

these goals as crucial for their enterprises, including having established clear objectives, actions, and Key Performance Indicators (KPIs) that are aligned with the SDGs. In addition, three quarters of start-ups, 72.4% of males and 78.8% of females, anticipated an increased use of digital technologies in their products, services or processes over the following six months. Visibility of other social enterprises in the country was perceived by 63.8% of female and 56.9% of male startups. Just over half of the startup entrepreneurs, 58.1% male and 54.3% female, believed they possessed the necessary capabilities, expertise, and experience to launch a business.

The overall model was significant for both genders and the R Square values exhibit that a variance of 10.1 percent (male) and 17.7 percent (female) in the overall model summary is accounted for by the entrepreneurs to start up a social enterprise with impact. The variables employed in the model deliver a partial explanation for their start-up reasons, and highlight specific aspects.

The aim of this research is to identify imperatives that drive entrepreneurs to start a venture with a social purpose and to examine gender-related differences in the predictor variables for gender-responsive policy recommendations and entrepreneurship education. The ANOVA findings revealed significant results for both genders (male .002 / female .000), yet distinct predictors emerged as relevant for each gender. This highlights the necessity for policymakers and entrepreneurship educators to exercise caution against adopting a universal 'one-size-fits-all' strategy, and underlines the importance of gender-responsive approaches in fostering social entrepreneurship.

Table 1 displays that IV1 of SDG awareness was not significant for both genders, whereas IV2 in this category (Identified goals as a priority for business and defined a set of clear objectives, actions and KPIs) had a negative impact for male startups (-.174/.040). For female startups, awareness of SDGs was not significant, therefore H1: SDG awareness is a significant positive predictor for starting a social enterprise is only partially supported for male start-ups. Similarly, H2: For both genders, digital technology use is a significant positive predictor for starting a social enterprise is partially supported as it is significant with a negative impact for women start-ups only (-.202/.005). H3: For men, extrinsic motivations are a significant positive predictor for starting a social enterprise is supported, as the IV 2 in this category (high level of status and respect for successful entrepreneurs) is significant for male start-ups only (.192/.024) whereas social awareness and visibility of other social entrepreneurs is highly significant for female start-ups (.294/.000), which supports H4: For women, social awareness is a significant positive predictor for starting a social enterprise. As capability perceptions proved to

be significant only for female start-ups (.171/.022), H5: For women, capability perceptions are a significant positive predictor for starting a social enterprise, is fully supported in our model with a positive impact for female start-ups.

Table I Regression Results

Predictor Category	Independent Variables	male		female	
		Beta	Sig.	Beta	Sig.
SDG awareness	Awareness of the 17 United Nations Sustainable Development Goals	-0.067	0.417	-0.033	0.657
	Identified goals as a priority for business and defined a set of clear objectives, actions and KPIs	-0.174	0.040	0.061	0.409
Digital technologies	Use more digital technologies to sell products or services in the next 6 months	-0.080	0.303	-0.202	0.005
Extrinsic motivations	Starting a new business is a desirable career choice	0.149	0.084	0.071	0.399
	High level of status and respect for successful entrepreneurs	0.192	0.024	-0.067	0.412
	Frequent public media / internet coverage about successful new businesses	-0.100	0.272	0.125	0.108
Social Awareness	High visibility of business with a social purpose	0.094	0.293	0.294	0.000
Capability Perceptions	Own perceptions of knowledge, skill and experience required to start a new business	-0.036	0.672	0.171	0.022

The regression results show that for Thai male social entrepreneurs 2 predictors and for Thai female social entrepreneurs 3 predictors are significant, however, there is no common denominator for both genders.

CONCLUSIONS AND SUGGESTION

This study's objectives were to identify determinants that foster the likelihood of start-ups aiming to create a significant societal impact and establish sustainable social enterprises, as well as to discover potential gender-related differences in these determinants. Both are crucial for establishing and fostering an inclusive and effective entrepreneurial ecosystem for social entrepreneurship. The finding of two significant predictors for male social entrepreneurs and three different predictors for female social entrepreneurs that positively influence start-up rates of socially driven entrepreneurs is insightful and emphasizes a gender-sensitive approach because of different motivational factors that drive social entrepreneurship. This also underlines the complexity of social entrepreneurship dynamics and highlights the necessity for a gendered approach in supporting policies, mechanisms and educational programs to foster an effective social entrepreneurship ecosystem. The absence of an overlap in significant predictors between both genders suggests that -even though both male and female social entrepreneurs are committed to addressing social problems- their pathways and emphasis in creating social value differ markedly. This disparity necessitates interventions that recognize and leverage these differences

to effectively support social entrepreneurs of both genders in their endeavors.

The observation that SDG awareness and having a structured plan for addressing them can act as a hindering factor for male social entrepreneurs in their decision-making and in their intent to create a social enterprise is an interesting finding. It suggests a distinctive negative relationship between goal-setting and entrepreneurial action-taking in the context of social entrepreneurship. This could be interpreted in several ways:

(1) Male start-ups might start their social enterprises in any case, even without pursuing these specific goals.

(2) Male startups might feel overwhelmed by complexities in the start-up process and might perceive inflexibility to align their entrepreneurial start-up actions with SDGs and detailed plans, particularly for those who are in the early stages of their ventures, where -despite having big dreams- flexibility and agility are crucial.

(3) Early stages of a start-up, especially in a nascent enterprise [38], require entrepreneurs to focus on day-to-day operational problems and pivoting their businesses based on feedback from customers and other stakeholders. Male entrepreneurs might perceive that detailed plans on SDGs are more likely to constrain their ability to adapt quickly to emerging challenges and opportunities. This preference for agility over structured planning could explain why SDG awareness might deter their start-up intentions.

The difference in how male and female start-ups view the importance and role of SDGs in their entrepreneurial journey could also stem from different motivations and approaches to social entrepreneurship. While male entrepreneurs might be motivated by the opportunity to solve operational problems and adapt their business model dynamically, they may view the requirement to align closely with SDGs as a limitation rather than an enabler. Societal expectations with regard to gender roles might also play a role in how male and female entrepreneurs perceive the value of SDGs in their business planning. Men might feel pressured to achieve quick successes and demonstrate independence, which could make a detailed planning and long-term focus required for SDG alignment seem less attractive.

Given these findings, it becomes obvious that supporting male entrepreneurs in integrating SDGs into their business models without feeling constrained requires a gender-responsive approach, in this case a male-centered approach. For male aspiring social entrepreneurs, support programs could focus on demonstrating how SDGs can be aligned with agile business practices, offering flexible frameworks for integrating social goals without compromising operational flexibility. Encouraging an overall mindset that lets them view SDGs rather as guiding principles than a strict guideline to follow could also help male social entrepreneurs navigate the

start-up phase of their ventures more confidently, ensuring that their ventures remain both impactful and adaptable to changing start-up conditions.

Despite women social entrepreneurs' intentions to incorporate more technology in selling products or services, this displays as a hindering factor in their entrepreneurial endeavors. This suggests that while digital technologies are well recognized for their potential to enhance business operations and market reach, their role in the foundational motivation and strategic focus of those start-ups who aim to make a social impact might be more complex for women social entrepreneurs. Several interpretations for this finding are possible.

(1) Female start-ups, particularly those with a social purpose, might view and use technology primarily as a tool to achieve their goals rather than as a driving force in their venture creation process. For women social entrepreneurs, the emphasis might be more on the social purpose itself, and -while technology is acknowledged as being useful- its planned increased use may not directly influence their decision to start a social enterprise.

(2) In Thailand, the use of digital technologies, e.g. in sales and financial processes, was already well established before the pandemic, on every level of entrepreneurial activity. Especially women in Thailand tend to be more innovative than men when it comes to use newer technologies in day-to-day operations [39]. One explanation could therefore be that women entrepreneurs were already acquainted with its use and well adapted to digital technologies before they started their enterprises. Therefore, the anticipation of needing to significantly ramp up the use of -maybe more complicated- digital technologies might be seen as an unnecessary option because it would require daunting resources to increase an already well-established use of technology.

(3) Overemphasizing the role of digital technologies might unintentionally shift their focus away from the core social purpose of the enterprise. Women social entrepreneurs might worry that the need to integrate and manage advanced technologies could detract from their ability to concentrate on creating social value.

To support women social entrepreneurs in the early stages of their ventures, organizations and policies should target programs that provide guidance on how a tailored technology integration is seen as a complement to their social purpose, rather than viewing it as a prerequisite for success. Also, and this aligns with the finding that social awareness is a significant fostering factor for women to start a social enterprise, showcasing a variety of successful social enterprises that have effectively used technology at different levels and scales and in different ways, could showcase technology as a supporting force to achieve their social purpose. By addressing these concerns, support programs

can help female entrepreneurs leverage technology in a way that enhances, rather than hinders, their journey towards creating impactful social enterprises.

Four additional factors have a positive impact on the decision-making process for social entrepreneurs: The perception of their own capabilities positively affects female social entrepreneurs, supporting the findings of Polas and Afshar (2021) who discovered that possessing the appropriate skills, including problem-solving and networking abilities, enhances societal awareness, subsequently leading to increased intentions to start enterprises to make a difference in their society.

The finding that extrinsic motivations are a significant factor for male social entrepreneurs -and not for female- portrays the need for gender-responsive measures in the supporting ecosystem. Differing to their male counterparts, women social start-ups were influenced by social awareness and visibility of other social enterprises, not by status and respect towards successful entrepreneurs. This effect appears to stem from a more individualistic viewpoint for men, emphasizing power, respect, and societal acknowledgment, whereas women are more likely drawn by a collective perspective, focusing on the achievements and visibility of other successful enterprises who also aim to make a difference in the world. Women tend to be pulled into social entrepreneurship by other good examples rather than by prestige which draws the male startups.

For an increase in these types of enterprises, our insights call for a gender-responsive approach by governments, educators, and institutions aiming to foster social enterprises dedicated to societal impact. This also demands for an emphasis on creating social value as a crucial element for social entrepreneurial activities by boosting social capital and societal linkages. For women, the approach should include specialized training in essential entrepreneurial capabilities, particularly in problem-solving and networking, aligning with the findings of Polas and Afshar (2021).

For male social entrepreneurs, the significant predictors might revolve around aspects more aligned with extrinsic motivations, such as recognition, status, innovation, market opportunities, or economic incentives, reflecting a more individualistic and perhaps utilitarian approach to social entrepreneurship. On the other hand, the three significant predictors for female social entrepreneurs include intrinsic motivations, such as societal impact, community engagement, and collaboration, indicating a more collectivistic and relational approach to initiating social ventures.

Policymakers, educators, and support organizations should consider these findings when designing programs and policies to enhance the efficacy of support for social entrepreneurship. For instance, initiatives aimed at male





social entrepreneurs might benefit from emphasizing the economic and individual achievement aspects of social entrepreneurship, whereas programs for female social entrepreneurs could focus more on community impact, collaborative efforts, and networking opportunities. Doing this right, could contribute to a more vibrant, inclusive, and impactful social enterprise ecosystem in Thailand and potentially in other contexts with similar dynamics.

To further support women social entrepreneurship, policies should also consider issues outside the business venture, such as the need to combine work and family commitments of women, as these are still one of the dominant factors why women exit – or do not start- enterprises [39]. In addition, it is important to know that women's social entrepreneurial activities highly contribute to achieving the SDGs [14].

Limitations

Given that our research was conducted in Thailand, it is possible to consider extending our findings to other Southeast Asian countries, where a similar proportion of male and female entrepreneurs are active in the ecosystem. Applying them to different global regions may prove challenging. Furthermore, our data collection was done in 2023, a period during which interest in social enterprises and sustainability awareness has been on the rise. Given the evolving nature of these topics, current and future studies, for which there is a limited amount of up-to-date data and publications, may uncover either varying or comparable insights.

However, the results of this study are valuable for academia, practitioners, organizations and policy makers. The findings that cultural and societal factors serve as predictors for social entrepreneurship, in series affecting the decision of both men and women to initiate social enterprises, needs additional exploration. It is evident that having products or services in the market is crucial for generating profit, which in turn enables reinvestment to effect positive societal change in the world. Nevertheless, further research is required to specify specific actions within the societal and cultural contexts that can strengthen these observations. Further investigation is needed to explore the relevance of particular capabilities for female social entrepreneurs, potentially enhancing the sustainability of their ventures, since our study merely inquired about general capability perceptions. Future research should also investigate the relationship between attitudes towards successful entrepreneurs (extrinsic motivations) and the SDGs to uncover more detailed motivational factors driving the establishment of social enterprises. Lastly, research into how social enterprises interact with universities, governments, and organizations focused on social initiatives could significantly strengthen the support and elevation of social entrepreneurs within the

region.

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Industrial Based Learning for Improving Problem Solving Skill for Technical and Engineering Workforce Labour

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Abstract

The objectives of this research were to develop the industrial based learning for improving problem solving skill for technical and engineering workforce labour. Starting from creation of industrial based learning (IBL) that integrated CIPP model which consist of context evaluation, input evaluation, process evaluation and product evaluation, identification of problem solving skill, creation of research tools, identification of population and sample, implementation of industrial based learning for improving problem solving skill for technical and engineering workforce labour that was designed with Phradabos's students who study in the project course I and II and TM-FTE-KMUTNB's students who study in project course I and II, and then collect data, analysis and conclusion. The result found that the efficiency of problem based learning in project course was 84.24/80.20 and 91.38/85.21 that were above 80/80 established criteria, the advanced abilities after learning of students who learned from industrial based learning in project course increased more than before learning, a knowledge and abilities of students were improved, the problem solving skill (PSS) of students passing the project course I and II which is higher than the previous time. Phradabos's students had average problem solving skill at Level 2 and TM-FTE-KMUTNB's students had average problem solving skill at Level 3 which can meet industrial requirements.

Keywords

Industrial Based Learning, Problem Solving Skill, Technical Workforce Labour, Engineering Workforce Labour

INTRODUCTION

Teaching and learning management for the technical and vocational diploma program in Thailand which are industrial subject, commercial subject, agriculture subject, home economics subject and fine arts subject. The program is consisted of basic courses, specific courses, elective courses, experience training and project courses [1]. The bachelor of science in technical education in mechanical engineering program which is consisted of general education course, specific course, elective course, experience training and project course. The project course is selected and taken by students which was done in the form of group work, for completion of the program. However, the problem solving skill of students are not complete according to the competency standard [2]-[3] and these projects may not meet the needs for solving working problems in the actual industrial context since many teachers often taught in traditional way. Therefore, this will affect vocational education quality and student's knowledge and skills for working in the future work. Thus, both educational and

industrial sectors have cooperation for improving the project course to solve problems in the workplace. In the present many technical college and university in Thailand applied cooperative learning, industrial-oriented education [4], industrial based learning, hand-on model, learning factories [5] and active learning for learning and teaching. Industrial based learning: IBL was a part of active learning. IBL has since been extended in applications for other programs of learning and teaching which has been pivotal in preparing the undergraduate students in Australia more than 25 years ago and in New Zealand, UK, USA and Indonesia thus IBL is the benchmark in work-integrated learning for industry and offering placement opportunities for undergraduate students through the IBL. The process of IBL allows for students to develop their knowledge and skills used for their future work. It increases critical appraisal, literature retrieval, encourages ongoing learning within a team environment and reflects the outstanding quality of students [6]. Industrial based learning has been applied in teaching and learning and suitable for project course in technical and vocational diploma program and the bachelor of science in technical

education in mechanical engineering program that was implemented for Phrada Bos's students and students of Department of Teacher Training in Mechanical Engineering (TM-FTE-KMUTNB). Phradabos school is operated by Phradabos foundation that is Royal project under the Royal initiative of King Rama 9, was established in 1966. The first aim of Phradabos school is help educational disadvantaged person, poor, unemployed and not enough basic knowledge to study at vocational institute but those people are interest in learning and have earnest perseverance, and the second aim is to give the opportunity in the professional and moral training for them are able to persuade a career, develop their own position, help family social and country. At present many students are border tribes, orphans, youth who were treated of drug cessation, released from prison. Phradabos school education is informal education that train in auto mechanic, electronic technician, electrician, sufficiency agriculture technician, maintenance technician, construction and carpenter, welder and nursing home [7]. Phradabos foundation established Lukphradabos school in 1998 for transfer agriculture technology and renewable energy knowledge and established Southern Border Provinces Phradabos School in 2010 which was second school for help of youth of three southern border provinces who were affected by terrorism, for train in auto mechanic, motorcycle mechanic and agriculture machinery technician. In Present Department of Teacher Training in Mechanical Engineering (TM), Faculty of Technical Education (FTE), King Mongkut's University of Technology North Bangkok (KMUTNB) has implemented industrial internship program at bachelor's degree and Phradabos school has implemented the dual vocational training project at diploma level which cooperates with Nakornluang Polytechnic College (NPC), Donmuang Technical College (DMTC), Dusit Technical College (DTC), Samutprakan Polytechnic College and Kanchanaphisek Nongchok Industrial and Community Education College (KNICE) but student's learning achievement is low and not meet the requirements of industry. Based on the importance and previous studies about teaching and learning in project subject, the researcher has decided to develop the industrial based learning in project courses for improving problem solving skill and actual work in the workplace. One research question has been addressed: Can IBL use in the project? Industrial based learning in a project course for actual work in the workplace consist of CIPP-MIAP-PBL-3 steps of IBL model, lesson plan, chalk board layout, question list, teaching aids, exercises and keys, examination, assessment form of Vocational Education Commission and evaluation form. The main objectives of this research were as follows:

1. Develop the industrial based learning in vocational diploma program and the bachelor of science in technical education in mechanical engineering program improving problem

- solving skill and actual work in the workplace.

2. Assess the problem solving skill of students.

3. Evaluate the efficiency of learning of the industrial based learning in vocational diploma program and bachelor's degree for actual work in the workplace.

4. Analyze advanced abilities of students.

5. Evaluate the industrial requirements for project workpieces of students.

6. Evaluate student's achievement.

LITERATURE REVIEW

A. Industrial based learning

The industrial based learning (IBL) was a part of active learning. It was applied with teaching and learning in many programs which was mostly about computer, programing and information technology, for undergraduate students more than 25 years ago in Australia [8]-[10] and other places such as New Zealand [11], UK [12], USA [13], Indonesia [14], Kenya [15], etc. IBL has been pivotal in preparing knowledge, skill and attitude of workforce to meet the current and project demands of the global, 21th century and preparing students for meaningful engagement in postsecondary education, in workplace training that relevant to their studies and in career pathway. The students will graduate with knowledge, skill and experience needed to success in learning [16], work and life and many graduating students receive multiple job offers in their final year thus IBL is the benchmark in work-integrated learning for industry. The process of IBL allows for students to develop their knowledge and skills used for their future work. It increases critical appraisal, literature retrieval, encourages ongoing learning within a team environment and reflects the outstanding quality of students and effected the development of teachers also [17]. There was main three steps that comprise of admission, industrial placement and assessment and credit.

B. CIPP

The CIPP is evaluation model that developed by Daniel Stufflebeam and their colleagues in 1960. CIPP process comprise of C: context evaluation, I: input evaluation, P: process evaluation and P: product evaluation.

C. Problem solving skill

The problem solving skill is a complex skill that is one of key skills that are used in UK, Scotland and countries in United Kingdom, The national qualification framework (NVQs) was divided in 7 levels in UK which the competency in NVQs comprise of basic skill, common skill and key skill [18] but basic skill of AQF in Australia was called key competencies that comprise of collecting, analysing and organsing ideals, communication ideals and information, planning

and organizing activities, working with other and in teams, using mathematical ideals and techniques, solving problem and using technology [19]. In Thailand, it was called national qualification framework (NQF) that was divided in 7 levels same UK and the competency in NQF comprise of core skill and occupational skill which both skills were consist of knowledge, psychomotor skill or ability and attitude. The core skill consists of communication, calculation, using information technology, analytic thinking and problem solving and working in teams [20]. The key skill is a range of essential generic skills that underpin success in education, employment, lifelong learning and personal development. People are practical, applied skills relevant both. People in UK will often be developed through other subjects or main programmes but many people also be studied in their own right [21]. Problem solving skill involves with critical thinking, analytic thinking, decision making, creative thinking and information processing [22]-[24]. The three basic step of problem solving that for common job and life comprise of identify the problem, generate a list of possible solutions and implement the solution [25] and the five primary steps of careers in problem solving consist of analyze the causes to unwanted solution, generate the set of alternative interventions to achieve goals, evaluate the best solutions, implement a plan and assess effectiveness [26].

D. Problem based learning

Problem based learning (PBL) has been widely applied in teaching and learning. PBL can be defined as a child-centered pedagogy in which students learn about a subject matter and skills practice through the experience of analytic thinking, systematically thinking, problem solving, critical thinking and creative thinking an open-ended problem found in trigger materials that were prepared by instructor. The problem based learning (PBL) process does not concentrate only on problem solving which one of core competencies with a defined solution, but it allows for the development of other desirable skills, attitude and attributes. This includes knowledge acquisition, enhanced group collaboration, numerical thinking, information and communication technology (ICT) and communication. The problem based learning process was developed for medical and nursing education and has since been extended in applications for other programs of learning, teaching and training [27]-[28]. The procedure of problem based learning allows for students to develop knowledge, skills and attitude used in their future practice which should meet industrial requirements. It improves critical appraisal, literature retrieval and encourages ongoing learning within a team environment. The process of problem based learning consist of clarifying unfamiliar terms, problem definition, brainstorm, analyzing the problem, formulating learning issues, self-study and

reporting [29]. The problem based learning consist of driving questions or challenges, inquiry and innovation, 21th century skills, student voice and choices, feedback and revision and publicly presented product. Problem based learning (PBL) is similar to Project based learning (PjBL) which is a student-driven, "teacher-facilitated approach to learning. The teaching method in which students gain knowledge, skills and attitude by working for an extended period of time to investigate and respond to an authentic, engaging, and complex question, problem, or challenge. Both learning are applied to vocational and technical and engineering education for encouraging student's skills for 21th century: skills for the future [30]-[33].

E. MIAP teaching method

MIAP teaching method was used in learning and teaching for a long time in Department of Teacher Training in Mechanical Engineering, in Electrical Engineering and in Civil Engineering, Faculty of Technical Education, King Mongkut's University of Technology North Bangkok that well known in Thai-German. MIAP was known to be widespread in vocational and technical college of Thailand. The teaching technique is questioning which teacher must prepare question and answer list to help learning of students thus MIAP teaching method can be defined as a child-centered pedagogy. This teaching method consists of 4 steps as follows: 1) M: Motivation 2) I: Information 3) A: Application 4) P: Progression thus MIAP was integrated with 7 steps of PBL for this research [34]-[35].

MATERIALS AND METHODOLOGY

This research was an experimental research as shown in Figure 1. The research model followed IBL integrated with CIPP with MIAP and questioning teaching method and 7 steps of problem based learning: PBL.

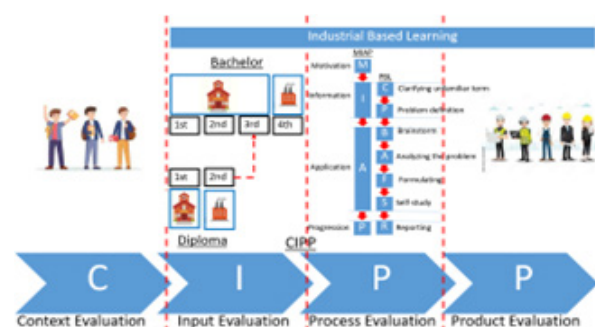


Figure 1. IBL-CIPP-MIAP-7 Steps of PBL model.

First, the IBL program was divided two parts, first part is studying of IBL program in school and second part is internship of IBL program in industry placements along with studying project course I and II. The student's behavior and

background, industrial based learning, problem solving skill, project course I and II description, problem based learning and industrial requirements for improving problem solving skill for technical and engineering workforce labour were analyzed for learning and teaching and then design and development industrial based learning (IBL) which integrated with MIAP teaching method: 1) Motivation 2) Information 3) Application 4) Progression, questioning teaching method and 7 steps of PBL that comprise of 1) C: clarifying unfamiliar term 2) P: problem definition 3) B: brainstorm 4) A: analyzing the problem 5) F: formulating learning issues 6) S: self-study 7) R: reporting. Almost Phrada Bos students and TM-TE-KMUTNB's students as shown in Figure 2. They were poor but those people are interest in learning and have earnest perseverance.



Figure 2. IBL internship of TM-FTE-KMUTNB's students.

A. Industrial based learning

The population was workforce labor that studying in 2nd year internship of IBL program and studied at a diploma certificate level, in 4th year internship of IBL program and studied at a bachelor's degree in IBL program. The sampling group were Phrada Bos's students who studied at diploma certificate level and TM-FTE-KMUTNB's students who studied at bachelor's degree in project course I and II of the industrial based learning program. Phrada Bos's students were 50 registered persons and TM-FTE-KMUTNB's students were 16 registered persons.

B. CIPP

IBL was evaluated by CIPP model. First, evaluate the context such as industrial requirements, law and regulation, technician and engineering workforce labour, etc. Second, evaluate the students, admission, learning and teaching, problem solving skill, resource, etc. Third, evaluate the learning outcome between learning, satisfaction of students, problem between learning and teaching, etc. Fourth, evaluate competency, efficiency of learning, advanced abilities, project workpieces, student's achievement, satisfaction.

C. Problem solving skill

The problem solving skill that was created from the both core skill of Thailand NQF and basic skill of NVQs. Topics in the course description of project course I and II were analyzed by coral analysis technique in order to sub-topics, main elements and course expected learning outcome: CLO that consist of knowledge, skills and attitude.

D. MIAP teaching method

Research tools comprise of lesson plans, chalk board layout, question list, teaching aids, exercises and keys, examination, competency assessment form, assessment form of the Vocational Education Commission that was assessed student's achievement, evaluation form which was used evaluated industrial requirements for project workpieces of students, document templates, laboratory, LINE group, Google classroom and computer room that shown in Figure 3.



Figure 3. Computer room.

RESULTS

The assessment of competency of industrial based learning for improving problem solving skill for technical and engineering workforce labour who studied at diploma certificate level and bachelor's degree in industrial based learning program. Phrada Bos's students were 50 persons and TM-FTE-KMUTNB's students were 16 registered persons. The problem solving skill competency units comprise of PS 2.1, PS 2.2 and PS 2.3 for technician, PS 3.1, PS 3.2 and PS 3.3 for engineer that are assessed and presented in table 1. The results presented of Phrada Bos's students that the pre-test was fair level with average score 20.86 (S.D. = 6.71), the post-test was good level with average score 61.51 (S.D. = 7.94). The results presented of TM-FTE-KUMTNB's students that the pre-test was fair level with average score 40.56 (S.D. = 2.24), the post-test was good level with average score 77.81 (S.D. = 2.83). The results revealed that industrial based learning

for improving problem solving skill was good and student's problem solving skill were good level and increasing.

Table 1. Assessment of problem solving skill of students.
Competency

Competency	Pre-test		Post-test	
	Averg.	Stdev.	Averg.	Stdev.
Phrada Bos's students				
PS 2.1 ¹	21.00	6.91	62.00	7.90
PS 2.2 ²	20.86	6.72	61.55	7.89
PS 2.3 ³	20.72	6.52	60.97	8.03
Average	20.86	6.71	61.51	7.94
TM-FTE-KMUTNB's students				
PS 3.1 ⁴	40.69	2.30	77.88	2.80
PS 3.2 ⁵	40.44	2.13	77.69	2.89
PS 3.3 ⁶	40.56	2.28	74.50	2.80
Average	40.56	2.24	77.81	2.83

¹ Identify a problem, with help from an appropriate person, and identify different way of tackling it.

² Plan and try out at least one way of solving the problem.

³ Check if the problem has been solved and identify way to improve problem solving skills.

⁴ Explore a problem and identify different ways of tackling it.

⁵ Plan and implement at least one way of solving the Problem.

⁶ Check if the problem has been solved and review your approach to problem solving.

The efficiency result of industrial based learning for improving problem solving skill for technical and engineering workforce labour compared between process efficiency (E1) and output efficiency (E2) is presented in table 2. The result of the efficiency of industrial based learning for improving problem solving skill presented that process efficiency and output efficiency E1/E2 was 84.24/80.20 for Phrada Bos's students, 91.38/85.21 for TM-FTE-KMUTNB's students that were above 80/80 established criteria. The result revealed that industrial based learning for improving problem solving skill can be used effectively in 2nd year internship of IBL program and project course for diploma certificate Phrada Bos's students and bachelor's degree TM-FT-KMUTNB's students in the industrial based learning program.

Table 2. Efficiency of industrial based learning for improving problem solving skill.

Evaluation	Total score	Average	Efficiency
Phrada Bos's students			
E1	50	42.12	84.24
E2	30	24.06	80.20
TM-FTE-KMUTNB's students			
E1	50	45.69	91.38
E2	30	25.56	85.21

Table 3 and Figure 4 showed that the scores measured and evaluated learning outcome of students between before studying and after studying by assessing the statistic t-test

for dependence with significance at the 0.01 level. The advanced abilities after studying of students who studied from industrial based learning for improving problem solving skill increased more than before studying. As result t-test which was significantly different at 0.01 levels. The result founded that knowledge, skills and attitude of students were improved.

Table 3. Analysis of advanced abilities.

	N	SX	SD	SD ²	t
Phrada Bos's students					
Pre-test	50	8.98			
			754	11636	45.79
Post-test	50	24.06			
TM-FTE-KMUTNB's students					
Pre-test	16	7.68			
			286	5154	42.85
Post-test	16	25.56			

The Phrada Bos's student who studied at diploma certificate level were 50 persons and TM-FTE-KMUTNB's students who studied at bachelor's degree were 16 persons in industrial based learning project. Table 4 presented that project workpieces were good level with average score 4.40 (Phrada Bos) and 4.50 (TM-FTE-KMUTNB). The results revealed that industrial based learning for improving problem solving skill was good and student's learning achievement were good level. Moreover, most of the project workpieces can meet industrial requirements.

Table 4. Evaluation of project workpieces.

	Phrada Bos	TM-KMUTNB
Appropriated design	4.42	4.58
Drawing & specification	4.33	4.67
Production	4.58	4.75
Valuation	4.75	4.75
Presentation	4.17	4.17
Supported document	4.08	4.08
Ethic & code of conduct	4.50	4.50
Average	4.40	4.50

The result of table 5 presented that the Phrada Bos's students learning achievement were 50 persons and TM-FTE-KMUTNB's students learning achievement were 16 persons which is high.

Table 5. Evaluation of student's achievement.

	Admission	Achievement
Phrada Bos's students	50	50
TM-FTE-KMUTNB's students	16	16

The satisfaction of industrial based learning (IBL) for improving problem solving skill for technical and engineering workforce labour consist of the admission, computer room, laboratory, LINE group, Google classroom, essential theory, progression, document template, MIAP teaching method,

collage service and industry placement are shown in Figure 5 and the student's projects which improving the problem solving skill of students and solving the working problem in actual industrial context that are shown in Figure 6. The result of the evaluation showed that industrial based learning for improving problem solving skill was good with average score 4.41 (S.D. = 0.61).

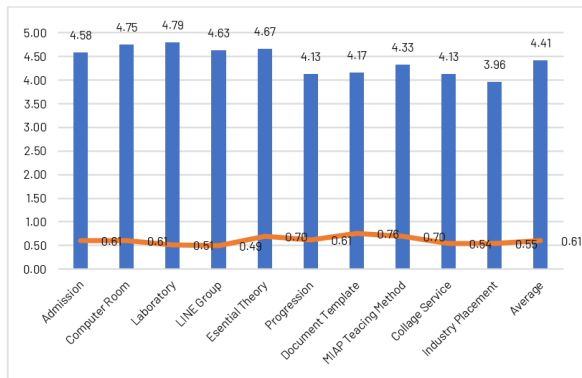


Figure 5. Evaluation of satisfaction of industrial based learning for improving problem solving skill for technical and engineering workforce labour.



Figure 6. Student's projects that solving working problem in actual industrial context

CONCLUSION

The implemented and finished the industrial based learning for improving problem solving skill for technical and engineering workforce labour, the problem solving skill assessment presented that the pre-test was fair level with average score 20.86 (S.D. = 6.71), the post-test was good level with average score 61.51 (S.D. = 7.94) for Phrada Bos's students, the pre-test was fair level with average score 40.56 (S.D. = 2.24), the post-test was good level with average score 77.81 (S.D. = 2.83) for TM-FTE-KMUTNB's students, the efficiency of industrial based learning for improving problem solving skill was 84.24/80.20 for Phrada Bos's students, 91.38/85.21 for TM-FTE-KMUTNB's students that were above 80/80 established criteria. The advanced abilities after learning of students who learned from industrial based learning for improving problem solving skill increased more

than before learning and abilities that met their requirements were developed by IBL, the project workpieces were good level with average score 4.40 (Phrada Bos) and 4.50 (TM-FTE-KMUTNB), Almost project workpieces can meet industrial requirement, the Phrada Bos's student learning achievement is 50 persons and TM-FTE-KMUTNB's students were 16 persons that is high and the evaluation of satisfaction of problem based learning in project course was good with the average score 4.41 (S.D. = 0.61). In the conclusion from the above results, the implementation of industrial based learning for improving problem solving skill for technical and engineering workforce labour can be completely used to learn for Phrada Bos's students and TM-FTE-KMUTNB's students in the industrial based learning program. For the further, next time we will implement this method to improve other core competency.

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