# PROCEEDING OF

# INTERNATIONAL CONFERENCE 2024

HYBRID EVENT

**25th – 26th November 2024**

Organized By

Co-organized by

Publisher: International Institute of Education, Research and Development (IIERD)

# Editorial

We are delighted to extend a warm welcome to all participants attending the International Conference 2024 on 25th – 26th November 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 multidisciplinary fields. It offers delegates an opportunity to exchange new ideas and experiences, establish business or research relationships, and explore global collaborations.

The proceedings for International Conference 2024 contain the most up-to-date, comprehensive, and globally relevant knowledge across various disciplines. All submitted papers underwent rigorous peer-reviewing by 2-4 expert referees, and the papers included in these proceedings were 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 but also serve as a valuable summary and reference for further studies.

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 professors who played an important role in the review process, providing valuable feedback and suggestions to authors to improve their work. We also appreciate the efforts of the technical program committee, reviewers, and authors for their dedication.

Since September 2024, the Organizing Committee has received more than 55 manuscript papers, covering various aspects of multidisciplinary research. After review, approximately 26 papers were selected for inclusion in the proceedings of International Conference 2024.

We thank all participants for their significant contribution to the success of the conference. Our gratitude extends to the keynote speakers, individual speakers, technical program committee, reviewers, and the organizing committee for their efforts in making this conference a reality.

# Acknowledgement

The International Conference 2024, was successfully held in 25th – 26th November 2024. We extend our heartfelt gratitude to our colleagues, staff, professors, reviewers, and members of the organizing committee for their unwavering support in making this conference a success.

We would also like to thank all the participants who traveled far and wide to attend this conference and those who attended the event virtually, making it a truly global event. This conference provided a platform for students, professionals, researchers, and scientists to share their latest research and developments in various disciplines.

The aim of the conference was to promote research and development activities and to encourage scientific information exchange between researchers, developers, professionals, students, and practitioners from all around the world. Once again, we thank everyone who contributed to making this conference a resounding success.

**Dr. Simpson Rodricks**
**President**
**International Institute of Education, Research and Development (IIERD)**

## Contents:

# Abstract

# Exploring Topological Materials for Nano-Devices in Energy Conversion Technologies

**Mohit Mudgal**
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## Abstract:

Topological materials, known for their unique electronic properties such as surface states and Dirac fermions, offer significant potential for advancing energy conversion technologies [1, 2]. In this study, we focus on the PbBi2nTe3n+1 family of topological insulators [3], which exhibit exotic surface behaviours and a π-Berry phase, as observed through Shubnikov-de Haas (SdH) oscillations and angle-resolved photoemission spectroscopy (ARPES) measurements. These properties, combined with the thin, layered structure of the materials, allow for the fabrication of nanometer-thick devices that are highly suitable for energy conversion applications. By exfoliating individual layers from single crystals of PbBi4Te7, Mal et. al. has developed devices that demonstrate enhanced conductance fluctuations and SdH oscillations, which are crucial for optimizing energy conversion efficiency. The modifying layer thickness significantly impacts the topological properties, offering insights for tuning the behaviour of these materials to suit energy conversion devices. At ICREECD-24, I will present our findings on the magnetotransport and ARPES measurements of the PbBi2nTe3n+1 family, followed by a discussion on the development of nano-devices from exfoliated layers. This research opens pathways for leveraging topological materials in next-generation energy conversion technologies, including applications in spintronic devices, quantum sensors, and beyond.

# Micro and Small Business (MSB) Project Planning Governance and Its Impact Upon Project Outcomes

**Andrew Morris**
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## Abstract:

This study's investigation into micro and small business (MSB) project planning was prompted by a serious Australian project management failure due to a mobile home being dropped on two homes during a crane lift because of the inadequate planning of the project. Fortunately, nobody was killed, however the construction company went bankrupt and as a result employees were made redundant. Many project planning issues were discovered after this failure including no method statement or risk assessment and project governance lacking. This led to poor project planning that would have prevented this outcome from the onset.

This study is significant due to the 27 EU member survey showing a 5-year survival rate of only 44% in MSBs and indicates a need to stem project performance decline and improve project governance. Project governance is failing due to poor leadership and commitment from the inception to appoint a project leader and establish a team with clear, defined and agreed project governance. The literature review initiated a sixteen-question investigative interview process which was ethically approved, and pilot trialled and found to be fit for purpose which allowed the main investigation to be undertaken with twenty present and former MSB management and stakeholders. Content Analysis was used in data analysis.

Five research study questions were created to focus on the challenges and improvement of MSB project planning governance (PPG). The research study's aim to create an MSB PPG protocol was met with a MSB PPG front end planning process to minimize the challenges a MSB project team with limited resourced faces in MSB PPG implementation.

The study's knowledge and practice contribution will be to have a universally developed MSB project planning governance protocol which will lead to a significant improvement in project outcomes. Word Count 289 words.

# Investigating Quantum Transport and Magnetic State Evolution for Advanced Renewable Energy Applications in RAlSi (R =rare earth element) Weyl Semimetals

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## Abstract:

Weyl semimetals, particularly the RSiAl family (R = rare earth elements such as Ce, Pr, Nd, Sm, Gd), have emerged as promising candidates for next-generation electronic and spintronic devices due to their unique topological properties and robust quantum effects, such as the topological Hall effect and Shubnikov-de Haas oscillations [1-3]. These materials exhibit exotic electronic states, including type-II Weyl points and strong spin-orbit coupling, which can be harnessed to develop novel functionalities in energy-efficient technologies. In this work, we investigate the electronic and magnetic properties of the RSiAl system, exploring how these topological materials can be utilized in renewable energy applications, such as spin-based thermoelectric devices and energy-efficient data processing. The high mobility, non-trivial Berry phase, and low carrier density in these compounds contribute to enhanced thermoelectric performance and offer pathways for improving energy conversion efficiency. We present a detailed study of the magnetotransport properties across various temperatures and magnetic fields, highlighting the role of quantum oscillations and weak antilocalization effects in optimizing device performance. Additionally, we discuss how the unique band structures of Weyl semimetals could be leveraged to create low-power spintronic devices, potentially paving the way for breakthroughs in sustainable energy technologies. Our findings suggest that the RSiAl compounds, with their combination of topological characteristics and tunable electronic properties, hold significant potential for integration into renewable energy technologies, thereby contributing to the advancement of sustainable and energy-efficient materials.

# Integrating Assemblage Theory and Smart Cities for Comprehensive Urban Planning to Address Urban Sprawl

**Niloufar Fakhar**
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## Abstract:

Integrating the Deleuzian Assemblage Approach with Smart City technologies provides a comprehensive and innovative framework for addressing contemporary urban challenges, particularly urban sprawl. This paper explores how these two approaches can enhance urban planning and sustainable development. By leveraging the relational and emergent properties of assemblage theory and the technological advancements of smart cities, we propose novel strategies to mitigate urban sprawl, optimize land use, and improve urban livability. Detailed case studies from Milan, Barcelona, and Singapore illustrate the practical implementation and outcomes of these integrated approaches, highlighting their effectiveness in creating adaptive and resilient urban systems. The paper concludes with policy recommendations and strategies for fostering community engagement, interdisciplinary collaboration, and adaptive urban governance. Emphasizing long-term health, economic, and environmental benefits, this comprehensive framework aims to create sustainable urban environments capable of addressing the complexities and dynamics of modern urbanization, ultimately contributing to the development of smarter, more efficient, and more livable cities.

# Social Robot Interventions for Child Healthcare

**Hamide Nur Aevik Azdemir**
Afyonkarahisar Health Sciences University

## Abstract:

Social robot interventions in child health are rapidly gaining attention as innovative tools that enhance pediatric care through interactive, child-centered approaches. These robots have shown promise in supporting a range of health needs, from chronic illness management to psychological therapy and social skill development in children with autism spectrum disorder (ASD). This article explores current applications of social robots in child health interventions, highlighting their role in promoting treatment adherence, reducing anxiety during medical procedures, and providing emotional support. Through a review of recent studies and case examples, we examine the effectiveness of these interventions and assess challenges in their integration, including ethical considerations, technological limitations, and acceptance among caregivers and children. The findings underscore the potential of social robots to create positive, engaging healthcare experiences, while emphasizing the need for further research and ethical guidelines to optimize their use. This article aims to provide insights into the current state and future directions of social robot interventions in pediatric healthcare, with a focus on enhancing child health outcomes through technology.

# Needs Analysis for Effective Implementation of Adaptive Personalised e-Learning in Higher Education: The Case of The Maldives National University

**Ibrahim Adam**
Lecturer, The Maldives National University

## Abstract:

The concept of e-learning has evolved significantly, and the advancement brings us towards adaptivity based inventions that are more advanced learning systems. These adaptive personalised learning environments (ALE) that integrate a generalised adaptive content presentational approach to address varying characteristics of learners has become an utmost need of the time for improving learning among the learners of the 21st century. E-learning systems that lack an environment with adaptive features that provide only the same materials to all students and do not consider their needs or abilities are considered a failure. While adaptive learning is emerging as a promising technology to promote access and quality at a large scale in higher education, the implementation of adaptive learning in teaching and learning is still sporadic, and it is unclear how to best design and teach an adaptive learning course in a higher education context. Therefore, in order to determine an effective approach to design and develop such an adaptive personalised e-learning environment, this study formulates the initial step of needs analysis contextualised to the Maldives National University (MNU). This analysis is guided by the integrated frameworks of Activity Theory (AT) and Personalised Learning Design Framework (PLDF). The outcomes will allow the researcher to identify the current practices and what are the needs to address in designing and developing an adaptive learning environment with effective personalised learning approaches in the e-learning delivery of MNU.

## Keywords:

personalised learning, adaptive learning, e-learning

# Multi-Step Time Series Forecasting Using LSTM

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## Abstract:

Time series forecasting is essential in various real-time applications, with deep learning models gaining prominence for their superior performance. This paper provides an overview of time series forecasting, focusing on the long short-term memory network (LSTM), emphasizing the importance of independently developing LSTM algorithm components. We compare the performance of two LSTM models forecasting multi-steps of outputs on power consumption and on a weather dataset by implementing a LSTM architecture for multi-step time series forecasting in Python. The LSTM model considers multiple time steps as inputs and generates multiple time step temperature forecasts in the case of weather dataset, while with the UCI power dataset it generates multiple time step of power consumption. Evaluation metrics and hyperparameter tuning are employed to assess model performance and convergence. Our results highlight the effectiveness of customized LSTM architectures in achieving accurate predictions through innovative design and functional component development.

## Keywords:

LSTM, Time Series Forecasting, Many-to-Many, MSE, Hyperparameter Tuning.

# Analysis of Intelligent Techniques and Advanced Technologies in Global and European Industry

**Pete Malega**

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## Abstract:

The paper provides an in-depth analysis of intelligent techniques and advanced technologies in the global industrial sector, with a focus on Europe and Slovakia. The paper highlights the rapid transformation of industries due to digitalization, automation, and globalization, presenting both challenges and opportunities for businesses. The paper emphasizes the role of major corporations in driving economic growth while outlining the potential risks of economic stagnation, which can lead to job losses and reduced GDP. Technological innovations like Microsoft's HoloLens 2 and Toyota's Gigacast technology are explored, showcasing how companies are integrating cutting-edge solutions to improve operational efficiency and reduce production times. Microsoft's augmented reality (AR) technologies help streamline industrial processes, while Toyota's innovative production systems enable more efficient mass production, particularly in the automotive sector. The use of digital twins and predictive maintenance systems also plays a key role in improving productivity and preventing disruptions in manufacturing. The implementation of IoT and LoRaWAN technologies by companies like Volvo is also highlighted, showing how these advancements are reshaping manufacturing by enabling real-time data collection, predictive maintenance, and improved production workflows. Overall, the paper underscores the critical role of intelligent technologies in modernizing industrial enterprises, enhancing competitiveness, and driving sustainable development across various sectors.

# Study on Sharpening Helical Flute Hobs Using Standard form Grinders

**Chin-Lung Huang***

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## Abstract:

Gear hob sharpening machines, also called hob sharpeners, are specialized forms of grinding equipment. Unlike standard form grinders, hob sharpeners use only one side of the grinding wheel to sharpen the hob cutter's edge, creating a straight profile in the axial section of the cutter. The mechanism configuration of traditional hob sharpeners differs from that of form grinding machines, incorporating a tiled spindle to make it easier to get the corresponding wheel profile by adjusting the circular reference template. In this study, we applied the meshing conditions from theory of the gearing to develop mathematical models for machine setups and wheel profiles required to sharpen helical flute hobs. Additionally, we created a transformed model to adapt machine setups from hob sharpeners to 5-axis form grinding machines. These models were then integrated into custom software that can be installed on 5-axis CNC form grinders without hardware modifications. Finally, the software's performance was verified using expert measuring equipment, with results indicating hob sharpening accuracy significantly surpassing DIN AA grade.

## Keywords:

hob sharpening, helical flute hob sharpening, forming grinding, 5-axis form grinder, machine setting.

# Health and Hermeneutics

**Anita Naemi Holm**
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## Abstract:

Patient-centred treatment and care have become important in contemporary healthcare. There is a growing demand from patients for treatments that consider individual factors. The healthcare sector itself has also pushed for personalised medicine, as individually adapted treatment can be more effective and preventive than standard treatments.

It is also well documented that individuals' perceptions and interpretations of their experiences can significantly impact their health. A classical humanistic discipline like hermeneutics can thus gain renewed relevance in personalized medicine, as it offers insights into understanding the individual as an interpretive being.

The medical sociologist Aaron Antonovsky first introduced the idea that interpretation influences health in his 1979 book, Health, Stress, and Coping. In this paper, I will compare his theory with a classic hermeneutic framework—namely, the German philosopher Hans-Georg Gadamer's theory of human understanding. Through this comparison I argue that hermeneutics should play a more central role in modern medicine.

## Keywords:

Health, humanities, hermeneutics, interpretation.

# Effects of Photobiomodulation in Diabetes: Systematic Review and Meta-Analysis

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## Abstract:

Diabetic neuropathy and diabetic foot are common and debilitating complications of diabetes, leading to pain, nerve damage, poor wound healing, and a higher risk of amputation. Conventional treatments often provide limited relief, prompting the exploration of alternative therapies. Photobiomodulation (PBM), also known as low-level laser therapy (LLLT), is a non-invasive treatment that uses red or near-infrared light to stimulate cellular repair, reduce inflammation, and promote tissue regeneration. This systematic review and meta-analysis aimed to evaluate PBM's physical and mental effects on patients with diabetic neuropathy and diabetic foot. The primary objective of this review is to assess PBM's efficacy in reducing pain and enhancing wound healing in diabetic foot ulcers. Secondary objectives include evaluating the effects of PBM on circulation, improving nerve function, inflammation, and psychological outcomes such as quality of life and mental well-being in diabetic patients. A systematic search will be conducted in databases, including PubMed, Embase, and Cochrane Library, to identify randomized controlled trials (RCTs), quasi-experimental, and observational studies. Eligible studies will compare PBM to placebo, sham therapy, or standard care in adult patients with diabetic neuropathy or diabetic foot. Data on pain reduction, nerve function improvement, wound healing, and psychological effects will be extracted and analyzed. A meta-analysis will be performed using a random-effects model to calculate pooled estimates of treatment effects, and subgroup analyses will be conducted to explore potential moderating factors. The risk of bias will be assessed using the Cochrane Risk of Bias 2.0 tool for RCTs. This review is expected to provide evidence of the effectiveness of PBM in alleviating the symptoms of diabetic neuropathy and promoting wound healing in diabetic foot ulcers. Results suggest that PBM may reduce pain and accelerate wound healing. The meta-analysis will quantify the overall treatment effects and identify gaps in the current evidence base. Photobiomodulation shows promise as a complementary therapy for managing diabetic neuropathy and diabetic foot, offering both physical and mental benefits. This systematic review and meta-analysis will contribute to the growing body of literature by comprehensively assessing PBM's effectiveness in these populations. The findings may guide future clinical practice and inform decision-making regarding integrating PBM into diabetes care.

## Keywords:

Photobiomodulation, Low-level Laser Therapy, Diabetes, Pain Reduction, Wound Healing, Systematic Review, Meta-analysis

# Multi-Objective Evolutionary Approach for the Supply-Chain

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## Abstract:

Supply chain management (SCM) is a critical component of modern business operations, encompassing the planning and management of all activities involved in sourcing, procurement, conversion, and logistics management. This paper aims to provide a comprehensive overview of supply chain management, exploring its fundamental concepts, the challenges faced by organizations, and the innovations shaping the future of SCM. Supply chain management has evolved into a vital area of study and practice within the field of operations management. It involves the coordination and integration of these flows both within and among companies. The objective of SCM is to maximize customer value and achieve a sustainable competitive advantage. This paper will explore the key components of supply chain management, the challenges faced by organizations, and the innovations that are transforming the landscape of SCM.In this paper we define goals for SCM. Next we solve the problem with the Simulated Annealing (SA). Since there is more than one goal, we use PARETO theorem that is allow us to optimize different goals simultaneously.

## Keywords:

Supply Chan, Evolutionary Optimization, Simulated Annealing, Multi Objective Optimization.

# Circular City Challenge - A Case Study for Built Environment Education (BEE) and Sustainable Development Education (SDE) as Interdisciplinary Approaches

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## Abstract:

Transitioning from linear to circular cities is one of many approaches to reach a higher level of urban sustainable development. To achieve this transition, education in urban circularity needs to be at the center of the global SDE. CCC – Circular City Challenge was a 3-year project funded by the EU aiming at to integrate Circularity in School Curricula using tools such as Creating a Next Generation Participatory Contest for Young People, The analysis of curricula from the 3 participating European countries (NL, RO, AU) highlighted that there are many steps that can be to taken. UNESCO guidelines on SDE also point to the need to integrate the approach – how do you do integrated learning when you still have subject-specific curricula in schools. In the process of explaining the Circular City there should be a multidisciplinary definition – one that refers to the economy that no longer takes resources from nature and the way it manifests itself in city spaces. There is a whole series of research projects and publications about local circularity policies - which guide city halls towards complex actions, but there is a need to better define methods on circularity behaviors in relation to the built environment, which are a pre-condition for all urban actors to be able to understand and apply public policies for circularity. In CCC, we tested an approach that connects the education system with local public policies through project-based learning, a method that also takes into account the recommendations to motivate students by putting them in competition.

## Keywords:

circular city, urban circularity, SDE - sustainable development education, BEE - built environment education, project based learning.

# Mechanical Properties of Recycled Aggregate Concrete Reinforced with Sisal Fiber

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## Abstract:

A potential solution to the problem of limited disposal sites, is to use the waste from demolished structures as recycle-aggregate. Sisal fibre (SF) is a natural fibre from plant leaves, it has been used in concrete to improve the weak tensile and flexural properties of concrete. The materials were chosen to improve the strength properties of the concrete and ensure sustainability and improved quality. This paper presents an investigation of the mechanical properties of grade M30 recycle-aggregate concrete incorporated with sisal fibre at different fibre proportions of 0%, 0.5%, 1%, 1.5%, and 2%. The assessment of concrete properties will include the workability of concrete using a slump test, compressive strength test, splitting tensile test, and flexural strength test at the age of 7 and 28 days of curing. The slump values of concrete are lower to the tune of 1.44 – 6.52 %. The compressive strength of sisal fibre recycle-aggregate concrete (SFRAC) increased from 3.87% to 11.15%. The maximum increase in splitting tensile strength of 13% was obtained at a sisal fibre volume fraction of 1.5% along with 50% recycled aggregate. The addition of sisal fibres significantly improves the mechanical properties of concrete.

## Keywords:

Sisal fibre, Recycle-Aggregate Concrete, Tensile strength, Compressive Strength, Sustainable Development

# Detection of Malicious Links within the Scope of Web Security Using Machine Learning

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## Abstract:

In the current digital age, the widespread use of the internet has made websites an indispensable aspect of daily life for many individuals. Nevertheless, some of these websites may contain malicious links that pose serious security risks to users. Therefore, web security and the detection of malicious links have become pivotal issues in contemporary information security research. This project aims to provide an effective solution for protecting websites against malicious links and ensuring user safety. The main objective is to develop a tool that allows users to verify the security status of a given website. This tool will take a website URL as input, initially assessing whether it is listed among known malicious sites, followed by employing a machine learning model to further evaluate its safety. The primary focus areas of this project include web security, detection of malicious links, applications of machine learning, and the development of a user-friendly interface. This study demonstrates the potential of leveraging advanced technologies in cybersecurity to enable users to navigate the internet safely.

## Keywords:

Web Security, Malicious Link Detection, Machine Learning, Information Security, URL Safety Evaluation.

# Severe Penetrating Craniofacial Stab Injury with Retained Sharp Knife with Rounded Handle: A Very Rare Case

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## Abstract:

**Background:** Craniofacial penetrating injuries are unusual but may cause massive injury to facial tissues and severe brain damage if cranium is entered. Because of the very critical anatomical area involved, these injuries can be challenging to the physicians who first receive them as well as the treating team. Prompt evaluation by utilizing the best diagnostic modality available and timely interference to remove foreign objects is the key aspects to avoid damage to vital organs surrounding the injury and to minimize the late complications.

**Case report:** We report a case of 24 year old male presented in surgical emergency that sustained a severely penetrating craniofacial assault with a 15 centimeter long sharp knife with intact iron handle and retained blade. Patient was adequately resuscitated and x- ray skull and CT of head along with 3 dimensional reconstruction of face was done to assess any injury. CT scan showed no brain parenchymal injury and only undisplaced fracture of the anterior cranial fossa.

**Methods and Result:** Patient was explored surgically on an emergency basis. The debridement of the wound was done, bone fragments and necrotic tissue was excised. The penetrating knife was gradually removed after surgical procedure. The patient recovered well, and there was no neurological deficit on discharge.

**Conclusion:** The management of penetrating craniofacial trauma is a challenging task and should be handled by multidisciplinary team, so that the management and outcome can be favorable.

## Keywords:

Daylighting, Urban Daylight Simulation, Machine Learning, Artificial Neural Networks.

# Digital Pedagogy in Higher Education and Student Engagement

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## Abstract:

Although digital pedagogy in higher education has been pervasive the last two decades, the Covid-19 pandemic catapulted all educators into this arena. And although many educators had previous experience building digital course content, a large number of educators on our campus struggled daily to keep their “digitally native” Generation Z students virtually engaged in both asynchronous and synchronous modalities. Experimenting with the Voice Thread© (VT) platform, we discovered that this digital tool helped us to create learning environments that significantly heightened student engagement, not only with course material, but within the learning environment as well. Our theoretical premise for this outcome is the idea that VT is a tool that has the ability to create the aura of an authentic, real-time, social presence. As supported by the literature and incorporated into our proposed model, social presence is key for spurning involvement and subsequently increasing engagement. Our literature review also supported the notion that the multi-media capacity of VT gave students the ability to interact with course material, their peers and the instructor in meaningful ways. It also gave students the freedom to practice self-expression, creative content development and public speaking/writing skills. From our professional vantage point, VoiceThread can be used for creating an authentic social presence in both synchronous and asynchronous learning environments. A significant managerial implication of VT use is increased student satisfaction. Extrapolating this beyond a single course, we see higher-arching ramifications including increased student persistence and ultimately retention, important metrics in higher education.

## Keywords:

Generation “Z” Marketing Student; VoiceThread; Digital Education, Social Presence; Student Engagement.

# The Mediating Role of Distributive Justice on the Relationship between Narcissistic Leadership and Work Engagement

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## Abstract:

Narsist liderler kendini mükemmel gören, başarıyı tümüyle kendine maleden, olayları bütünüyle kontrol etme isteği duyan, eleştiriye aşırı duyarlı, her konuda kendini haklı gören, çevresindekileri önemsemeyen ve kuralların kendisi için geçerli olmadığına inanan liderlerdir (Baltaş, 2016). İşe tutkunluk, kişinin örgütün başarısına katkı sağladığını hissetmesine ve işinin gerektirdiğinden daha yüksek bir performans sergileyerek motive olmasına neden olan psikolojik bir durumdur (Mercer, 2007). Narsist liderlerin çalışanlar üzerindeki etkisi onların işe tutkunluklarını olumsuz yönde etkilemektedir. Örgütsel adaletin alt faktörlerinden biri olan dağıtımsal adalet kavramı ise bir örgüt veya bireyin ürettiği değer ile hak ettiği değeri kıyaslamasıyla çalışanların elde ettikleri sonuçların adil olduğuna inandıklarında ortaya çıkar. Çalışanlar, hak ettikleri ödemeyi aldıklarına veya eşit muamele gördüklerine inandıklarında, bu dağıtım adaleti algısını pozitif şekilde sonuçlanır (Colquitt ve ark., 2013). Bu araştırmada, narsist liderlik ile işe tutkunluk arasındaki ilişkide dağıtım adaletinin aracı rolü incelenmiştir. İstanbul'da görev yapan 215 beyaz yakalı çalışandan veri toplanmıştır. Yapılan yapısal eşitlik modeli analizi sonucunda narsist liderliğin işe tutkunluk üzerinde olumsuz etkisinin bulunduğu ve dağıtım adaletinin aracı rol oynadığı belirlenmiştir.

## Keywords:

Distributive Justice, Narcissistic Leadership and Work Engagement.

# Challenges in Parasitic Copepod Researches

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## Abstract:

Aquaculture, which supplies approximately 15% of the world's animal protein, has achieved a production volume of around 223 million tons. However, diseases in aquaculture, particularly those caused by parasitic copepods, result in significant economic losses. Consequently, numerous studies aim to address the economic impact of parasitic copepods on aquaculture. Research into these parasitic copepods is fraught with technical, ecological, and methodological challenges that complicate the study of their biology, ecology, and interactions with hosts. First of these challenges are due to the logistical difficulties associated with observing, sampling, and conducting field studies in aquatic environments. Additionally, some researchers emphasize that field and laboratory limitations in capturing copepod-host dynamics obstruct a comprehensive understanding of their ecological roles within aquatic systems. Secondly, factors such as species misidentification, preservation challenges of type materials, and reporting inaccuracies compound the taxonomic issues, further complicating studies on these parasitic organisms. Furthermore, the minute sizes and complex anatomical structures of parasitic copepods present additional difficulties in performing optical, physiological, and biochemical examinations. Addressing these multifaceted challenges is essential for advancing research and developing effective strategies to mitigate the impact of parasitic copepods on aquaculture.

# Special Education for Children with Autism Spectrum Disorder (ASD) in Turkey

**Yeşim Güleç Aslan**
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## Abstract:

Autism spectrum disorder (ASD) is a neuro developmental disability characterized with difficulties in social communication skills. Also it, is restricted with repetitive patterns of behavior, interest, and activity (American Psychiatric Association [APA], 2013). This study will include theoretical information based on the literature about special education for children with autism spectrum disorder (ASD) in Turkey, on the basis of current ASD interventions. The study aims to present the findings of a systematic literature review study that includes basic information about educational situations for children with ASD in Turkey. This type of study involves systematically examining, summarizing and synthesizing studies on a subject. In this regard, information will be presented about special education environments in Turkey, special education practices and evidence-based interventions for individuals with ASD. It is hoped that this study will be a guide in terms of presenting information about Turkey to the international literature and shedding light on intercultural ASD studies.

## Keywords:

Autism spectrum disorder, evidence-based interventions, special education American Psychiatric Association [APA], (2013).

# Spatial Characteristics and Influencing Factors of Tourism Efficiency: A Case Study of Yunnan Province, China

**Zhuolin Liu**
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**Ye Yuan**
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## Abstract:

The tourism industry has become a powerful engine for economic growth, with tourism efficiency crucial for improving sector quality. This study takes Yunnan Province, China, as an example and employs the entropy weight method and the DEA-Malmquist model to analyze tourism efficiency from 2016 to 2022. Additionally, a Tobit regression model examines the key influencing factors. The results show: (1) Efficiency and scale efficiency change across various districts remained relatively stable, with values close to 1, suggesting that technological progress is the primary driver of total factor productivity growth. (2) Most regions exhibited stable scale efficiency change and pure technical efficiency change values close to 1, indicating minimal changes in scale adjustment and technology utilization. (3) The DEA-CRS model reveals that most districts experienced significant fluctuations in technical efficiency, particularly with a notable decline in 2020 due to COVID-19. However, Kunming maintained relatively stable, while districts such as Chuxiong, Lijiang, Pu'er, and Qujing sustained relatively high technical efficiency levels, indicating strong management capabilities and efficient resource allocation. (4) The total factor productivity in Kunming and Yuxi was the highest, highlighting their advanced resource use and technology. (5) Tourism efficiency is positively influenced by government intervention, human resources, and infrastructure.

## Keywords:

Tourism Efficiency; DEA-Malmquist Index Model; Tobit Model; Yunnan Province, China.

# Mathematics as the Foundation for the STEM Disciplines: Different Pedagogical Strategies Addressed

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## Abstract:

There is a mathematics requirement for entry level college and university students, especially those who plan to study STEM (Science, Technology, Engineering and Mathematics). Most of them take College Algebra and to continue their studies they need to succeed in this course. Different pedagogical strategies are employed to promote the success of our students. There is, of course, the Traditional Method of teaching- lecture, examples, problems for students to solve. The Emporium Model, another pedagogical approach, replaces traditional lectures with a learning resource center model featuring interactive software and on-demand personalized assistance. This presentation will compare these two methods of pedagogy and the study done with its results on this comparison.

Math is the foundation for science, technology, and engineering. Its work is generally used in STEM to find patterns in data. These patterns can be used to test relationships, draw general conclusions about data, and model the real world. In STEM, solutions to problems are analyzed, reasoned, and interpreted using math abilities in a assortment of real-world scenarios. This presentation will examine specific examples of how math is used in the different STEM disciplines.

Math becomes practical in science when it is used to model natural and artificial experiments to identify a problem and develop a solution for it. As we analyze data, we are using math to find the statistical correlation between the cause of an effect. Scientists who use math include the following: data scientists, scientists, biologists and geologists.

Without math, most technology would not be possible. Math is the basis of binary, and without programming, you just have the hardware. Addition, subtraction, multiplication, and division is also used in almost every program written. Mathematical algorithms are inherent in software as well.

Mechanical engineers analyze scientific data to design robots by applying math and using software. Electrical engineers use math to help design and test electrical equipment. They also use math when creating computer simulations and designing new products. Chemical engineers often use mathematics in the lab. Advanced computer software is used to aid in their research and production processes to model theoretical synthesis techniques and properties of chemical compounds.

Mathematics mastery is crucial for success in the STEM disciplines. Pedagogical research on formative strategies and necessary topics to be covered are essential.

## Keywords:

Emporium Model, Mathematics, Pedagogy, STEM.

# The Role of Agriculture Tourism and Farming in Sustainable Rural Development by Green Cooperative Society Cameroon GCOOPCAM

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CEO, GCOOPCAM accompanied by four heads of departments as listeners, Tourism and Farming project in Cameroon

**Ashu Larrisa Ebangha – Wotame**
Green Cooperative Society Cameroon (GCOOPCAM)

## Abstract:

Agricultural tourism, a rapidly growing sector, offers immense potential for sustainable rural development. This abstract presents the findings of a comprehensive study conducted by GCOOPCAM, a farmers cooperative dedicated to promoting cooperation among organisations and farmers. The study investigates the role of agricultural tourism in fostering economic growth, preserving cultural heritage, and enhancing environmental sustainability in rural communities of Cameroon.

Cameroon is one of the most tourism-dependent regions in West Africa, with tourism earnings accounting for over 30% of GDP in some Regions. However, despite the significant benefits of tourism, linkages between tourism and other economic sectors, such as agriculture, are often weak. As a result, the benefits of tourism are not distributed widely, particularly in rural areas where poverty rates are highest.

**Methods:** The study employs a mixed-methods approach, combining qualitative and quantitative data collection. In-depth interviews were conducted with key stakeholders, including farmers, tourism operators, and local government officials. Focus groups and surveys were used to gather data from rural communities and tourists.

Promoting agritourism is a strategy to enhance the linkages between tourism and agriculture, and to strengthen rural economies in Cameroon. By supporting local agriculture and food production, agritourism can help to improve food security, reduce dependence on food imports, and create new income and livelihood opportunities for rural communities, while promoting sustainable agriculture practices and environmental stewardship.

**Results:** The findings reveal that agricultural tourism has a significant positive impact on rural economies in Cameroon and Africa in general. It creates employment opportunities, stimulates local businesses, and diversifies farm income sources. Furthermore, agricultural tourism helps preserve cultural heritage by showcasing traditional farming practices, culinary traditions, and rural landscapes. It also promotes environmental sustainability through the adoption of sustainable farming practices and the conservation of natural resources.

**Conclusion:** Our study concludes that agricultural tourism is a powerful tool for sustainable rural development. It can contribute to economic growth, preserve cultural heritage, and enhance environmental sustainability. By supporting the development and promotion of agricultural tourism, policymakers and stakeholders can unlock the potential of this sector and create more vibrant and resilient rural communities.

# The Usual Kind of Reason that People Apply: Would It Be Thinkable Without Being Situated in Vernacular Language and Lived Experience?

**Taye Birhanu Taressa**

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## Abstract:

World view and public philosophy of a particular cultural group or society is embedded in its vernacular language and lived experience. Lived experience is very important in holding together the connection between a thing and its meaning. An attempt to judge a particular cultural practice and knowledge's rationality without being aware of its primary values and beliefs would go the risk of misinterpreting and distorting. There must be a room for a diversified conception of rationality to creating a better world and/or enhancing humanity. In contrary, to what has been the case with in the so called "post-colonial Africa" the mental, spiritual, and emotional aspect of independence should have been given priority followed by the physical aspect of independence. Most emphasis for African philosophy must be constructing and re-constructing the indigenous knowledge and world views of African societies. This could be followed by less emphasis on deconstructing the deliberate prejudices and distortions prevailed in the then physical colonizers and the present mental and spiritual colonizers of Africa.

## Keywords:

Vernacular language; lived experience; usual kind of reason.

# Exploration and Definition of Urban Neighborhood Units Using Big Data: Spatial Behavior Pattern Analysis

**Jung Ok Kim**
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## Abstract:

Neighborhood units refer to the spatial range within which people conduct their daily lives. As they represent the most suitable spatial units for recognizing daily lifestyle patterns and establishing functional transportation systems, identifying differences in neighborhood unit segmentation patterns based on urban characteristics and timeframes is essential for creating and providing optimized transportation services for each space. In this study, we applied a Community Detection method to mobile travel data processed from cellular base station data to derive multi-level neighborhood units for Seoul, South Korea, including the concept of a 15-minute city. Seoul's travel movement data is derived from mobile signals aggregated at base stations, showing population movements between origin and destination points. Additionally, the network-based community detection approach has advantages over traditional functional region analysis methods, as it does not rely on distinguishing between central and peripheral areas or on predefined criteria to establish functional regions. Instead, it determines regional integrations and the final number of functional zones within the model itself, eliminating arbitrariness in the analysis process.

## Keywords:

Neighborhood, Community Detection, Mobile Travel Data, Spatial Behavior Patterns.

# Clinical Competencies for Nurses in Peri Anesthesia as Considered by Expert Leaders

**Ayako Takeda**
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## Abstract:

**Objective:** This study qualitatively describes the opinions of expert leaders about nurses' involvement in perianesthesia and constructs a clinical competency model for preoperative, intraoperative, and postoperative nursing. The results provide suggestions for topics to be covered by educational programs on perianesthesia nursing.

**Methods:** Semi-structured interviews were conducted with 11 nurse supervisors involved in perianesthesia from university hospitals and acute care hospitals nationwide. Subsequently, a longitudinal comparative analysis was performed.

**Results:** Four categories of preoperative competencies were constructed regarding collecting and assessing preoperative patient information: "ability to perform preoperative patient information gathering assessments," "explaining surgery to patients," "planning and preparing for surgical nursing care," and "ability to share patient information with the team and multiple disciplines." Eight categories of intraoperative competencies were defined: "preparation for surgery and mental support of the patient," "safe positioning of the patient," "safe anesthesia management," "communication with multiple professions," "judgment of the situation," "managing intraoperative nursing and emergency staff," "ability to mentor and train junior staff," and "ethical leadership." The postoperative category comprised five categories: "ability to make clinical judgment regarding anesthesia awakening," "consulting with other staff," "conveying information to ward nurses," "visiting patients postoperatively and evaluating intraoperative nursing care," and "managing the organization during adverse events."

**Conclusion:** The results suggest that perianesthesia nurses must be educated in the following areas: preoperative patient education, clinical judgment during and after surgery, strengthening of multidisciplinary collaboration, intraoperative ethical sensitivity, and the ability to share and solve ethical problems that are difficult to solve individually with a team.

## keywords:

expert leaders, clinical competency, perianesthesia, nurses