

**WCC AERONAUTICAL & TECHNOLOGICAL COLLEGE INC.- BINALONAN**

# RESEARCH JOURNAL

## RISE-ICREATE: IMPACT 2025 BOOK OF ABSTRACTS

**SPECIAL EDITION NO. 1**



**Theme: Interdisciplinary and Multidisciplinary  
Presentation Advancing SDG-focused  
Collaboration and Technological Innovation**

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**WCC AERONAUTICAL & TECHNOLOGICAL COLLEGE INC.-BINALONAN  
RESEARCH JOURNAL RISE-ICREATE: IMPACT 2025  
BOOK OF ABSTRACTS**

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Brgy. Canarvacanan, Binalonan, Pangasinan

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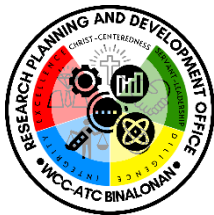
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Binalonan, Pangasinan, Philippines

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## MESSAGE FROM THE PRESIDENT

**Dr. Raymond Patrick V. Guico**  
*President*  
*WCCATC & World Citi Colleges*



*It is with deep academic respect and institutional pride that I extend my sincere welcome to all participants, presenters, and guests of the RISE 2025 International Research Conference.*

*The WCC Aeronautical & Technological College Inc.–Binalonan Research Journal: RISE–ICREATE: IMPACT 2025 Book of Abstracts, derived from the International Research Conference and SDG Collaboration, serves as a strategic academic platform for researchers, educators, professionals, and policymakers to engage in scholarly discourse and present research outputs aligned with the conference theme, “Research Innovation for Sustainable Education 2025: International Conference on Research and Exhibits on Aviation, Aeronautics, Tourism, Engineering, and Education (RISE 2025: ICREATE–IMPACT),” anchored on “Interdisciplinary and Multidisciplinary Presentation Advancing SDG-Focused Collaboration and Technological Innovation.”*

*In alignment with the institutional mandate to advance knowledge generation, this publication underscores the critical role of research in producing sustainable, evidence-based, and transformative solutions across diverse academic and professional disciplines. It reflects the institution’s commitment to strengthening research culture through innovation, collaboration, and scholarly rigor.*

*I extend my highest recognition to the organizing committee and panel reviewers, and contributing scholars whose academic rigor and commitment have enriched this conference. In particular, the integration of the SDG Collaborative Program reinforces our shared responsibility in aligning institutional research with the United Nations Sustainable Development Goals. This program highlights how academic initiatives can be strategically designed to respond to urgent global priorities such as climate action, quality education, good health and well-being, and sustainable communities.*

*May this gathering serve not only as a venue for dissemination but also as a catalyst for meaningful collaboration, policy formulation, and applied innovation. We look forward to the scholarly contributions that will emerge from this conference and their potential to advance academic excellence, institutional relevance, and societal development.*

**Research Innovation for Sustainable Education 2025:  
2<sup>ND</sup> International Conference on Research & Exhibits on Aviation,  
Aeronautics, Tourism, Engineering & Education  
(RISE 2025: ICREATE-IMPACT)  
May 28 to 30, 2025**

*Theme: Interdisciplinary and Multidisciplinary Presentation Advancing SDG-  
Focused Collaboration and Technological Innovation*

<b>Main Organizer</b>	WCC AERONAUTICAL & TECHNOLOGICAL COLLEGE INC., BINALONAN CAMPUS
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<b>SDG Advisory Board, SDG Program Research Conference Advisory Board</b>	HEI Co-Organizers Representative HEIs Collaborators Representative
<b>HEIs Co-Organizers</b>	Baguio Central University Lyceum Northwestern University Pangasinan State University University of Luzon Urdaneta City University WCC Aeronautical and Technological College – North Manila
<b>HEIs Collaborators</b>	World Citi Colleges Pangasinan Polytechnic College Universidad de Dagupan University of Eastern Pangasinan

## **Rationale**

The WCC-ATC Binalonan Campus will host the 3rd Research Innovation for Sustainable Education 2025: International Conference on Research & Exhibits on Aviation, Aeronautics, Tourism, Engineering & Education (RISE 2025: ICREATE-IMPACT) with the theme Interdisciplinary and Multidisciplinary Presentation Advancing SDG-Focused Collaboration and Technological Innovation. This event is scheduled to take place on **May 28 to 30, 2025**, the conference will serve as a premier platform for showcasing cutting-edge research, fostering academic collaboration, and promoting sustainable development.

In addition to the international research presentation, the event will feature an SDG Boot Camp and Round Table Discussion, alongside the establishment of collaborative programs and research among various higher education institutions (HEIs), including joint research initiatives. These activities align with the Harmonized National Research Agenda and the United Nations Sustainable Development Goals (SDGs), reinforcing the commitment to interdisciplinary and multidisciplinary research collaboration.

**RISE 2025: ICREATE-IMPACT** aims to provide a dynamic venue for researchers, educators, graduate students, college students and industry professionals to engage in meaningful discourse, present groundbreaking studies, and exchange best practices across multiple disciplines, including aviation, aeronautics, tourism, engineering, and various fields of discipline. The conference will feature:

- **Keynote Addresses** by distinguished scholars and industry experts
- **Plenary Sessions** on emerging research trends and technological advancements
- **Panel Discussions** on pressing global issues and collaborative solutions
- **Paper Presentations** highlighting innovative research findings
- **Project Exhibits** showcasing prototypes, sustainable initiatives, and academic innovations
- **SDG Boot Camp & Round Table Discussions** fostering interdisciplinary dialogue on sustainable development goals, policy implications, and industry-academic collaborations.

The conference will highlight the latest developments in aviation, aeronautics, tourism, engineering, and technology in various fields of education while addressing critical challenges and exploring opportunities for growth and sustainability. Furthermore, it highlights the role of business, finance, management, hospitality and tourism, and education in shaping global economies and promoting sustainable practices, emphasizing strategies to enhance visitor experiences, preserve cultural heritage, and foster community development.

Beyond aviation and tourism, RISE 2025: ICREATE-IMPACT expands its reach to food technology, civil, mechanical, electrical, and computer engineering, educational technology, social sciences, arts and humanities, criminal justice, and health technology, facilitating research that drives innovation and benefits diverse communities.

Organized by WCC-ATC Binalonan Campus in collaboration with various HEIs, the event provides a platform for academic and professional exchange, offering participants opportunities to engage in collaborative research, network with peers, and contribute to the advancement of sustainable education. Aligned with the United Nations Sustainable Development Goals (SDGs), the conference fosters interdisciplinary research, technological

innovation, and academic collaborations that promote sustainability across various fields. Through interactive exhibits, thought-provoking –discussions, and scholarly presentations, RISE 2025: ICREATE-IMPACT is poised to make a significant impact on research and innovation, driving sustainable solutions for a better future.

## FOCAL AREAS

The following are the SEVEN (7) significant research program areas:

1. Aviation & Aeronautics
2. Tourism & Hospitality Management
3. Engineering and Technology
4. Business, Finance, and Management
5. Educational Technology, Social Studies, Arts & Humanities
6. Criminal Justice Education Technology
7. Health Technology

## SUB-TOPICS ALIGN WITH SDGS:

The sub-topics represents the diverse fields of aviation, tourism, engineering, education, and beyond while emphasizing sustainable development. Each focal area is tied to relevant SDGs to provide a robust framework for interdisciplinary exploration.

### **1. Aviation & Aeronautics**

Innovations for greener aviation, sustainable airport infrastructure, autonomous and electric aircraft, aviation fuel alternatives, emission reduction strategies, and climate-resilient aviation policies.

- **SDG 9 (Industry, Innovation, and Infrastructure)**
  - a) Innovations in aeronautics engineering for greener aviation
  - b) Sustainable airport infrastructure and management
  - c) Autonomous and electric aircraft technologies
- **SDG 12 (Responsible Consumption and Production)**
  - a) Development of sustainable aviation fuels
  - b) Lifecycle management of aviation components
  - c) Reducing waste in airline operations
- **SDG 13 (Climate Action)**
  - a) Strategies to achieve carbon-neutral aviation
  - b) Climate-resilient airport designs
  - c) Policies for reducing aviation-related emissions

### **2. Tourism & Hospitality Management**

Sustainable tourism practices, eco-tourism development, community-based tourism, responsible resource management in hospitality operations, job generation, and cultural heritage preservation.

- **SDG 8 (Decent Work and Economic Growth)**
  - a) Sustainable tourism as a driver for inclusive economic growth
  - b) Job creation in the tourism and hospitality sectors

- c) Promoting fair labor practices in the hospitality industry
- **SDG 11 (Sustainable Cities and Communities)**
  - a) Community-based tourism for cultural heritage preservation
  - b) Urban planning for sustainable tourism infrastructure
  - c) Eco-tourism initiatives for biodiversity conservation
- **SDG 12 (Responsible Consumption and Production)**
  - a) Reducing food and material waste in hospitality
  - b) Sustainable resource management in hotels and resorts
  - c) Consumer education for responsible tourism practices

### **3. Engineering and Technology**

Smart infrastructure systems, climate-resilient engineering designs, automation and robotics, digital transformation in industry, circular economy applications, and renewable energy innovations.

- **SDG 9 (Industry, Innovation, and Infrastructure)**
  - a) Smart technologies for resilient infrastructure
  - b) Automation and robotics for efficient manufacturing
  - c) Digital transformation in engineering industries
- **SDG 13 (Climate Action)**
  - a) Engineering solutions for renewable energy
  - b) Climate-resilient infrastructure in disaster-prone areas
  - c) Carbon capture and storage technologies.
- **SDG 12 (Responsible Consumption and Production)**
  - a) Circular economy models in engineering practices
  - b) Sustainable material innovations
  - c) Energy-efficient systems for industrial applications

### **4. Business, Finance, and Management**

Financial inclusion strategies, green and social enterprise models, economic diversification, value chain development, digital financial systems, and multi-sectoral partnerships for sustainability.

- **SDG 1 (No Poverty)**
  - a) Financial inclusion strategies for poverty alleviation
  - b) Micro-enterprises and their role in economic empowerment
  - c) Social enterprises for community development
- **SDG 8 (Decent Work and Economic Growth)**
  - a) Strategies for sustainable economic diversification
  - b) Green business models for long-term growth
  - c) Digital finance and its impact on job creation
  - d) Value Chain Analysis of Agricultural Products
- **SDG 17 (Partnerships for the Goals)**
  - a) Public-private collaborations to achieve SDGs
  - b) Knowledge-sharing platforms for global partnerships
  - c) Policies for incentivizing sustainable investments

## **5. Educational Technology, Social Studies, Arts & Humanities**

Integrating inclusive digital education to promote equitable learning and cultural understanding in support of sustainable development.

- **SDG 4 (Quality Education)**
  - a) Digital learning platforms for equitable access
  - b) Educational policies for inclusive learning environments
  - c) Lifelong learning and upskilling for the 21st century
- **SDG 5 (Gender Equality)**
  - a) Promoting gender equity through education
  - b) Women in STEM fields and leadership roles
  - c) Addressing educational barriers for marginalized groups
- **SDG 16 (Peace, Justice, and Strong Institutions)**
  - a) Education as a tool for civic engagement and peacebuilding
  - b) Multicultural education for reducing social conflicts
  - c) Institutional reforms through educational initiatives.

## **6. Criminal Justice Education Technology**

Innovative strategies to enhance justice systems and promote equitable governance, legal technology integration, transparency and governance in justice institutions, community-centered justice programs, and international justice reform collaborations.

- **SDG 10 (Reduced Inequalities)**
  - a) Justice reforms for marginalized and vulnerable communities
  - b) Addressing socioeconomic disparities through legal frameworks
  - c) Community-based approaches to justice delivery
- **SDG 16 (Peace, Justice, and Strong Institutions)**
  - d) Leveraging technology for efficient judicial processes
  - e) Strengthening institutional transparency and governance
  - f) Crime prevention through education and awareness
- **SDG 17 (Partnerships for the Goals)**
  - g) International collaborations for justice reforms
  - h) Research networks focused on legal technology
  - i) Public-private initiatives for equitable justice systems

## **7. Health Technology**

Integrating technological advancements to enhance healthcare education, training, and public awareness, health and digital literacy in public health, e-learning platforms for medical training, sanitation and hygiene education tools, and climate-related health preparedness.

- **SDG 3 (Good Health and Well-being)**
  - a) AI-powered training and decision support systems for healthcare professionals.
  - b) Digital health literacy programs for disease prevention and patient empowerment
  - c) VR/AR simulations for medical training and public health education

- **SDG 4 (Quality Education)**
  - a) E-learning platforms and mobile applications for healthcare workforce development
  - b) Gamification and AI-driven assessments for medical training
  - c) Technology-driven capacity building for healthcare professionals in underserved areas
- **SDG 6 (Clean Water and Sanitation)**
  - a) Interactive digital tools for hygiene and sanitation education
  - b) AI-supported training programs on water safety and sanitation management
  - c) Community-driven digital campaigns on clean water practices
- **SDG 13 (Climate Action)**
  - a) Educational platforms on climate-related health risks and mitigation
  - b) Technology-supported disaster preparedness training for healthcare workers
  - c) AI-driven data visualization tools for public health awareness on climate change.

## WCC-ATC RISE 2025: ICREATE-IMPACT

<b>SCHEDULE OF PRESENTATION MORNING SESSION (9:AM to 12:00NN)</b>	
<b>MAB 1</b>	<b>Parallel Session 1: AVIATION &amp; AERONAUTICS I</b>
<b>Title</b>	<b>Presenter</b>
External Influence on Student Pilots' Flight Training Progress	Diana Joyce Salazar, et al.
Akap: A "Longing For Home" Experience Of Culturally Diverse Students At WCC-ATC Binalonan	Audrey Grail Abatteng, et al.
Exploring the Strategies of Students Learning Engagement of BS In Commercial Flying	Ashley Myneth Gano, et al.
Effectiveness of Peer Mentorship Program to Student Pilots	Josh Lyron Acebedo, et al.
Preparation For First Solo Flight: Flight Performance of Student Pilots	Jose Mari Antonio Cervantes, et al.
<b>MAB 2</b>	<b>Parallel Session 2: AVIATION &amp; AERONAUTICS II</b>
Emotional Flight Success of Students' Flight Training	Stephanie Ubas, et al.
Plight in Flight: Exploring the Experiences of Student Pilots	Marc Edluis Bautista, et al.
OJT Engagement of WCC ATC AOM: A Basis for Skills Development Program	Angela Faith Nale, et al.
Experiences of 3rd Year WCC-ATC Students: A Narrative Analysis	Elya Pilar Mendita, et al.
<b>MAB 3</b>	<b>Parallel Session 3: AVIATION &amp; AERONAUTICS III</b>
Emergency Awareness and Preparedness in WCCATC	Owen Manuel Bala, et.al
Energy Consumption And Conservation Practices In WCC ATC : A Basis For Sustainable Power Consumption Program And Policy	Don Joel Balindan, et.al
Strategies Utilized By Domestic Airlines In Air Carbon Emission Reduction And Fuel Efficiency	Anna Marie Gonzales, et.al
Factors Affecting Ground Operations Services: A Basis for Potential Strategies in Enhancing Customer Satisfaction in the Aviation Industry	Mirzelyn Mari Loayon, et.al.
<b>MAB 4</b>	<b>Parallel Session 4: BUSINESS, FINANCE &amp; MANAGEMENT I</b>
Marketing Communication of Tuguegarao Airport	Lawrenz Jacinto, et al.
Determinants of Aviation Schools Success and Marketability	Jian Chantal Caricungan, et al.
Nextgen Careers: Empowering World Citizen Graduates with Data-Driven Counselling and Job Matching	Donny Alcasabas, et al
Green Business Practices in Retail: Assessing Respondents to 'Bring Your Own Bag Initiative'	Hershey Joyce Capati, et.al

The Creation of Biodegradable Plastic using the Fish Scales of Oreochromis Niloticus	Angelique Adagao, et.al
Fabric Conditioner Made of Musa Acuminata as Fire Retardant	Trish Jaden Boadilla, et al.
Development of BLU For Student Supplies Distribution and POS	Andrei Gideon Reyes, et al.
<b>MAB 5</b>	<b>Parallel Session 5: BUSINESS, FINANCE &amp; MANAGEMENT II</b>
Cash Flow Management Practices of Vegetable Vendors in Baguio City	Marielle Kryzyl Datuin, et.al
Higher Education Institutions' Culture of Quality- Oriented Organization Through Total Quality Management (TQM)	Agripino Co Calacsan Jr, et.al
Barriers Confronted by Senior BSBA-Human Resource Management Students in Career Readiness	Sharina Caoile, et.al
Social Entrepreneurship Program Management in the Private Higher Educational Enterprises Institutions in Pangasinan	Alvin Carillo, et.al
Customer Satisfaction on Financial Institution Online Mobile Banking Application	Joanna Katrina Rosario, et.al
Assessment of Sustainability Accounting Practices among Small and Medium-Sized Enterprises in Dagupan City's Food and Beverage Industry	Kim Joseph Visperas, et. al
<b>MAB 6</b>	<b>Parallel Session 6: ENGINEERING AND TECHNOLOGY I</b>
The Development of SKYAUGMENT: An Interactive Learning Material for Aircraft Familiarization	Shaun Tanedo, et al.
KNOW FLIGHT APP 1.0: Development of Flight Preparedness Tool For Student Pilots	Michael Jay Paraguas, et al.
SKY INSIGHT: A Digital Flight Information System	Ronald Chester Lorenzana, et al.
AIRTRAX: Development of Flight Progress Monitoring Application	Aianie Guerrero, et al.
NAVX: Automated Cross-Country Navigator App	Argie Badua III, et al.
<b>MAB 7</b>	<b>Parallel Session 7: ENGINEERING AND TECHNOLOGY II</b>
Cabin VR: Virtual Reality of Interior Navigation of Aircraft Boeing 737	Junbill Bacasen, et al.
Development Of RPDO E-Journal Website	Daniel Viliran, et al.
Alternative Filtration Device: Determining Water Quality of WCC ATC	Paolo Kingsley Marquez, et al.
DACsim Miniature Taxiway with Rudder Pedal	Ken Gabriel Aleganza, et al.
Automated Waste Monitoring System In WCC ATC Binalonan: A Sustainable Solution	Hans Frederick Hilado, et al.
<b>MAB 8</b>	<b>Parallel Session 8: ENGINEERING AND TECHNOLOGY III</b>
Assessment and Upgrading of Electrical System of Philippine College of Science and Technology, Nalsian, Calasiao, Pangasinan	Oscar F. Gironella Jr.,
Design and Optimization of a Portable Cooling System Using a Peltier Module and Two Stage Heat Exchanger	Mark Oliver Tabayoyong, et.al
Development and Evaluation of the Palosebo Quiz and Adventure Game: A Digital Approach to Cultural Preservation	Jovan Joel Magalong, et.al
Development and Evaluation of Ultrasonic Glasses as Assistive Technology for Individuals with Visual Impairment	Febrey Lamsen , et.al

Analyzing Environmental Awareness on Microplastic Pollution and Battery Disposal: Developing an Infographic-Based Educational Tool for Waste Management Literacy	Veber Abiett Castanaga, et.al
<b>MAB 9</b>	<b>Parallel Session 9: ENGINEERING AND TECHNOLOGY IV</b>
Thermochemical Implications and Combustion Effectiveness of Hydrogen-Hydrogen-Oxygen (HHO) Gas Mixtures in Internal Combustion Engines	Russel Niels Miemban, et.al
“Evaluating the Validity and Predictive Power of College Admission Tests for Electronics Engineering and Architecture Programs”	Rhandel Zamora, et.al
Enhancing Document Security Through an Electronic Management System for a Private Higher Educational Institution	Bryan Mislang, et.al
Smart IoT Surveillance: Enhancing Security with Real-Time Component Removal and Intrusion Detection in Computer Laboratories	Avegail Aseneta, et.al
<b>MAB 10</b>	<b>Parallel Session 10: SOCIAL SCIENCE, ARTS AND HUMANITIES</b>
Leadership And Peacebuilding: Insights From The 2024 Exceptional Women Of Peace Awardees	Genevieve Balance Kupang, et.al
Storytelling, Truth, And Peacebuilding: A Literary Critique of Maria Ressa and Colum Mccann’s Vatican Speeches	Genevieve Balance Kupang, et.al
Exploring The Experiences and Parenting Styles of Solo Parents In Rosales, Pangasinan: Challenges and Relationships	Maria Leonora Bustria-Muhammad, et.al
Social And Ecological Approach to the Resilience of Children in Pantal, Dagupan Experience Floods	John David Docil, et.al
Self-Efficacy and Its Influence on the Perceived Academic Success of the Third Year College Students in the University of Luzon	Christian D. Andaya
<b>MAB 11</b>	<b>Parallel Session 11: EDUCATION TECHNOLOGY I</b>
English Proficiency Assessment Tool for WCC ATC	Tamara Jane Ventanilla, et.al
Performance Evaluation of Student Services in Key Departments at WCC Aeronautical and Technological College Binalonan Campus	Liahona A. Gutierrez
Beyond Punishment: Cultural, Social and Institutional Factors Influencing Students’ Adherence to School Policies	Michael Anthony Junio, et.al
Efficiency Of Orangeapps System in the Performance of Selected Personnel And Students Of World Citi Colleges	Lailani Grace F. Licudo
Development of Survival and Rescue Training Material	Meriam Diffy Lumactod, et.al
Development of Digital Mock Examination System for Aeronautical Engineering Program in WCC-ATC Binalonan	Arc Angelo S. Tubasis
CHARCOOL Project: Assessing Market Viability and Community Support on Sustainable Agricultural Waste Management and Utilization	Dannah Valerie J. Dulnuan, et.al
Edutourism-Focused Marketing Strategies and Corporate Social Responsibility Initiatives Among Standard Hotels and Lodgings in Pangasinan	Sushmita Sen Chan Montano, et.al

SCHEDULE OF PRESENTATION AFTERNOON SESSION (1:00 PM to 3:00PM)	
<b>MAB 1</b>	<b>Parallel Session 1: CRIMINAL JUSTICE EDUCATION TECHNOLOGY AND PUBLIC ADMINISTRATION I</b>
<b>Title</b>	<b>Presenter</b>
An Analysis of Social Media Engagement on Political Awareness Among Students in Dagupan City	Jheso Dacanay, et.al
From Challenges to Opportunities: The BHAVA Project An Integrated Strategy to Support Children in Conflict with the Law	Abigail Interno, et.al
Mangaldan LGU Personnel Information Management	Joy Chrisky Lobendino, et.al
Sustainability Assessment: Evaluating the Implementation of Municipal Ordinance 2015-02 for Eco-Friendly Practices in Binalonan, Pangasinan	Michael Madera, et.al
Level of Awareness Regarding “Student Fare Discount Act”	Salvador Samsom, et.al
<b>MAB 2</b>	<b>Parallel Session 2: CRIMINAL JUSTICE EDUCATION TECHNOLOGY AND PUBLIC ADMINISTRATION II</b>
Digital Registration of the Agriculture Sector for Validation Management in the LGUS of Pangasinan	Eleanor Blanco, et.al
Local Disaster Risk Reduction and Management of Law Enforcers in Dagupan City	Demosthenes Magnaan, et.al
Implementation of the Philippine Reference System 1992 in Baguio City	Antero Mappang, Jr., et.al.
Dispute Resolution Strategies of the Lupon Tagapamayapa in Palma Urbano, Baguio City: A Qualitative-Descriptive Analysis	Sonny Boy Ancheta, et.al
Leading Factors in the Performance of WCC-ATC North Manila Criminology Licensure Examination	Hero Aganan, et.al
<b>MAB 3</b>	<b>Parallel Session 3: TOURISM &amp; HOSPITALITY MANAGEMENT</b>
The Building Blocks of a Walkable Cordillera Mountains: Analyzing the Effectiveness of Accessibility for Tourist Satisfaction in Sagada	Cleo Arga, et.al
Hospitality Management-Related Skills Development in Working for a Multinational Fast-Food Chain Among University Students	Racquel Mejia, et.al
Satisfying Palates: The Sustainable Customer Satisfaction Effects of Ghost Kitchen to the Food Service Industry	Alliah Shane Condino, et.al
Heritage Preservation and Cultural Mapping “E-Palabas” System	Marc France Cabiles, et.al
Tanaw: Augmented Reality Exploration For The National Museum Of Anthropology With Ai-Powered Interactive Guides	Elfa, N.F.J., et.al
<b>MAB 4</b>	<b>Parallel Session 4: EDUCATION TECHNOLOGY II</b>
Aiming for Excellence: The ACHIEVERS Model as a Paradigm for Elevating Student Engagement and Learning in Higher Education	Egel Gumasing, et al
The Effectiveness of Dual Coding on Enhancing Memory and Attention Span Among Grade 7 Learners at Pacac High School	Bresamel Orsame, et.al
Parental Involvement on Academic Performance of Grade 6 Pupils at Guimba West Central School	Mary Rose Talens, et.al

Course Audit Program of World Citi Colleges, Guimba Campus in preparation for Criminologist Licensure Examination: A Comprehensive Assessment	Eloisa Gutierrez, et.al
Adaptive Barriers to Biofuels and Electric Vehicle Charging Stations in Guimba, Nueva Ecija	Sarah Mae Galising, et.al
Comparative Analysis Between Inquiry-Based Learning and Self-Autonomy Learning Approach on Mathematical Performance among Grade – 10 Students in Bartolome Sangalang National High School	Briant Nepomuceno, et.al
<b>MAB 5</b>	<b>Parallel Session 5: EDUCATION TECHNOLOGY III</b>
Charting the Mobile Learning Landscape: Assessing Students and Faculty Perspectives in Higher Education in Northern Philippines	Ficer Dofredo, et.al
Exploring Technology-Enhanced Educational Management (TEEM) for Holistic Student Development	Oliver Begenio, et.al
Improving the Public Speaking Skills of AB Communication Students Through the Use of Stanislavski’s Methods of Acting	Marie Eden Tamonan, et.al
Digital Intelligence Quotient (DQ) of Secondary Mathematics Teachers in Urdaneta City: Basis for Technology-Enhanced Management	Orlando Pasion, et. al
Enhancing Learning of Scientific Concepts Through Project “Lenses”	Geraldine Orbet, et.al
<b>MAB 6</b>	<b>Parallel Session 6: EDUCATION TECHNOLOGY IV</b>
Challenges Encountered by the NSTP Students in their Community Immersion	Manion Alcantara, et.al
Teaching Styles and Teaching Strategies: The Road to Effective Classroom Instruction	Gina Casi, et.al
Competence of Sports Coaches in Higher Educational Institutions (HEIs): Basis for the Offering of Diploma in Sports Coaching	Hilarion Olimpo , et.al
Reading Management Strategies of Key Stage Teachers	Nick Agpasa, et.al
Scaling The Communication and Critical-Thinking Skills of 2nd Year College Students Majoring in English of the School of Teacher Education at Universidad De Dagupan Using Debate as a Technique	Jedidiah Daniel Azurin, et.al
<b>MAB 7</b>	<b>Parallel Session 7: EDUCATION TECHNOLOGY IV</b>
BLEPT Predictors: A Correlational Study of the Performance of Teacher Education Graduates in Capstone Education Course and Licensure Examination	Rizel Padua, et al
Modular Approach-Based Language Teaching at the Time of Pandemic: A Hermeneutic Phenomenology	Carl John Carolino, et.al
Attributes, Thriving and Work Performance of Guidance Practitioners In Higher Educational Institutions In Dagupan City	Ma. Rizza Bartolo, et.al
Unlocking Potential: Transforming Lesson Planning with Universal Design for Learning (UDL) Strategies	Kathleen Marnes Bautista, et.al

<b>MAB 8</b>	<b>Parallel Session 8: HEALTH TECHNOLOGY I</b>	
A Case Study of the Dentists' Roles in the Multidisciplinary Management Cleft Care	Wenny O. Villegas, et.al	
Lived Experiences of Individuals with Type 2 Diabetes in Santa Maria, San Jacinto, Pangasinan, on the Use of Serpentina Leaves as Alternative Medicine	A.M Rosario, et.al	
Knowledge and Attitude of Dentists on the Use of social media in Teledentistry	Ma. Theresa Ann Fernandez, et.al	
The Role of Traditional Healing Practices In Healthcare: A Study In Barangay San Miguel, Calasiao, Pangasinan	Nichole Casilang, et.al	
Challenges And Resilience: How Parents Navigate A Child's Cancer Diagnosis	Kristel Dayami Alcantara, et.al	
Navigating Adversities: The Relationship between Resilience and Well-Being among Underprivileged Families in Barangay. Lucao Dagupan City	Julienne Mae Garcia, et.al	
<b>MAB 9</b>	<b>Parallel Session 9: HEALTH TECHNOLOGY II</b>	
Community Health Nursing Program Management in the Higher Education Institutions	Aissa Pater, et.al	
Effectiveness of Return Demonstration and Clinical Rotation in Developing Maternal and Child Nursing Competencies Among Student Nurses	Jane Marffy Llamas, et.al	
Effectiveness of the Community Teaching Programs on Educating Mothers on Under-Five Immunization	Virsitilyn Manuel, et.al	
Voices of Resilience: Understanding Coping Strategies of Student Nurses in Stressful Clinical Environment	Ederlyn Shane Dupitas, et.al	
Healthy Work-Life Balance Among Teachers	Lourdes Trajano, et.al	
Somnolence And Its Effect on Nursing Students' Academic Performance at Baguio Central University	Wilma Jane Paat , et.al	
<b>MAB 10</b>	<b>Parallel Session 10: HEALTH TECHNOLOGY III</b>	
AIMS (Anatomy Interactive Mobile Simulation): Enhancing Medical Education Through Mobile 3d Visualization And Simulation	E.J Castillo, et.al	
Optimizing Patient Care at World Citi Medical Center: The Role of a Comprehensive Mobile Health App with Blockchain Technology	Sean Dylan Arroyo, et.al	
"Kwento ni Rosario" Retold in Teaching Social Determinants of Health: Video based Learning as a Pedagogical Tool in Community Health Nursing I	Kevin de Vera, et.al	
Optimizing Maternal and Child Health Through AI: A Case Study on MOMCHAT Pilot Implementation	Kevin de Vera, et.al	
Identification of Bacterial Community and Detection of Microplastics in Surface Water and Biofilm Matrices from Meycauayan River, Bulacan	Aliah Jen Lomibao, et.al	

**AVIATION**  
**&**  
**AERONAUTICS**

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## AVIATION & AERONAUTICS

### TABLE OF CONTENTS

Title	Page No.
External Influence on Student Pilots' Flight Training Progress: Basis for Opportunities and Development <i>Diana Joyce L. Salazar, et.al</i>	3
Akap: A "Longing for Home" Experience of Culturally Diverse Students at WCC-ATC Binalonan <i>Audrey Grail Abatteng, et.al</i>	4
Exploring The Strategies Of Students Learning Engagement Of BS In Commercial Flying: A Phenomenological Study <i>Nathanael Jemmuel C. De Leon, et.al</i>	5
Effectiveness Of Peer Mentorship Program to Student Pilots <i>Josh Lyron B. Acebedo, et.al</i>	6
Preparation For First Solo Flight: Flight Performance of Student Pilots in Terms of Their Preferred Training Method <i>Jose Mari Antonio N. Cervantes, et.al</i>	7
OJT Engagement of WCC ATC AOM: A Basis For Skills Development Program <i>Angela Faith D. Nale, et.al</i>	8
Experiences Of 3 <sup>rd</sup> Year WCC-ATC Students: A Narrative Analysis <i>Elya Pilar M. Mendita, et.al</i>	9
Emotional Flight Success of Students' Flight Training <i>Sthepanei Caspe Ubas, et.al</i>	10
Plight In Flight: Exploring The Experiences Of Student Pilots <i>Marc Edluis Bautista, et.al</i>	11
Emergency Awareness and Preparedness in WCCATC <i>Owen Manuel Bala, et.al</i>	12
Energy Consumption And Conservation Practices In WCC ATC : A Basis For Sustainable Power Consumption Program And Policy <i>Don Joel Balindan, et.al</i>	13
Strategies Utilized By Domestic Airlines In Air Carbon Emission Reduction And Fuel Efficiency <i>Anna Marie Gonzales, et.al</i>	14
Factors Affecting Ground Operations Services: A Basis for Potential Strategies in Enhancing Customer Satisfaction in the Aviation Industry <i>Mirzelyn Mari Loayon, et.al</i>	15



## EXTERNAL INFLUENCE ON STUDENT PILOTS' FLIGHT TRAINING PROGRESS: BASIS FOR OPPORTUNITIES AND DEVELOPMENT

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### **Abstract:**

This research explores the extent to which external factors affect the progress of student pilots undergoing flight training at WCC Aeronautical and Technological College – Binalonan Campus. Recognizing the persistent challenges in achieving timely training completion among aviation students, the study focused on five key external factors: academic demands, economic factors, health-related safety factors, technical proficiency mastery, and psychosocial factors. These factors were identified as critical barriers that may hinder the continuous and efficient progress of students in their flight training journey. To ensure comprehensive and balanced data collection, the study employed a quantitative-descriptive research design with stratified random sampling, allowing equal representation across different year levels. Data were gathered through structured questionnaires designed to capture students' experiences and perceptions. The collected data were then analyzed using Pearson Correlation, Spearman's Rho, and multiple regression analysis to determine the strength and significance of relationships among the variables. The results indicated that academic workload had the strongest direct correlation with delayed flight training progress, emphasizing the difficulty of balancing academic and flight responsibilities. Financial constraints were identified as the most influential predictor overall when all external factors were considered collectively. Meanwhile, technical proficiency and health-related concerns had moderate effects, and psychosocial pressures exhibited a relatively lower impact. Based on these findings, the study offers several strategic recommendations. These include providing financial aid and scholarship opportunities, restructuring academic schedules to better align with flight training, enhancing access to simulators and aircraft, and implementing robust mental health support services. Ultimately, this research supports the objectives of Sustainable Development Goal 4 (Quality Education) by offering actionable insights to enhance flight training systems and promote student success in the aviation industry.

**Keyword:** *Academic Demands; Economic Factors; External Factors; Flight Training Progress; Financial Constraints; Health Related Safety Factors; Psychosocial Factors; Student Pilot Training; Technical Proficiency Mastery*



## AKAP: A “LONGING FOR HOME” EXPERIENCE OF CULTURALLY DIVERSE STUDENTS AT WCC-ATC BINALONAN

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**Abstract:** The present study thoroughly analyzes the experiences of culturally diverse second year students of the College of Aviation at WCC-ATC Binalonan who are ‘longing for home’ brought by studying far from their homes. It highlights the problems encountered by these students, particularly with regards to their Psychological Disengagement, Academic Alienation, Social Connectivity, Linguistic Vulnerability, Virtual Wellness, as well as how they cope up with these problems. The researchers conducted a Guidance and Counseling Department-endorsed anxiety level test to students who feel homesick through utilizing the ASA 27 Questionnaire. Participants who had elevated ASA 27 Questionnaire scores were then interviewed regarding their longing for home experiences at WCC ATC Binalonan using the Guide Questions validated by the Guidance and Counseling Department of the institution. Moreover, the ADGP questionnaire, a researcher-made questionnaire, was used to further evaluate their perspectives in line with their longing for home experiences. The researchers used a sequential exploratory mixed method research design to assess the significant relationship between the students' coping mechanisms and their problems encountered to determine areas of concern that will be addressed through AKAP: Alyansang Kasamang Aalalay sa Pangungulila, a culturally diverse organization and intervention program, and an output of this study.

**Keyword:** *Cultural Diversity; Longing for Home; Studying far From Home; New Academic Culture; Culturally Diverse Organization*



## EXPLORING THE STRATEGIES OF STUDENTS LEARNING ENGAGEMENT OF BS IN COMMERCIAL FLYING: A PHENOMENOLOGICAL STUDY

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### Abstract:

This study aims to explore the different strategies of students' learning engagement of student pilots. This study aims to confront student's academic potentials that are being left out or ignored in some cases, students that are unable to shine and to show their own area of expertise. The purpose of this study is to determine the different strategies of students' learning engagement in the area of inclusivity programs. This study with the purpose of identifying the logical connection of those said factors to the students, whether it may be in behavior pattern, habits, personality, and emotional-status that may affect student's academic progress and inclusivity in the campus. This study is beneficial and relevant not only to be able to find strategies in engaging pilot students. The data will be gathered from the department of Commercial Flying 4<sup>th</sup> year students. The information and data will be gathered with the use of a structured survey questionnaire. The survey will be composed of an open-ended questionnaire for the participants of this study as of 2024-2025. The results of the study will be gathered and analyzed after conducting a survey and the researchers will conduct an activity to cater the selected students and know more about their insights. The resulting outcome will determine the factors, its effects and consequences that may have an influence to student's inclusivity in their academic performances in the school campus. The information gathered from the participants will be kept private and discreet. As the correlations of the results/outcomes we will be able to identify strategies for students' learning engagement and we will be able to know if there is a significant effect to a student's learning engagement, how will we give solutions to those factors.

**Keywords:** *Inclusivity; Learning Engagement; Academic Performance; Strategies; Student Pilots*



## EFFECTIVENESS OF PEER MENTORSHIP PROGRAM TO STUDENT PILOTS

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### Abstract:

The aviation industry is experiencing an increasing demand for highly skilled pilots who not only possess technical expertise but also strong interpersonal and decision-making abilities. This study investigates the effectiveness of a structured peer mentorship program implemented at WCC Aeronautical and Technological College to enhance flight performance and professional skills among student pilots. The research specifically addresses the gap in localized empirical data on mentorship outcomes in Philippine aviation education. The study utilized a comparative research design involving 19 purposively selected student pilots with no prior flight hours, who participated in a one-week structured peer mentorship intervention. A pre-and post-assessment tool evaluated their performance across key domains, including flight maneuvers, navigation, emergency procedures, communication, and solo readiness. The assessments were analyzed using descriptive statistics and paired t-tests to determine the significance of performance improvements. Results revealed a statistically significant improvement in flight performance post-intervention ( $t = 4.8391$ ,  $p < 0.0001$ ), with notable increases in areas such as basic flight maneuvers (PP2: 57%) and foundational controls (PP1: 44%). However, skills related to technical problem-solving, emergency procedures, and solo flight showed moderate gains or minor regression, indicating areas for further program refinement. This study concludes that structured peer mentorship positively impacts the development of student pilots' technical and interpersonal competencies, contributing to their flight readiness and confidence. The findings support the integration of targeted mentorship programs into aviation curricula and offer actionable insights for institutional policy development aimed at enhancing student outcomes and safety in aviation training.

**Keywords:** *Peer Mentorship; Aviation Education; Flight training; Student Performance; Pilot Readiness*



## PREPARATION FOR FIRST SOLO FLIGHT: FLIGHT PERFORMANCE OF STUDENT PILOTS IN TERMS OF THEIR PREFERRED TRAINING METHOD

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### Abstract:

Learning techniques can affect how people understand information. Common learning techniques is the continuous method where the training has little to no rest in between training sessions and interval training which allows the student to reflect in between training sessions. The researcher used the convergent parallel design in order to interpret the data that was gathered by the researcher. The respondents were mainly composed of WCC-ATC Binalonan students from the course B.S. Aviation major in commercial flying and B.S. Aviation Aeronautical Operations Management. The respondents preferred interval method for their training and perceived that they performed above average when interval method was used in their flight training.

**Keyword:** *Continuous method, Interval Method, Interval between training*



## OJT ENGAGEMENT OF WCC ATC AOM: A BASIS FOR SKILLS DEVELOPMENT PROGRAM

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### Abstract:

This study investigates the role of On-the-Job Training (OJT) in equipping Airline Operations Management (AOM) graduates from WCC Aeronautical and Technological College with the practical skills essential for succeeding in the aviation industry. Specifically, the research explores the effectiveness of OJT in developing core operational competencies and evaluates the training program using the SERVQUAL framework, which includes five key dimensions: tangibles, reliability, responsiveness, assurance, and empathy. By focusing on these dimensions, the study provides a comprehensive assessment of how OJT experiences align with the expectations and demands of the aviation sector. A total of 55 graduates from the 2021 to 2023 batches participated in the study by completing a guided survey. The results indicated that the OJT program had a significant positive impact on the development of essential skills such as communication, leadership, and problem-solving. These competencies are vital for effective airline operations and have been successfully imparted through practical, real-world exposure provided during the training period. Furthermore, participants reported increased confidence in handling daily operational challenges and improved collaboration skills within team-based environments. However, the study also identified several areas where the current OJT system falls short. Notable gaps were observed in time management and the breadth of exposure to various operational functions. These limitations suggest that while the existing OJT provides a strong foundation, it does not yet fully prepare trainees for the multifaceted and fast-paced nature of airline operations. In light of these findings, the research recommends the enhancement and restructuring of the OJT curriculum to better align with contemporary industry requirements. Suggested improvements include diversified training assignments, mentorship by experienced professionals, and structured feedback mechanisms to continuously monitor progress and address individual trainee needs. By addressing these shortcomings, future AOM trainees will be better equipped to meet the evolving expectations of the aviation industry, respond more effectively to operational demands, and contribute meaningfully to the success of airline organizations. This study underscores the critical importance of OJT as a bridge between academic learning and practical application in the dynamic field of airline operations management.

**Keywords:** *On-The-Job Training (OJT); Airline Operations Management (AOM); Skills Development; Servqual Framework*



## EXPERIENCES OF 3<sup>RD</sup> YEAR WCC-ATC STUDENTS: A NARRATIVE ANALYSIS

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### Abstract

Survival situations in the aviation industry often arise unexpectedly, necessitating well-structured training to enhance preparedness and safety. Survival and Rescue Training (SRT) programs have become integral to aviation education, aiming to equip student pilots with essential survival competencies. However, findings indicate that the retention of knowledge and skills post-training is notably low. This study aimed to assess existing SRT programs, identify gaps, and propose improvements to support incoming second-year aviation students more effectively.

Using a qualitative research design through narrative analysis, one-on-one interviews were conducted with 30 third-year student pilots who previously completed SRT modules. Results revealed that participants commonly forgot most of the lessons shortly after training completion and expressed feelings of fatigue. Many respondents felt the training lacked value relative to its cost and duration, with suggestions that some modules, such as Basic Life Support, could be merged with others like Firefighting to optimize time and content delivery. Furthermore, several students questioned the necessity of the Firefighting module, having previously undergone similar drills during secondary education. Concerns were also raised regarding the Jungle Environment Survival Training (JEST Camp), particularly the limited time allocated, with the physically demanding hike cited as the most strenuous and time-consuming component.

Based on these findings, the study recommends the development and institutional implementation of a comprehensive training manual for both students and faculty. This manual would serve as a refresher resource to reinforce learning outcomes and ensure training effectiveness over time.

**Keywords:** Aviation Training; Survival and Rescue Program; Student Pilot Perception; Program Evaluation; Training Effectiveness



## **EMOTIONAL FLIGHT SUCCESS OF STUDENTS' FLIGHT TRAINING**

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### **Abstract:**

The study aims to enhance student pilots' understanding of their behavioral and emotional experiences during flight training and explore strategies for overcoming challenges to achieve emotional flight success. Utilizing a quantitative research method, this study examines the interplay between behavior, cognition, and success experiences influencing student pilots' emotional states. A survey of 25 pre-solo student pilots indicated that emotional coping strategies, achievable goal-setting, and instructor support positively impact emotional flight success. Recommendations are provided to foster emotionally prepared student pilots. This research contributes to a deeper understanding of the relationship between emotional readiness and flight success in student pilots. The survey results revealed that students employing emotional coping strategies such as mindfulness and reframing stress reported higher levels of focus and readiness, which are critical for handling the demands of flight training. Incremental goal-setting emerged as a key factor in building confidence and reducing anxiety, providing students with clear, attainable milestones that minimized feelings of overwhelm. Additionally, the role of instructors was emphasized, with constructive feedback and a supportive learning environment positively correlating with emotional resilience among trainees. Students with more flight hours demonstrated increased emotional stability, suggesting that repeated exposure to flight scenarios fosters familiarity and confidence. However, some participants reported difficulties, including freezing during high-stress situations or struggling to recover from criticism, indicating the need for individualized emotional support. These findings underline the importance of incorporating structured emotional preparation and tailored interventions into flight training programs. The study recommends emphasizing emotional readiness through targeted strategies to enhance safety, performance, and the overall success of student pilots.

**Keyword:** Behavior; Emotions; Emotional Flight Success; Cognition; Success Experience.



## PLIGHT IN FLIGHT: EXPLORING THE EXPERIENCES OF STUDENT PILOTS

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### Abstract:

The Civil Aviation Authority of the Philippines regulates safety standards for Filipino pilots, with flight schools like Leading-Edge International Aviation Academy offering comprehensive training programs. The Department of Aviation at WCC Aeronautical and Technological College Binalonan focuses on enhancing flight skills. This study aims to explore the personal experiences and perceptions of WCC students who are under flight training. Specifically, it shall seek to answer the following questions: 1. What are the plight experiences of student pilots as they in their pre-solo flight training journey? 2. What are the coping strategies of the student pilots during their pre-solo training? Using a phenomenological qualitative type of research, the researchers interpret the result of their interviews. The "Plight Experiences of Student Pilots" theme highlights the challenges students face during flying training, emphasizing the importance of knowledge, adaptability, and a strong support network. It also discusses the psychological effects of performance pressure, resilience, and support systems. The theme also highlights the negative effects flight training has on mental health, the need for self-care, financial difficulties, effective time management, and the importance of supportive connections and social bonds for enhanced experiences. The second theme, "Coping Mechanisms of Student Pilots," discusses strategies for managing stress and anxiety among trainees. Key elements include spiritual pursuits, self-care, sleep, self-control, supportive friendships, and regular networks of instructors, classmates, and families, using resources like software and online courses, acknowledging accomplishments, hobbies, exercise, self-assurance through self-talk and prayer, and taking ownership of mistakes. Proactive coping techniques are essential for promoting mental and emotional health while obtaining education, and recognizing accomplishments as teaching opportunities.

**Keywords:** Aviation; Exploration; Flight Training; Student Pilots; Plight Experiences;



## EMERGENCY AWARENESS AND PREPAREDNESS IN WCCATC

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### Abstract:

This study looks into how aware and prepared students and staff are at WCC Aeronautical and Technological College Inc., especially as disasters seem to be happening more often and hitting harder. The main goal was to see how ready everyone is, find out what's working well, and come up with some practical steps to make safety better. Specifically, we wanted to find out how much people know about safety rules, handling risks, what the school's emergency plans are, and how to respond quickly during emergencies. We used a simple, descriptive survey method and took a random sample of 126 people—118 students and 8 teachers. The data came from a structured questionnaire, which was tested to make sure it was reliable (with Cronbach's Alpha scores between 0.73 and 0.95). We analyzed the responses by calculating weighted averages and looking at the basic statistics. The results showed that most people have a decent understanding of safety in general. For example, students were very familiar with evacuation routes (average score of 3.74), but they didn't know much about emergency contact procedures (average score of 2.31). Teachers generally scored higher overall, especially when it came to recognizing hazards and managing risks. However, there was a clear gap in both groups' ability to actually put risk reduction measures into practice (overall average of 2.43). This suggests that while many people understand the basics, they're not yet confident in actually responding effectively in emergencies. Overall, WCC ATC has a good foundation of emergency awareness, but there's still a lot of room for improvement. The study recommends more regular training, practice drills, and creating a comprehensive emergency kit to boost readiness. It also suggests spreading more information about safety to address specific weaknesses. The overall goal is to help build a stronger, more prepared school community so everyone can respond quickly and effectively when disaster strikes.

**Keyword:** *Emergency Preparedness, Awareness Assessment, Disaster Management, Quantitative Design, Resilient School Strategies.*



## ENERGY CONSUMPTION AND CONSERVATION PRACTICES IN WCC ATC : A BASIS FOR SUSTAINABLE POWER CONSUMPTION PROGRAM AND POLICY

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### Abstract:

This study aims to assess the energy consumption and conservation practices at WCC Aeronautical and Technological College Inc., focusing on the institution's current environmental strategies in the areas of operational practices, technological advancements, and education and awareness. The goal is to evaluate how acceptable these practices are in terms of sustainability, functionality, and suitability while identifying the key challenges and limitations in their implementation. The research is grounded in the assumption that WCC ATC's existing strategies contribute positively to energy conservation and are generally supported by stakeholders. However, constraints such as limited funding, inadequate technical resources, and resistance to change hinder the full execution of these efforts. To address these gaps, the study aims to propose policy improvements and training innovations that can enhance the effectiveness of a sustainable energy conservation program. Employing a descriptive quantitative research design, the study used survey questionnaires distributed online to students, faculty, deans, and staff, allowing for the collection of measurable data reflecting campus-wide practices and perceptions. Results reveal that energy consumption practices are commonly applied, with a composite mean of 2.69, yet inefficiencies remain due to outdated equipment, lack of renewable energy integration, and insufficient conservation guidelines. Energy conservation practices received a slightly higher mean of 2.94, indicating strong support for energy-saving technologies such as solar panels, automated systems, and upgraded equipment. However, barriers including maintenance delays, weak policy enforcement, and limited awareness campaigns continue to affect the success of these efforts. Despite these challenges, the institution shows strong potential to advance its sustainability goals. The study concludes that with data-driven planning, stronger policy frameworks, and targeted training, WCC ATC can strengthen its energy efficiency initiatives and build a culture of sustainability, ultimately leading to the successful implementation of a comprehensive power conservation program tailored to the institution's needs.

**Keywords:** *energy consumption, conservation practices, sustainable, power consumption*



## Strategies Utilized By Domestic Airlines In Air Carbon Emission Reduction And Fuel Efficiency

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### Abstract:

Carbon emission of aircraft engines is seen as unique due to its capability to impact climate change at higher altitudes and on the ground. This sets the stage for a program aimed at raising environmental awareness in the aviation industry, emphasizing the significance of lowering emissions and conserving our planet for future generations. The researchers conducted an interview with an individual that has expertise in the airline industry as well as disseminated survey questionnaires to 18 employees under the environmental department of an airline; a total of 19 respondents willingly participated in this study, a quantitative and qualitative research approach. Findings reveal that domestic airline companies predominantly favor traditional jet fuels over alternatives with lower carbon footprints. They are adopting newer aircraft models that consume less fuel and emit fewer carbon emissions. However, they do not implement emission reduction schemes or collaborate with fuel companies to access sustainable aviation fuels. This study highlights the prevailing reliance on conventional practices and the missed opportunities for more proactive environmental stewardship within the domestic airline sector. The results underscore the necessity for robust policy frameworks, technological advancements, and collaborative partnerships to accelerate the transition towards a more environmentally responsible aviation industry.

**Keyword:** Domestic Airline, Emissions, Sustainable Aviation Fuel, SDG 13, Climate Action, Sustainable Development Goals



## FACTORS AFFECTING GROUND OPERATIONS SERVICES: A BASIS FOR POTENTIAL STRATEGIES IN ENHANCING CUSTOMER SATISFACTION IN THE AVIATION INDUSTRY

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### **Abstract:**

This study aimed to identify potential strategies for enhancing customer satisfaction in the aviation industry, specifically focusing on AirAsia. A total of 110 respondents were involved, comprising 80 passengers and 30 employees. The study employed a quantitative descriptive design, collecting data through online and physical surveys via Google Forms. The survey was validated by seven professionals from the aviation and research fields and targeted employees in roles such as baggage handlers, maintenance staff, ticketing agents, check-in clerks, and administrators. Data analysis involved frequency counts, percentages, and weighted means to assess customer satisfaction across SERVQUAL's five dimensions: Empathy, Responsiveness, Tangibility, Assurance, and Reliability. Pearson's correlation coefficient was used to evaluate relationships between participant profiles and potential strategies. The results showed that most employees were male with less than 10 years of service. Passengers, primarily aged 19-34 and non-working, reported recurring issues such as long queues, slow ticketing, mishandled baggage, and staff indifference. Reliability, assurance, and tangibility was negatively affected by equipment problems and poor lighting. Significant correlations between employee roles and responsiveness/empathy led to rejecting the null hypothesis. Aligned with the Sustainable Development Goals (SDGs), this study advocates for more efficient, inclusive, and innovative ground operations. The researchers proposed a program matrix to enhance customer satisfaction by addressing service reliability, empathy, and operational shortcomings.

**Keyword:** *Strategies; Customer satisfaction; Sustainable Development Goals (SDGs); SERVQUAL framework; Ground operations*

**BUSINESS, FINANCE  
&  
MANAGEMENT**

## **BUSINESS, FINANCE & MANAGEMENT**

### **TABLE OF CONTENTS**

<b>Title</b>	<b>Page No.</b>
Marketing Communication of Tuguegarao Airport as Influencing Factors in the Choice of Selected Passengers <i>Lawrenz S. Jacinto, et.al</i>	18
Determinants Of Aviation Schools Success and Marketability Among High Effort Category Clients <i>Jian Chantal L. Caricungan, et.al</i>	19
Fabric Conditioner Made of Musa Acuminata (Lakatan Sap) As Fire Retardant for Aircraft Mechanic Uniforms <i>Trish Jaden G. Boadilla, et.al</i>	20
Development Of Blu for Student Supplies Distribution and Point of Sale <i>Andrei Gideon J. Reyes, et.al</i>	21
Cash Flow Management Practices Of Vegetable Vendors In Baguio City <i>Marielle Kryzyl A. Datuin, Et.Al</i>	22
Green Business Practices In Retail: Assessing Respondents To 'Bring Your Own Bag Initiative' <i>Hershe Joyce Capati, et.al</i>	23
Higher Education Institutions' Culture Of Quality- Oriented Organization Through Total Quality Management (TQM) <i>Agripino Co. Calacsan Jr</i>	24
Ecodent: A Feasibility Study <i>Leah Aguilar, et.al</i>	25
The Creation Of Biodegradable Plastic Using The Fish Scales Of Oreochromis Niloticus <i>Angelique Adagao</i>	26
Barriers Confronted By Senior BSBA-Human Resource Management Students In Career Readiness <i>Sharina A. Caoile</i>	27
Social Entrepreneurship Program Management In The Private Higher Educational Enterprises Institutions In Pangasinan <i>Alvin O. Carillo</i>	28
Customer Satisfaction On Financial Institution Online Mobile Banking Application <i>Joanna Katrina D. Rosario, et.al.</i>	29
Assessment Of Sustainability Accounting Practices Among Small And Medium-Sized Enterprises In Dagupan City's Food And Beverage Industry <i>Kim Joseph B. Visperas</i>	30
Nextgen Careers: Empowering World Citizen Graduates With Data-Driven Counseling And Job Matching <i>Donny A. Alcasabas</i>	31



## MARKETING COMMUNICATION OF TUGUEGARAO AIRPORT AS INFLUENCING FACTORS IN THE CHOICE OF SELECTED PASSENGERS

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### Abstract

This study investigates the influence of marketing communication strategies employed by Tuguegarao Airport on the decision-making process of selected domestic passengers. Employing both quantitative and qualitative research methods, the study focuses on key factors such as product, price, promotion, people, process, physical evidence, and place. Data was gathered through surveys administered to 30 domestic passengers and interviews conducted with airline personnel. The findings reveal that pricing, customer service, and promotional offers are critical determinants of passenger airline selection. "People," reflecting customer service quality, scored the highest in influence, followed by "Process" and "Place," highlighting the importance of service accessibility and streamlined operations. The study also identifies significant challenges faced by the airport, including limited-service variety and restricted night-flight options, which hinder passenger satisfaction and competitive positioning. Recommendations include enhancing staff training, leveraging digital platforms for targeted promotions, and expanding night-flight availability. By integrating these strategies, Tuguegarao Airport can not only improve passenger satisfaction but also strengthen its role in regional aviation. The study underscores the vital role of marketing communication in shaping consumer behavior and provides actionable insights for stakeholders in the aviation industry. This research contributes to a deeper understanding of passenger preferences in smaller regional airports and offers a foundation for future studies aimed at optimizing marketing strategies.

**Keywords:** *Marketing Communication; Tuguegarao Airport; Passenger Preferences; Promotional Strategies; Domestic Air Travel*



## DETERMINANTS OF AVIATION SCHOOLS SUCCESS AND MARKETABILITY AMONG HIGH EFFORT CATEGORY CLIENTS

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### Abstract:

This study explores the factors influencing the success and marketability of aviation schools among high effort category clients in Northern and Central Luzon. A mixed-method approach was used, integrating qualitative interviews and quantitative surveys. Data collected from aviation students and employees highlighted the significant impact of technical, managerial, marketing, financial, and product/service aspects on the performance of aviation schools. Results showed that technical and management factors were rated most influential (3.58 and 3.52 means, respectively), followed by products/services and marketing. Financial concerns, though influential, were relatively less emphasized (mean = 2.96). Key challenges include technological integration, financial constraints, and maintaining safety standards. A functional booklet was developed to enhance the promotional strategies of the schools. Recommendations focus on flexible payment schemes, updated curricula, and stronger industry partnerships.

**Keyword:** *factors; success; marketability; high effort category clients; mixed-method*



## FABRIC CONDITIONER MADE OF MUSA ACUMINATA (LAKATAN SAP) AS FIRE RETARDANT FOR AIRCRAFT MECHANIC UNIFORMS

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### Abstract:

Top-tier fire protection is increasingly important in the continually evolving aviation industry, where flammable liquids, engine fires, cabin fires, and hazardous materials pose persistent threats. In such high-risk environments, the development of effective fire-retardant solutions is essential to ensuring personnel safety. This study explores an innovative, eco-friendly alternative to synthetic fire retardants through the formulation of a fire-retardant fabric conditioner derived from the pseudostem sap of *Musa Acuminata* (Lakatan). The primary motivation behind this research lies in the urgent need to replace conventional chemical-based fire retardants, which often present significant health and environmental hazards, with safer, more sustainable options. Banana pseudostem sap has attracted attention in recent years for its inherent fire-retardant potential. When exposed to heat or flame, the sap promotes the formation of a char layer on fabric surfaces. This layer serves as a thermal barrier, insulating the material from heat and oxygen, thereby delaying ignition and reducing the rate of flame spread. This study further develops this concept by incorporating the sap into a fabric conditioner formulation designed for industrial and occupational applications, particularly targeting uniforms and work wear used by aircraft mechanics, firefighters, and other professionals frequently exposed to fire risks. The fire-retardant fabric conditioner consists of two key components: the banana pseudostem sap extract and a specialized fabric conditioner base. The sap extract is obtained by pressing the pseudostem and refining the resulting liquid. It is rich in natural fire-retardant compounds such as silica and potassium. These minerals contribute to the thermal stability and flame-resistance of treated fabrics. The conditioner base includes softening agents, stabilizers, and binding agents to ensure the even distribution and adherence of the sap to fabric fibers. The combined formulation not only imparts fire-retardant properties but also maintains the fabric's softness, comfort, and durability. This study demonstrates that a banana-based fabric conditioner can be a viable, sustainable solution for enhancing fire resistance in textiles. The successful integration of natural fire-retardant agents into a conditioning medium offers a dual-purpose product that addresses both safety and comfort, making it ideal for high-risk occupational settings.

**Keywords:** *banana pseudostem sap, char layer, top-tier protection, environmentally friendly, flammable liquids*



## DEVELOPMENT OF BLU FOR STUDENT SUPPLIES DISTRIBUTION AND POINT OF SALE

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### Abstract:

The increasing demand for efficient inventory management and point-of-sale (POS) systems within academic institutions, particularly in the Philippine context, has highlighted the need for digital transformation in student-related transactions. This study presents the development and evaluation of the BLU System, a web-based platform designed for student supplies distribution and sales at WCC Aeronautical and Technological College, Binalonan Campus. The initiative aimed to address persistent inefficiencies in the institution's manual purchasing and inventory processes, such as inconsistent product release schedules, limited communication regarding availability, and the absence of a centralized digital solution. Guided by the Design Science Research Methodology (DSRM), the study followed a structured developmental process involving planning, system design, implementation, and evaluation. The system features a searchable product catalog, role-based access control, digital receipts, inventory monitoring, and real-time notifications. To assess its usability, effectiveness, and acceptability, the researchers conducted surveys with 252 student respondents across various departments using 4-point and 5-point Likert scales. Results showed that over 94% of respondents recognized the need for a digital platform to enhance transparency, convenience, and inventory tracking. Students also indicated that the existing manual setup posed frequent challenges and delays. The BLU System was positively rated across all quality dimensions of the ISO 25010 software quality standard, particularly in terms of usability, functionality, compatibility, and system security. The study recommends the full institutional deployment of the BLU System and encourages further development to include mobile responsiveness and integration with digital payment solutions. The platform offers significant potential for replication in other educational institutions aiming to improve operational efficiency in student supply distribution. Overall, the BLU System represents a practical and scalable solution for advancing institutional digitalization in Philippine higher education.

**Keywords:** *Point of Sale (POS) System; Student Supplies Distribution; Inventory Management; Web-Based Application; Technology Acceptance Model (TAM)*

## CASH FLOW MANAGEMENT PRACTICES OF VEGETABLE VENDORS IN BAGUIO CITY

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### Abstract

This study examines the cash flow management practices of vegetable vendors in Barangay Magsaysay, Baguio City, aiming to identify the financial challenges they encounter and the strategies they employ to sustain their businesses. It provides valuable insights for enhancing vendors' financial stability and profitability, supporting policymakers in designing effective financial literacy programs and supportive policies, and guiding financial institutions in creating tailored financial products. This research aligns with the United Nations Sustainable Development Goal (SDG) 8, particularly Target 8.3, which seeks to promote development-oriented policies that support productive activities, decent job creation, and the growth of micro-, small-, and medium-sized enterprises or MSMEs through access to financial services aligned with SDG Indicator 8.3.1. Using a qualitative descriptive approach, the researchers conducted interviews with five vendors, revealing that many struggle with unstable income, spoilage of unsold goods, and limited capital. Most vendors do not maintain written records of earnings and expenses, relying instead on mental tracking and daily experience. Despite these challenges, they prioritize essential expenses, save when possible, and often resort to borrowing or consignment to sustain their operations. This study underscores the critical importance of financial literacy programs, improved access to financing, and the development of practical financial tools to support better cash flow management. These findings offer valuable insights for policymakers, business educators, and community leaders committed to empowering small vendors and fostering resilient local economies.

**Keywords:** cash flow management, vegetable vendors, finance, financial sustainability issues, SDG 8



## GREEN BUSINESS PRACTICES IN RETAIL: ASSESSING RESPONDENTS TO “BRING YOUR OWN BAG INITIATIVE”

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### Abstract:

Environmental issues have grown in importance; hence, stores have started using green business policies, such as the "Bring Your Own Bag" (BYOB) program, meant to cut plastic waste. Still, customer involvement in such projects varies, which begs the issue of what elements affect consumer participation in the BYOB program. With an eye toward demographic and behavioral elements driving involvement, this study aims to evaluate consumer awareness, attitudes, and behaviors about the BYOB campaign. Using a quantitative research approach, 150 retail customers participated in a survey. The poll gauged things like consumer awareness, opinions on sustainability, and BYOB program participation. Analysis of the link between demographic variables (age, education, and income) and initiative participation was done using Pearson correlation ( $r$ ). The Pearson  $r$  study turned up some quite noteworthy correlations. Higher educated people were more likely to regularly bring their bags; there was a positive moderate association ( $r = 0.45$ ,  $p < 0.05$ ) between educational level and frequency of BYOB participation. Environmental concern and involvement showed a substantial positive association ( $r = 0.60$ ,  $p = 0.01$ ), implying that consumers who are more ecologically sensitive were more likely to take part in the project. Income level and participation also show a weak positive association ( $r = 0.30$ ,  $p = 0.05$ ), with higher-income consumers displaying somewhat more involvement. These results highlight the need for focused plans that handle consumer awareness as well as behavioral reasons. Retailers can improve involvement in the BYOB project by matching their incentives with environmental principles and messaging. The research offers insightful information to help retail green practices be better and sustainable customer behavior be advanced.

**Keyword:** *Green Business Practices; Sustainability in Retail; Bring Your Own Bag (BOYB); Consumer Behavior; Environmental Awareness*



## HIGHER EDUCATION INSTITUTIONS' CULTURE OF QUALITY-ORIENTED ORGANIZATION THROUGH TOTAL QUALITY MANAGEMENT (TQM)

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### Abstract:

This study examines the role of Total Quality Management (TQM) in fostering a quality-oriented organizational culture within higher education institutions (HEIs) in Pangasinan, Philippines. This study investigates how TQM principles—such as continuous improvement, customer focus, leadership commitment, and employee involvement—are adopted and integrated into the organizational culture of higher education institutions in Pangasinan. A mixed-method research design was employed, incorporating both qualitative interviews and quantitative surveys to gather data from administrators, faculty, staff, and students from institutions in the Region. The study explores how TQM practices influence key aspects of organizational culture, including leadership styles, communication, decision-making, and staff collaboration. Findings reveal that many HEIs in Pangasinan embraced TQM principles to some extent, full integration into the organizational culture is uneven and varies across institutions. Despite challenges such as limited funding and insufficient training, successful TQM practices led to improved academic performance, enhanced stakeholder satisfaction, and more effective institutional governance. The research underscores the importance of strong leadership, clear strategic vision, and continuous professional development in cultivating a quality-driven culture. This study contributes valuable insights on quality management in education, providing a contextualized understanding of how TQM can be effectively implemented within higher education institutions in the Philippines. It offers practical recommendations for HEIs to strengthen their organizational culture through the sustained application of TQM principles.

**Keyword:** *Organizational Culture, Customer Focus, Leadership Commitment, Institutional Governance, Educational Quality.*



## ECODENT: A FEASIBILITY STUDY

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### Abstract:

The market potential and viability of EcoDent, a green toothpaste tablet company, in the Legarda and Recto districts of Manila are investigated in this feasibility study. Conventional toothpaste packaging greatly adds to plastic pollution, which drives the necessity for environmentally friendly oral hygiene substitutes. EcoDent wants to offer a unique, eco-friendly solution fit for Sustainable Development Goal 12: sensible production and consumption. The main goals of the study are to ascertain the demographic profile of possible consumers, analyze the feasibility of the company using marketing strategies and analytical methods including SWOT analysis, Porter's Five Forces, and the Competitive Profile Matrix, and so assess the market demand. Surveys sent to 150 people dental students, professionals, and ecologically conscious shoppers, among others gathered data. Important results show that, especially among younger age groups, consumers are quite interested in environmentally friendly items. Most of the respondents (70.73%) said that their buying decisions are much influenced by environmental friendliness; hence, 78.06% would be more likely to buy EcoDent if it helps to lower plastic waste. Moreover, the most preferred packaging choice was compostable (43.24%). Most customers are willing to pay between PHP 150 and PHP 350 monthly for toothpaste tablets, indicating a potentially favorable market base. We observed two main issues: inadequate customer awareness and market competition. This research emphasizes EcoDent's ability to establish itself as a trailblazing brand in environmentally friendly dental treatment. EcoDent can effectively carve out a niche in Manila's environmentally minded market with well-considered marketing, creative packaging, and community involvement. Its emphasis on environmental impact, cost, and dental health benefits supports its practicality and scalability both locally and potentially internationally.

**Keyword:** *Eco-Friendly Oral Care; Toothpaste tablets; Sustainable Packaging; Market Feasibility Study; Consumer Behavior in Manila*



## THE CREATION OF BIODEGRADABLE PLASTIC USING THE FISH SCALES OF *OREOCHROMIS NILOTICUS*

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### Abstract:

This study explores the potential of *Oreochromis niloticus* (Nile tilapia) fish scales, a common fishery by product in the Philippines, as a raw material for biodegradable plastic production. Motivated by the pressing need to reduce plastic waste and promote sustainable alternatives, the research aimed to extract chitin and convert it into chitosan from fish scales, which was then blended with plasticizers to formulate a biodegradable bioplastic. The study followed an experimental design: fish scales were processed through deproteinization, demineralization, and deacetylation to obtain chitosan. The resulting polymer was then blended with acetic acid, glycerol, gelatin and finally dried into sheets of samples for testing. The produced bioplastic was evaluated based on its biodegradability, solubility, and durability. Results showed that the sample fully degraded within three days in loam soil, confirming high biodegradability. In the water solubility test, the bioplastic gradually dissolved, completely breaking down by the third day, confirming its high solubility. In terms of durability, the sheet withstood up to 1.7 kg of weight before breaking at 1.8 kg after 5 seconds, indicating moderate tensile strength. This study provides a low-cost, scalable method for converting waste into useful material and demonstrates the feasibility of bioplastic from locally available resources. It supports SDG 12 (Responsible Consumption and Production) by promoting waste reuse and sustainable resource utilization, SDG 9 (Industry, Innovation and Infrastructure) through development of innovative bio-based materials, and SDG 13 (Climate Action) by addressing the environmental impacts of conventional plastics through biodegradable alternatives. With further development, this bioplastic can become a sustainable alternative to petroleum-based products and contribute to long-term environmental conservation.

**Keyword:** Bioplastic; *Oreochromis Niloticus*; Fish scales; Sustainability; Biodegradability

## **BARRIERS CONFRONTED BY SENIOR BSBA-HUMAN RESOURCE MANAGEMENT STUDENTS IN CAREER READINESS**

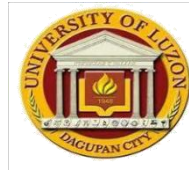
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### **Abstract**

This study aimed to determine the barriers confronted by senior students in the Bachelor of Science in Business Administration major in Human Resource Management in career readiness. It involved 34 respondents were senior students of Business Administration major in Human Resource from Urdaneta City University. Researchers examined the personal profile of the respondents concerning age, sex, civil status, communication skills, interests and hobbies, and skills and abilities. A quantitative descriptive research design was applied. Additionally, the researchers used complete enumeration, meaning a full count. Likert scale survey questionnaire was also used to measure the variables. Majority of the respondents are young adults, single women showed better writing communication skills, making them more ready to adapt to the workplace. Findings revealed that the respondents “Agree” that there are barriers in academic performance, specific challenges encountered, and career goals and aspirations. However, they “Disagree” that there are no barriers in social support. The action plan served as guidelines for graduating students in Bachelor of Science in Business Administration major in Human Resource Management of Urdaneta City University to mitigate potential barriers in career readiness. The researchers suggests that students actively seek out opportunities to engage in different activities, building leadership qualities, and problem-solving skills. Engaging in those activities enhances personal growth and improves one’s career by developing a well-rounded skills set. By mitigating those barriers, the study seeks to better prepare students for their future careers and improve their transition from academic to professional environment.

**Keywords:** *Barriers; BSBA-HRM; Career Readiness*



## **SOCIAL ENTREPRENEURSHIP PROGRAM MANAGEMENT IN THE PRIVATE HIGHER EDUCATIONAL ENTERPRISES INSTITUTIONS IN PANGASINAN**

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### **Abstract**

Every community deserves a good life and better living. However, many of them across the border are still poor and trying to get out of poverty, famine, health and mental crisis, climate crisis, and social crisis are major challenges and problems facing the community at present. These challenges and issues affect vulnerable communities, where resources and access are not equitable, but limited and lacking. This study aimed to analyzed the management and implementation of social entrepreneurship programs of private higher educational enterprises of Pangasinan along the following areas as assessed by the beneficiaries and implementers such as Administrative and Institutional Initiative, Program and/or College Driven Initiative, and Extension Service Office Initiative; Types of Community Extension Services Programs and Activities; Involvement of Administration, Personnel, Staff and Students; Identifying of partner communities, and stakeholders. Also, determine the extent of the significance of the difference in the status of implementation between the assessments of the two groups of respondents across the aforementioned areas. Results of the study served as the basis for formulating a community extension services program model in promoting social entrepreneurship in pursuit of fulfilling the corporate social responsibilities of the institutions towards the community and sustainable development. A descriptive method of research employing a survey and interview guide was utilized. Finally, based on the findings, the researcher recommends that Private Higher Education Institutions (HEIs) need to be increasingly prepared to deploy their resources in trans-disciplinary, collaborative, and innovative ways to address social problems in communities, especially when social enterprises and livelihood are the needs and requirements for the project-based implementation.

**Keywords:** *Social Entrepreneurship, Private Higher Educational Enterprise Institution, Community outreach*

## CUSTOMER SATISFACTION ON FINANCIAL INSTITUTION ONLINE MOBILE BANKING APPLICATION

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### Abstract

The implementation of digital banking services, such as mobile banking applications, has brought about significant benefits to both banks and their customers. Commercial banks in the Philippines have leveraged digital marketing strategies to extend their reach to a wider audience, leading to an increased number of clients who can access and utilize various banking services and products (Culagbang & Diego, 2019). The successful implementation and adoption of online mobile banking applications require a comprehensive understanding of the multi-stakeholder satisfaction, including the perspectives of both banks and their customers. Hence, this study aimed to determine the extent of satisfaction of different stakeholders, i.e., pensioners/beneficiaries, professionals, and students, on the online mobile banking application of a government-run financial institution in Pangasinan. Utilizing the descriptive design, the study employed 30 pensioners/beneficiaries, 60 professionals, and 30 students that were purposively chosen. The data obtained during the online survey was analyzed using quantitative data analysis techniques, such as mean, weighted mean, rank, analysis of variance (ANOVA), frequency, and percentage. Based on the findings, the security quality topped the rank among the 4 aspects of Online Mobile Banking Application Level of Stakeholder Satisfaction with a computed composite mean of 4.93. Followed by brand trustworthiness with a composite mean of 4.89. Next is the service quality with a composite mean of 4.88, and lastly is the transaction speed with a composite mean of 4.34. All of the 4 aspects are rated by the 3 stakeholders as very high extent of satisfaction. Additionally, the various stakeholders reported several difficulties such as connectivity problems, difficulties in remembering their user ID and password, long transaction times, and un-updated information online. This consistency in the responses underscores the application's effectiveness in addressing the diverse needs and expectation of its users in spite of some challenges encountered.

**Keywords:** *Customer Satisfaction, Online Banking Application, Financial Institutions, Pangasinan*



## ASSESSMENT OF SUSTAINABILITY ACCOUNTING PRACTICES AMONG SMALL AND MEDIUM-SIZED ENTERPRISES IN DAGUPAN CITY'S FOOD AND BEVERAGE INDUSTRY

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### Abstract:

In recent years, there has been a growing emphasis on sustainability accounting practices, particularly regarding Environmental, Social, and Governance (ESG) factors, as a means to promote responsible business conduct and address pressing global challenges. This study evaluates the awareness of sustainability accounting practices, with an emphasis on ESG aspects, among small and medium-sized enterprises (SMEs) in Dagupan City's food and beverage industry. The research aims to assess the level of awareness of sustainable accounting practices among respondents using self-administered questionnaires. The research methodology involved distributing questionnaires directly to respondents, providing insights into their assessment and familiarity with sustainable accounting concepts. Data was collected using closed-ended and Likert scale questionnaires to gauge respondents' awareness levels. The analysis revealed that respondents exhibited a moderate level of awareness, indicating a certain degree of familiarity with sustainable accounting principles. The study underscores the importance of promoting a deeper understanding and increased awareness of sustainable accounting practices to support ethical corporate practices and contribute to achieving sustainability goals.

**Keyword:** *Assessment, Level of Awareness, Sustainability Accounting, Small and Medium- sized Enterprises, Food and Beverage Industry*

## **NEXTGEN CAREERS: EMPOWERING WORLD CITIZEN GRADUATES WITH DATA-DRIVEN COUNSELING AND JOB MATCHING**

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### **Abstract**

In today's competitive and fast-evolving job market, bridging the gap between education and employment remains a critical challenge for students, recent graduates, and career changers. This capstone project introduces GradPath, a data-driven mobile application developed to empower World Citi Colleges' graduates, On-the-Job Trainees (OJTs), and alumni in their career planning, job search, and professional growth. GradPath offers an integrated suite of career services including real-time job matching, AI-enhanced career assessments, personalized counseling, resume-building tools, and access to a dynamic repository of career development resources. Leveraging institutional academic data, user inputs, and real-time labor market analytics, the app creates customized career recommendations fit for the user's qualifications, interests, aptitudes, and job aspirations. The system architecture incorporates secure cloud-based storage, real-time notifications, and a user-friendly interface accessible across multiple devices. This study employed a descriptive-correlational design and quantitative approach to assess the system's impact on career clarity, confidence, and job search outcomes. Surveys and evaluation tools based on ISO/IEC 25010 standards were utilized, revealing high scores in functional suitability, maintainability, and security. User feedback further highlighted the app's value in increasing awareness of industry trends, enhancing readiness for employment, and enabling informed decision-making. GradPath not only serves as a digital bridge between academic achievement and meaningful employment but also represents a scalable, future-ready model for higher education institutions seeking to modernize career support services through technology.

**Keywords:** *Career Guidance System, Job Matching Application, Data-Driven Counseling, Higher Education Employability, and Mobile Career Development Tools*

# **ENGINEERING & INFORMATION TECHNOLOGY**

## ENGINEERING AND INFORMATION TECHNOLOGY

### TABLE OF CONTENTS

Title	Page No.
The Development of SkyAugment: An Interactive Learning Material for Aircraft Familiarization <i>Tanedo, et.al.</i>	36
Know Flight App 1.0: Development of Flight Preparedness Tool for Student Pilots <i>Cromwell Canto, et.al</i>	37
Sky Insight: A Digital Flight Information System for WCC Pilot Academy <i>Ronald Chester M. Lorenzana, et.al</i>	38
AIRTRAX: Development Of Flight Progress Monitoring Application <i>Aldous Godfrey T. Manahan</i>	39
NavX: Automated Cross-Country Navigator App <i>Argie Badua III, et.al</i>	40
Cabin VR: Virtual Reality Of Interior Navigation Of Aircraft Boeing 737 <i>Joshua P. Balona, et.al</i>	41
Development Of RPDO E-Journal Website For Enhancing Accessibility And Dissemination Of Researches In WCC ATC <i>Yelli Policarpio, et.al</i>	42
Alternative Filtration Device: Determining Water Quality of WCC ATC <i>Paolo Kingsley Marquez, et.al</i>	43
Dacsim Miniature Taxiway With Rudder Pedal: A Simulator For Taxiing <i>Ken Gabriel Aleganza, et.al</i>	44
Automated Waste Monitoring System in WCC ATC Binalonan: A Sustainable Solution <i>Hans Frederick Hilado, et.al</i>	45
Geberut: Converting Automotive Heat Energy Into Useable Electrical Energy <i>Matt Marelle M. Apillanes, et.al</i>	46
Bird's Eye: Incorporating FPV And TPV Systems For Improved Quadcopter Simulation Practice <i>Lawrence C. Danan Jr., et.al</i>	47
Eco-Osp: Development of Oyster Shell Machine Crusher and Mixer As A Response to Shell Waste Management <i>Rafael Christian Golingán, et.al</i>	48

Eco-R Machine: Paper-Plastic Recycled Ceiling Panel Production System	49
<b>Arjon Jay C. Almonte, et.al</b>	
Development Of Mixed Reality For Tecnam P2006t Landing Gear Servicing Training	50
<b>Julius N. Damo, et.al</b>	
Jack-Hesive: Jackfruit Sap Machine For Plant- Based Adhesive Production	51
<b>Jose Gabriel Ochoa, et.al</b>	
AEROMACH: Battery Test App For Aeronautical Engineering	52
<b>Bander Salem Mohammed F. Al Suwaidi, et.al</b>	
Eye-Future: Development Of Digital Sustainability Podium Application	53
<b>Naresh F. Kumar, et.al</b>	
Tri-D Touch Response Interactive Display: Development Of An Interactive 3d Model Of Tecnam P2006t	54
<b>Crishelle Louise A. Almanon, et.al</b>	
Development Of Vrtec Virtual Reality Simulation On Flight Procedures: Application In Tecnam P2006t Aircraft	55
<b>Ylmaz L. Ablo, et.al</b>	
PET Plastic Bottles As 3D-Printing Filament For Development Of Sustainable Honeycomb Core In Aircraft Floor Panels	56
<b>Luis Reden De Vera, et.al</b>	
Bamboo-Based Composite Production Of Bambusa Blumeana (Kawayan Tinik) As Roofing Panel For Aircraft Hangars	57
<b>Romyl Suarez, et.al</b>	
Design and Optimization of a Portable Cooling System Using a Peltier Module and Two Stage Heat Exchanger	58
<b>Tabayoyong, et.al</b>	
Development and Evaluation of the Palosebo Quiz and Adventure Game: A Digital Approach to Cultural Preservation	59
<b>Magalong, et.al</b>	
Development and Evaluation of Ultrasonic Glasses as Assistive Technology for Individuals with Visual Impairment	60
<b>Lamsen, et.al</b>	
Analyzing Environmental Awareness on Microplastic Pollution and Battery Disposal: Developing an Infographic-Based Educational Tool for Waste Management Literacy	61
<b>Castanaga, et.al</b>	

Thermochemical Implications and Combustion Effectiveness of Hydrogen-Hydrogen-Oxygen (HHO) Gas Mixtures in Internal Combustion Engines	62
<b>Miemban, et.al</b>	
Evaluating the Validity and Predictive Power of College Admission Tests for Electronics Engineering and Architecture Programs	63
<b>Zamora, et.al</b>	
Enhancing Document Security Through an Electronic Management System for a Private Higher Educational Institution	64
<b>Mislang, et.al</b>	
Assessment and Upgrading of Electrical System of Philippine College of Science and Technology, Nalsian, Calasiao, Pangasinan	65
<b>Gironella Jr., O.F. &amp; Cordero, JG.</b>	
Smart IoT Surveillance: Enhancing Security with Real-Time Component Removal and Intrusion Detection in Computer Laboratories	66
<b>Aseneta, et.al</b>	
Design And Implementation Of Vr Launcher: A Repository Of Existing Vr Training Tool Of Amt Department	67
<b>Geririkk Pfranz Tobias, et.al</b>	
SKYFRAME 172: Development Of Educational Resources Using An Augmented Reality Approach For The Wing Structure And Fuel System Of The Cessna 172	68
<b>Garcia, Alger Joseph et.al</b>	
Robinson R44: Enhancing Helicopter Maintenance Training Through Virtual Reality With Generative Ai Features And Application	69
<b>Mark Trsitán Estayo, et.al</b>	



## THE DEVELOPMENT OF SKYAUGMENT: AN INTERACTIVE LEARNING MATERIAL FOR AIRCRAFT FAMILIARIZATION

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### Abstract:

The study presented the development of the SkyAugment application, which is an interactive Augmented Reality (AR) application designed to help aviation students in aircraft familiarization of the Tecnam P2002JF aircraft, specifically the procedures of pre flight inspection. The SkyAugment application features immersive and real-time simulations that help in the learning process through aircraft exploration and pre-flight inspection procedures that contain details in an interactive environment. This study answers some of the common problems relating to aviation learning, like limited access to the physical aircraft, a lack of visual learning tools, and lacking and inaccessible offline resources. The background of the study explores the role of Augmented Reality in education and high-stakes industries, like the aviation industry, and the potential of significantly improving the knowledge and hands-on skills of learners through interactive engagements. Augmented Reality shows potential in enhancing flight training despite technological challenges such as high processing demands and privacy concerns. Related studies showed Augmented Reality effectiveness in reducing training durations and improving pilot readiness, but Augmented Reality tools remain dependent on the internet, or it has a problem with a lack of comprehensive educational content. The SkyAugment application aims to fill the gap by providing an interactive and student-centered learning material that will improve usability and accessibility for student pilots. The application gives the user convenient access to a readily available virtual aircraft walk-around, a detailed checklist on aircraft pre-flight inspection, and spatially accurate 3D models, where it gives a more effective, self-paced learning. This application explores the design, development, and potential impact of SkyAugment in providing better accessibility and quality to aviation education.

**Keyword:** *Augmented Reality; Aviation; Pre-Flight Inspection; Application; Education*



## KNOW FLIGHT APP 1.0: DEVELOPMENT OF FLIGHT PREPAREDNESS TOOL FOR STUDENT PILOTS

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### Abstract:

This study aimed to help student pilots in enhance their preparedness for their flight training. This addresses the common knowledge of student pilots that are needed to be included in the application as view by both student pilots and flight instructors, discuss the features of the app and its different testing phases, the evaluation of the acceptability of the app, and areas of concern that needed more improvements. This study utilizes quantitative-descriptive developmental methods in addressing the statements of the problems and utilizes average weighted mean for statistical analysis. Results shows that the application works as intended and was positively views by the student pilots however, there were slight improvements that needed to satisfy the features for flight instructors. Overall, the study can serve as a foundation for future researchers and the app have a potential to improve flight training experiences of student pilots by maximize its utilization, incorporating more features, and widening the scope of the study. The researchers received some recommendations to improve the current study such as, expand the scope of the study further, such as including the student pilots and flight instructors of Cessna152 to enhance not only the commercial flying students but the entire aviation curriculum, add more features such as interactive cockpit, visual simulation on procedural skills, and interactive voice reporting and feedback for communication skills, add a main feature that serves as a learning module for the students to access from the app, wherein they can study first before answering the assessments, conduct the testing with a large population such as 20 or more devices using it at once, make the app also accessible with IOS devices, and other devices such as windows, and address the specific feedback regarding incorporating study material of the lessons and unlocking all lessons. Additionally, consider adding a feature wherein the users can submit and vote for suggestions.

**Keyword:** *Flight Preparedness Tool; Pilot Training; Student Pilots; Developmental App*



## **SKY INSIGHT: A DIGITAL FLIGHT INFORMATION SYSTEM FOR WCC PILOT ACADEMY**

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### **Abstract:**

The demand for well-trained pilots in the rapidly growing global aviation industry highlights the importance of consistent access to crucial aerodrome information (International Air Transport Association, 2023; Federal Aviation Administration, 2023). However, ensuring the accuracy and availability of this data poses significant challenges, further magnified by the continuous evolution of airport infrastructure (International Civil Aviation Organization, 2023). Addressing these challenges requires an effective and standardized system for updating and accessing airport information worldwide (EUROCONTROL, 2011). The current process for disseminating flight information at WCC Pilot Academy involves distributing airport information through the school's Facebook group page and obtaining weather updates requires pilots to visit the WCC ATC aerodrome in person, leading to inefficiencies and inconveniences for student pilots. Improved access to up-to-date aerodrome information is necessary to address these challenges. Moreover, Sky-insight proposed a centralized digital aerodrome and flight information system called Sky-Insight for student pilots at WCC Pilot Academy. The research project delimits its respondents to individuals within the WCC Pilot Academy, including employees in flight operations offices, air traffic control, safety department, as well as 3rd-year and 4th-year students of BS Commercial Flying and BS Airline Operations Management. The research project has a television display visible within the flight operations office where students typically gather their flight plan before their flight training. Additionally, it is accessible via website, allowing students and instructors to access it through their mobile devices. This research project concentrates on furnishing WCC Pilot Academy with a centralized information system, serving as a guiding resource for student pilots throughout their flight training.

**Keyword:** Flight Information System; Aerodrome Data; Student Pilots; Aviation Operations; WCC Pilot Academy



## AIRTRAX: DEVELOPMENT OF FLIGHT PROGRESS MONITORING APPLICATION

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### Abstract:

The study presents Aitrax, a web-based scheduling system and mobile application developed in order to address present challenges in flight training management at WCC Pilot Academy. The current system for scheduling confronts challenges such as an increasing number of student pilots, limited instructor availability, and inconsistent student engagement. Aitrax intends to streamline flight progress monitoring and scheduling by providing a unified, internet based system customized to three primary users: student pilots, flight instructors, and flight schedulers. The application enables student pilots to keep track of their flight training progress in real time, which enables them to remain on course and fulfill their flight requirements in a timely manner. Instructors benefit from having a thorough understanding of each students performance and training requirements, thus enabling them to provide more targeted and efficient instruction. Meanwhile, flight schedulers are assisted by a well organized web-based system that significantly increases flight allocation accuracy and efficiency as compared with current conventional ways. The researchers have utilized three (3) types of questionnaires in line with the Statement of the Problem of the study. The instruments include Needs Analysis Questionnaire, Flight Monitoring Gaps Questionnaire, and Level of Importance Questionnaire. In addition to that, an ISO Questionnaire was used to test Aitrax' Level of Acceptability. The self-made assessment tools were devised in accordance with the specific function needed by each user. The results gathered served as the backbone of what features shall be incorporated in both systems. The research will utilize a developmental research design and a descriptive approach on evaluating Aitrax effectiveness, accuracy, and acceptance among users. By improving stakeholder communication and coordination, Aitrax aims to deliver a more consistent, simplified, and productive flight training environment at WCC Pilot Academy.

**Keywords:** *Flight Progress Monitoring; Real Time Tracking; Scheduling System; Mobile Application; Internet-Based System.*



## NAVX: AUTOMATED CROSS-COUNTRY NAVIGATOR APP

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### Abstract

Student pilots at WCC Aeronautical and Technological College often face obstacles in navigation during cross-country flights. Based on the conducted survey, the majority of the student pilots have difficulties in determining their waypoints, especially on their first cross-country flight. It is also notable on the survey that the student pilots allot a significant amount of time preparing for their cross-country flight, including preparation of navigational logs through traditional means (Sectional Charts, Plotters, etc.). To address these challenges, which also include airport information retrieval and real-time weather updates accessibility, researchers developed the NavX: Smart Cross-Country Navigator App, a digital tool designed to enhance their flight planning and situational awareness. The researchers utilized a quantitative descriptive and developmental research design for this study. Through thorough testing, NavX was developed to guarantee a user-friendly and high-performance application that adheres to ISO 25010 quality standards. The said application provides student pilots with essential tools such as automated navigation flight logs, AI chat, live pilot reports, real-time weather updates, and airport information, fostering confidence and improved decision-making. This application significantly reduces the time allotted for pre-flight planning through automation, and also aids student pilots on their cross-country flights. Data were collected from student pilots who had completed at least 20 hours of pre-solo training and were eligible for cross-country flights. The researchers gathered data to determine the challenges faced by student pilots in WCC and utilized the data to determine the application's ideal features. NavX's initial versions were validated and evaluated by aviation experts, WCC Pilot Academy Flight Instructors, before the application was deployed to its intended beneficiaries– the student pilots. The application was tested in simulated flight conditions, followed by said user evaluations. Pilot testing and user evaluations showed a strong level of acceptance, confirming that NavX significantly reduces student pilots' workload, improves safety, and contributes to a more efficient cross-country flight experience. The study concludes that NavX could be integrated into aviation training programs as a contemporary educational tool, bridging the gap between traditional navigation techniques and technological innovations in aviation.

**Keywords:** *cross-country; navigation; mobile application; real-time weather information*



## CABIN VR: VIRTUAL REALITY OF INTERIOR NAVIGATION OF AIRCRAFT BOEING 737

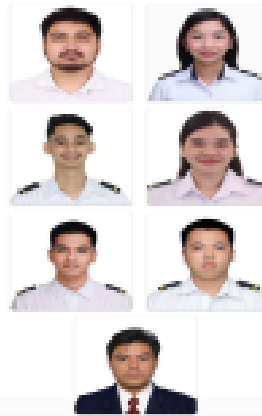
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### Abstract:

The aviation industry is a complex and highly safety-regulated field, where a comprehensive understanding of aircraft systems particularly those within the cabin is essential for ensuring passenger safety, comfort, and operational efficiency. Cabin components such as seating configurations, ventilation systems, lighting, in-flight entertainment, and emergency protocols are integral to the functionality of commercial aircraft. This research presents the development and evaluation of an interactive and immersive Virtual Reality (VR) simulation of the Boeing 737-800 cabin interior. The simulation is designed specifically for avionics students at WCC Aeronautical and Technological College Binalonan Campus to provide a realistic and engaging learning experience that bridges theoretical knowledge with practical application. The VR environment enables users to explore and interact with various cabin elements in a three-dimensional space, closely replicating the look, layout, and feel of an actual aircraft. Through this hands-on approach, students gain familiarity with real-world systems in a risk-free, controlled setting. To assess the effectiveness of the VR training tool, a pre-test/post-test study was conducted involving 51 participants. The average test scores significantly improved from 2.70 to 4.25, indicating increased comprehension after exposure to the simulation. Statistical analysis confirmed the significance of the results, demonstrating that the VR tool effectively enhances understanding of aircraft cabin systems. Overall, this study highlights how virtual reality can serve as a powerful educational resource in avionics training. By making complex aircraft systems more tangible and accessible, VR-based learning tools have the potential to improve student engagement, retention, and readiness for real-world aviation environments and scenarios.

**Keyword:** Boeing 737 - 800; Cabin; Avionics; Virtual Reality; Simulation;



## DEVELOPMENT OF RPDO E-JOURNAL WEBSITE FOR ENHANCING ACCESSIBILITY AND DISSEMINATION OF RESEARCHES IN WCC ATC

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### Abstract:

This literature review analyzes the importance of creating an RPDO -Journal website to enhance research accessibility and dissemination within the WCC-ATC. With the rapid expansion of digital media, educational interaction paradigms are evolving toward online dissemination. In the digital age, where the internet is the primary source of knowledge, college students frequently have difficulties in acquiring credible academic material. The objective of the RPDO -Journal Website development at WCC ATC is to improve research output accessibility and dissemination. However, the efficacy and inclusion of such platforms are still challenged. Current discussions focus on issues such as information overload, digital divide, and sustainability. Nonetheless, the prospective benefits, such as global reach, collaboration between departments, and rapid dissemination, highlight the significance of this study. This study will critically assess existing research, evaluate methods, and synthesize findings to help readers understand the significance, challenges, and best practices for developing an RPDO E-Journal website. By providing a centralized platform for storing and accessing of theses, feasibilities, and other research materials, the RPDO -Journal Website will eliminate the present inefficiencies associated with keeping old manuscripts in physical formats. By digitizing historical resources and creating an organized repository, this initiative not only facilitates easier access to academic and research materials for students and instructors but also enhances the overall research culture within the institution. The implementation of the project is anticipated to considerably improve the academic experience and support the institution's educational goals by addressing the current inefficiencies in storing and accessing research materials.

**Keyword:** RPDO e-Journal Website; Digital Media; Rapid Dissemination; Research Accessibility; Education Technology



## ALTERNATIVE FILTRATION DEVICE: DETERMINING WATER QUALITY OF WCC ATC

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### Abstract:

Access to clean and safe drinking water is a critical component of public health, particularly in areas where conventional water filtration systems are either unavailable or impractical due to economic or logistical constraints. At WCC-ATC, the challenge of poor water quality necessitated an innovative and cost-effective solution. This study addresses the issue of water contamination by investigating the effectiveness of an alternative filtration system utilizing natural and locally available materials. The primary objective of the research was to design, develop, and evaluate a low-cost filtration device made from corn, coconut husks, sugarcane bagasse, and activated charcoal derived from coconut shells. Specifically, the study aimed to assess the device's ability to enhance key water quality parameters, namely total coliform, thermotolerant coliform, and total HPC, thereby determining its effectiveness compared to traditional filtration methods. A series of laboratory experiments were conducted under controlled conditions to measure the impact of the filtration device on the stated parameters. Pre- and post-filtration water samples were analyzed using standard water testing protocols to ensure the reliability and accuracy of the results. The findings revealed significant improvements in water quality following the filtration process. Notable reductions in contaminants were observed however, it was not acceptable for the standard of potable parameters. Although significant remarks were noticed in the process, certain contaminants remained largely unaffected, the overall enhancement in water quality validated the filtration system's effectiveness. Natural processing was not enough, as certain contaminants were able to pass through the tested water samples. The significance of this study lies in its demonstration of how accessible natural materials can be repurposed into practical filtration solutions for resource-limited communities. The device presents an environmentally friendly and affordable alternative for producing potable water, especially in areas lacking a source of potable water and weather affects the cleanliness of nearby water sources. The success of this approach highlights the potential for wider application in similar contexts and underscores the need for ongoing innovation in community-based water purification strategies. Future research may further optimize the design and explore its scalability for broader implementation.

**Keyword:** *Alternative filtration device; Water quality; pH, coliform, SDG 6*



## DACSIM MINIATURE TAXIWAY WITH RUDDER PEDAL: A SIMULATOR FOR TAXIING

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### Abstract

Aviation is one of the biggest industries worldwide. Thus further innovation and development are big factors in its effective and efficient service. Simulator training provides numerous benefits by providing real-time-like scenarios, not just theoretically. One of the training of the student pilot is the taxiing exercise. It is not widely known compared to ALSIMs and RedBird and actual airborne training. Moreover, the said training only took two hours. The taxi skills, specifically centerline management, may be enhanced through constant flight training; some trainees still find it difficult. Thus, the DACsim miniature taxiway with rudder pedal control, a simulator for taxiing, was created and introduced to address and provide solutions for the issue. DACsim provides more confidence and safety to all operations since it is a controlled environment before entering in to the airside or the ramp. The project introduces a taxiway simulator modeled after the actual layout of WCC ATC Binalonan. Targeted at pre-solo student pilots and Cessna 152 flight instructors, the simulator aims to enhance student pilots' familiarity with taxiway layouts, improve procedural application, and build confidence through experiential learning. The DACsim features a rudder pedal and a remote-controlled aircraft to simulate realistic taxiing scenarios. Through unit, integration, and system testing, the simulator's design, construction, usability, and effectiveness were evaluated. Results from 21 student pilots and 5 instructors showed high levels of acceptance, with weighted means indicating strong performance in areas of design (4.62), construction (4.62), testing (4.63), creativity (4.69), and presentation (4.81). The study concludes that the DACsim effectively supports taxiing skill development and enhances overall pilot training.

**Keyword:** Aviation; Simulator; Taxiways; Rudder Pedal; Taxi Exercise.



## AUTOMATED WASTE MONITORING SYSTEM IN WCC ATC BINALONAN: A SUSTAINABLE SOLUTION

Hans Frederick Hilado<sup>1</sup>, Jhustin Paul Perico<sup>1</sup>, Patricia Nicole Alvarado<sup>1</sup>, Marc Romeo Zulueta<sup>1</sup>, Yasser Frianeza<sup>2</sup>, Aldrein Argentera<sup>2</sup>, Vince Genus Emmanuel Belina<sup>2</sup>

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### Abstract:

The purpose of this study is to implement the Automated Waste Monitoring System in WCC ATC Binalonan to enhance waste management in the institution. The rationale for this study is from the inefficiencies in traditional waste management practices inside the campus that leads to overaccumulation of waste which then leads to environmental degradation. The objective of this study is to develop and implement a system that utilizes ultrasonic sensors and load cells to allow real time monitoring that will help in the timely collection of wastes as well as in gathering data regarding the institution's generated waste to enhance operational efficiency and environmental sustainability. The system is designed with ultrasonic sensors to detect waste levels and load cells to measure waste volumes and weight that can be accessed from an application. This study made use of Quantitative-Descriptive Developmental Design to evaluate the effectiveness of the system in addressing waste management challenges by combining descriptive and developmental approaches. The researchers made use of questionnaires that focused on challenges in waste management practices that are being faced by the waste management staff in WCC Binalonan. The acceptability test was conducted with the use of ISO 25010 to ensure that the system adheres to ISO standards. The use of Waterfall Methodology ensured a detailed and structured flow in developing the system. Based on the results, the institution is facing a moderately severe challenge in the lack of trained personnels in operating machineries for waste collection, thus, affecting operational efficiency. In addition, user-testing and levels of acceptability results indicate the need for a larger capacity to ensure a smooth and efficient operation of the system. The researchers recommend to the future researchers to use renewable resources in powering the system such as solar power to further enhance the system's sustainable development goals.

**Keyword:** automation; smart bins; environmental sustainability; IoT; efficiency; technology; waste management; waste monitoring

## GEBERUT: CONVERTING AUTOMOTIVE HEAT ENERGY INTO USEABLE ELECTRICAL ENERGY

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### Abstract:

This study aims to address the inevitable heat energy from automotive exhaust waste through an affordable, lightweight heat waste recovery device that converts heat energy to usable electrical energy. The research involves integrating Thermoelectric Generators (TEGs) into the automotive industry, which allows people to generate electricity just by using their vehicle, whether it may be a simple automotive system, such as a motorcycle, or a bigger system, such as a piston-engine aircraft. The electricity generated can power a 12V voltage output, which can be stored in a battery that can then be used for charging. By experimenting with the TEG's design to be in its most optimized condition, it may advance exploration towards another reliable renewable energy source.

**Keywords:** *Renewable Energy, Sustainability, Automotive Heat, Waste Heat Recovery (WHR) Systems, Thermoelectric Generators (TEGs)*

## **BIRD’S EYE: INCORPORATING FPV AND TPV SYSTEMS FOR IMPROVED QUADCOPTER SIMULATION PRACTICE**

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### **Abstract:**

Virtual Reality (VR) is increasingly used in unmanned aerial vehicle (UAV) training, yet the Philippines lacks efficient VR-based quadcopter simulators for education, especially in restricted airspace like WCC Binalonan Airfield. This study develops a dual-view (FPV/TPV) VR quadcopter simulator to enhance training accessibility and safety. By integrating immersive controls and realistic flight dynamics, the system provides a risk-free, practical alternative to traditional training. The findings aim to improve UAV education with a cost-effective, scalable tool, bridging the gap in VR-based quadcopter training and advancing UAV education in restricted areas.

**Keyword:** *Virtual Reality; FPV (First-Person-View); TPV (Third-Person-View); Quadcopter; UAV (Unmanned Aerial Vehicle)*

## ECO-OSP: DEVELOPMENT OF OYSTER SHELL MACHINE CRUSHER AND MIXER AS A RESPONSE TO SHELL WASTE MANAGEMENT

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### Abstract:

The global rise in shellfish consumption generates significant shell waste, posing environmental and health challenges due to improper disposal. In response, this study proposed the utilization of oyster shell powder as fertilizer and as characteristic of making blocks for sustainable waste management. As a project, the machine itself was designed and tested by experts. As to the software detecting oyster shell, the hardware requirements and software requirements were tested. This powdered element is the output of using the oyster shell machine crusher and mixer. The physical and chemical properties of the oyster shell powder were also tested. The study focused on coastal regions, particularly in the Philippines, where shell waste accumulation threatens marine ecosystems and livelihoods. The findings provide insights into the feasibility of large-scale implementation, contributing to environmental sustainability and resource conservation in the construction and agriculture industries. By addressing shell waste management through innovative recycling, this research aligns with global efforts to promote circular economies and reduce pollution. It also highlights the potential of integrating industrial innovation with environmental conservation, benefiting both local communities and broader ecological systems. This initiative could serve as a model for similar waste-to-resource solutions worldwide, emphasizing the critical role of sustainable practices in tackling environmental challenges.

**Keywords:** *Shell Waste Management, Oyster Shell Powder, Mechanized Mixer, Waste Management System, Life on Land, Sustainable Cities and Communities, Industry Innovation and Infrastructure.*



## ECO-R MACHINE: PAPER-PLASTIC RECYCLED CEILING PANEL PRODUCTION SYSTEM

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### Abstract:

Paper and plastic waste are eventual problems that is faced by the community, local and international alike. In WCC-ATC Binalonan and its surrounding community, paper and plastic waste are produced in substantial amount due to the surrounding educational and residential establishments. A machine to make use of this abundance of waste material can aid in the reduction of existing waste, with clean renewable energy as its power source to reduce reliance on on-grid energy. The goal of this study is to create a machine that can recycle paper and plastic waste, create a sustainable product in the form of panels, and utilize renewable energy in doing so. The Generator consists of Solar and Wind energies powering the recycler machine. Dubbed the Vendo unit, the recycler primary consists of shredder, heater, and molder components, connected by an electrical system powered by two (2) batteries. The electrical system can also be used outside of its intended purpose of powering the machine, to provide electrical source for tools, chargers, and other electrical devices in case of emergency. The researcher used a Descriptive-Development for Methodology. As the aspect of the study accessed the effectiveness of the product in reducing plastic and paper wastes. The development aspects focused on the creation of the ECO-R Machine, consisting of four main components: Shredder, Heating System, Molder and Generator. The generator powered by Solar and Wind Energy. Testing involved functionality, maintainability, safety, reliability, and user interaction, assessed using a 5-point Likert Scale. Arduino based automation was implemented for security and efficiency of the machine. The result of the study is sustainable and clean energy recycler that produces durable paper-plastic ceiling panels out of the everyday waste commonly found in the area such as PET/HDPE plastic. The machine successfully operated using hybrid renewable energy sources and was capable of functioning independently from the electrical grid. The product is applicable for use in educational, aviation industry and local community setting. In conclusion, the ECO-R Machine not only promotes waste reduction and recycling but also demonstrate the practical use of renewable energy. The machine offers eco friendly and energy efficient solution to both waste and power problems.

**Keyword:** Paper and Plastic waste, Recycle, Recycled Product, Renewable Energy, Machine, Panels



## DEVELOPMENT OF MIXED REALITY FOR TECNAM P2006T LANDING GEAR SERVICING TRAINING

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Mendoza, Marc Angelo J.<sup>4</sup>, Centeno, Mike George C.<sup>5</sup>, Razon, Carl Andrew A.<sup>6</sup>,  
Recometa, Romuluz V.<sup>7</sup>, Pascua Le Giro Lexi R.<sup>8</sup>, Gonzales, Joedrei Q.<sup>9</sup>,  
Andres, Gerald B.<sup>10</sup>, Cabasa, Justine S.<sup>11</sup>, Jutie King Luis R.<sup>12</sup>.

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### Abstract:

Mixed reality is an emerging technology that combines some elements of both virtual and augmented reality by bringing digital objects into the real world and in real time. Its quick rise in education, healthcare, and entertainment makes it fascinating. The study utilizes the use of mixed reality approach for improving the servicing process of landing gear systems in WCC Aerotech College. By combining real-world physical interactions with digital overlays, the highly proposed MR framework aims to simplify complex maintenance tasks, improve technician training, and reduce human error. Such a proposition is an avenue through which unique channels can be opened for possible engagements and learning. The primary aim of this project is to develop Mixed Reality application for safety and cost-effective learning of landing gear servicing among instructors and students at WCC Aerotech College. In aviation, Mixed Reality technology can also be deployed as a training simulator, allowing the aircraft maintenance technology students to study and test the aircraft components virtually and in an immersive environment. However, while these capabilities have merit, some deficiencies exist in terms of Mixed Reality Approach training, as the realm of fiction and reality do not adapt for the same, hence, the number of instances where the user may not be able to perform at the same level in actual scenarios.

**Keyword:** *Mixed Reality (MR), Virtual Reality (VR); Landing Gear Servicing; Aircraft Maintenance, Tecnam P2006T ; Aviation Training ; Immersive Learning, Simulation Based Training, Educational Technology; TPACK Framework; WCC Aeronautical and Technological College; Safety in Training; Interactive Learning; Maintenance Simulation; MR Application Development*



## JACK-HESIVE: JACKFRUIT SAP MACHINE FOR PLANT-BASED ADHESIVE PRODUCTION

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### Abstract

Through the use of a specially made extraction machine, this study explores the design and creation of an adhesive from jackfruit sap. The primary goal is to create a strong natural glue that may be used as a sustainable alternative to synthetic adhesives. The device facilitates the three-step extraction, heating, and blending of jackfruit sap. The initial step involves extracting the jackfruit's raw juice and sap. The sap is heated in the second stage to activate its adhesive qualities and eliminate surplus moisture. Finally, to improve the uniformity and bond, several adhesives and additives are included during the mixing process. The produced glue was put through a number of mechanical strength tests, including peel, shear, and tensile strength tests, in order to evaluate its performance. In order to evaluate the glue's performance with that of commercial glues, these tests were designed to replicate common stress scenarios. According to initial results, jackfruit adhesive has a high degree of durability and bonding power, making it a viable green solution for use in both the home and commercial sectors. This study's distinctiveness and environmental sustainability make it valuable. The study offers a renewable resource-based method for producing adhesives while reducing waste by using fruit waste. Furthermore, continuous production is made possible by the invention of a particular extraction machine, opening the door for future economic viability. The plant-based adhesive that can stick to a variety of surfaces was the result of the researchers' trial-and-error work. The adhesive was supposed to adhere to paper, but after much trial and error, they discovered that the plant-based adhesive works well on plywood, paper, and wood. cardboard, and upholstery. The researchers developed plant-based glue that can replace commercial adhesives that include several chemicals that are bad for the environment and users. According to the study, the glue can stick to a variety of surfaces. Paper takes five to ten minutes to dry, cardboard takes fifteen to twenty minutes, and folders take twenty minutes. Plywood takes thirty to forty-five minutes to dry, and wood takes two hours to fully cure. Upholstery or foam can take anywhere from forty-five to an hour today and one to two hours to fully cure. In order to construct the product and successfully create a plant-based adhesive, the researchers employed a variety of additives.

**Keywords:** *Jackfruit sap adhesive; Plant-based glue; Natural adhesive production; Eco friendly alternative; Adhesive performance testing*



## AEROMACH: BATTERY TEST APP FOR AERONAUTICAL ENGINEERING

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### Abstract:

Board exam preparation and academic assessment are critical components in aeronautical engineering education, where both theoretical knowledge and test-taking proficiency are required for success. This study addresses the lack of accessible, effective, and realistic assessment tools for Aeronautical Engineering students, particularly those who do not have reliable internet connection. The major goal is to design, create, and analyze an offline website that mimics the Aeronautical Engineering board examination for graduating students and offers battery examinations to WCC Aeronautical and Technological College's second and third-year students. To precisely simulate real exam settings, the system includes features like randomized questions, timed exams, and computerized scoring. Performance tracking enables students to track their progress, identify areas for development, and become accustomed with board-style questioning. The website was built with standard web technologies and deployed for offline use, guaranteeing accessibility even in low-resource contexts. Usability testing was carried out with 60 student participants from various year levels. The findings revealed excellent user satisfaction with system operation, simplicity of navigation, and perceived utility. A statistical study of pre- and post-test data revealed a significant improvement in scores, implying that frequent usage of the system improves readiness and retention of key concepts. This study shows that a well-designed offline exam simulation system can be a useful academic tool for increasing licensing exam performance and confidence. Its offline functionality tackles the digital divide, and its modular architecture allows for future improvements such as question database growth, analytics integration, and subject-specific customization. Other educational institutions with the goal of improving board exam readiness in engineering and other technical subjects could benefit from the method.

**Keyword:** *Aeronautical Engineering Education; Board Exam Preparation; Offline Exam Simulation System; Academic Assessment; Performance Tracking*



## EYE-FUTURE: DEVELOPMENT OF DIGITAL SUSTAINABILITY PODIUM APPLICATION

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Antolin, Vough Gabriel A.<sup>4</sup>, Dela Cruz, Guilorvi P.<sup>5</sup>, Requilman, Lemuel R.<sup>6</sup>,  
Estrada, Kevin Ray V.<sup>7</sup>, Ragos, Mark James A., Arevalo, Ashley M.<sup>8</sup>,  
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### Abstract:

The study aims to develop a podium application called Eye-Future, designed to help students, faculty, and staff understand the United Nations' Sustainable Development Goals. Many students in WCC Aeronautical and Technological College Binalonan are either unaware of the SDGs or have difficulty seeing how these goals relate to their daily lives and work. Lectures and workshops are traditional methods that frequently fail to gain the audience's attention because of their boring nature. The Eye-Future app is expected to address this problem by providing an easy and interactive platform through simple explanations, quizzes, and real-life examples that can make learning about SDGs more engaging and more relevant. Through better understanding and active participation, the project hopes to achieve the promotion of sustainability within educational institutions and inspire more individuals to contribute to a better world.

**Keyword:** Sustainable development goals(SDGs), Podium application, Interactive platform, Student Engagement, Sustainability.



## TRI-D TOUCH RESPONSE INTERACTIVE DISPLAY: DEVELOPMENT OF AN INTERACTIVE 3D MODEL OF TECNAM P2006T

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### Abstract:

The Tecnam P2006T aircraft features an intricate design that poses challenges for traditional theoretical and practical learning methods. TRI-D is a software and hardware project developed to bridge the gap between these learning approaches by providing an immersive 3D interactive experience. The objectives encompassed the creation of an interactive experience that allows students to navigate an accurate 3D model of the Tecnam freely. Additionally, the project involved designing a stand to support the projector necessary for this interactive experience. Software development was integral, featuring functions that display the 3D model while providing descriptions of each aircraft component selected by the user. Furthermore, it included a quiz-based assessment to evaluate users' understanding of the functions of the displayed components. The TRI-D system operates on a client-server architecture, providing cross-platform access through a website and a downloadable Windows application. It features a detailed 3D model of the Tecnam aircraft, created using Blender and rendered in real-time with the 3JS library. The front-end is built with WordPress, utilizing PHP, HTML, and CSS, while the desktop interface uses Electron. The system is hosted on a VPS with AlmaLinux, equipped with MariaDB for its database needs. Extensive testing, including unit, integration, and system testing, was conducted to ensure compliance with ISO standards, focusing on performance and usability. User feedback showed high satisfaction, particularly in usability, indicating that the system meets its design goals effectively. The TRI-D evaluation was conducted according to the ISO square evaluation form, focusing on criteria such as functional suitability, performance efficiency, compatibility, usability, reliability, maintainability, and portability. To assess the software's compliance with ISO standards and user satisfaction, a convenience sample of 188 avionics students participated in a trial. Participants rated the software across seven quality attributes using a Likert scale. The TRI-D Touch Response Interactive Display software achieved mean scores ranging from 3.41 to 3.77 across the evaluated quality attributes. Over 90% of respondents agreed or strongly agreed in each category, with usability receiving the highest average score of 3.66, indicating a positive user experience and robust performance. The results demonstrate that TRI-D effectively enhances the learning experience for avionics students, meeting ISO standards and providing a highly satisfactory interactive learning tool. This project highlights the potential of immersive 3D technology in aviation education.

**Keyword:** 3D Modeling, Avionics Training; Tecnam P2006T; Technology-Enhanced Learning; Aviation Education



## DEVELOPMENT OF VRTEC VIRTUAL REALITY SIMULATION ON FLIGHT PROCEDURES: APPLICATION IN TECNAM P2006T AIRCRAFT

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### Abstract:

This study aimed to design and develop VRTEc, a Virtual Reality (VR) simulation on pre-flight and post-flight operating procedures of the Tecnam P2006T aircraft. The primary goal was to deliver an interactive training platform simulating real flight procedures for aviation electronics students. The objectives involved designing an accurate 3D model of the Tecnam P2006T, integrating realistic checklists, and enabling interactive controls using Unity and Blender. The methodology involved importing and cleaning a game-sourced 3D model, customizing object rotations and pivot points, aligning axes with Unity's coordinate system, and incorporating the XR Interaction Toolkit for VR compatibility using the Meta Quest 2 headset. The development process included setting up object colliders, developing story sequences, and scripting logical interactions using C#. The findings depict that the VRTEc effectively replicated essential flight procedures with high visual and functionality. Users were able to perform thorough aircraft inspections and replicate operational tasks in a virtual hangar. A survey based on ISO/IEC 25010 standards was carried out among AET students, which provided positive usability, engagement and feedback. Major challenges encountered included visual strain for users with poor eyesight, motion sickness during prolonged use, and occasional software bugs. Despite these challenges, VRTEc proved to be an invaluable tool that improves flight training and enhance procedural knowledge of the students. The system is already functional and available for incorporation into training courses. With ongoing improvements based on user experience and technological developments, VRTEc has great potential to complement or even substitute traditional training techniques in aviation education.

**Keyword:** *Virtual Reality (VR) Simulation; Flight Procedures Training; Tecnam P2006T Aircraft; aircraft simulation; Pre-flight Procedure and Post-flight Operations*



## PET PLASTIC BOTTLES AS 3D-PRINTING FILAMENT FOR DEVELOPMENT OF SUSTAINABLE HONEYCOMB CORE IN AIRCRAFT FLOOR PANELS

Cabradilla, Angel Norelie B., Condez, Maxine Alessandra B., De Vera, Luis Reden D., Juguilon, Nathaniel B., Lachica, Frenz Rolan S., Manalang, Judelle Jade O., Sisor, Jeric Adams B.

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### Abstract

This study examines the applicability of recycled PET (rPET) plastic bottle as a 3D-Printing filament in designing honeycomb core through the process of filament extrusion, following a composite fabrication in developing sustainable honeycomb core for aircraft floor panels. This research utilizes the Design Science Research Methodology (DSRM) to further emphasize the innovation and development of the rPET honeycomb cores that will be used to fabricate a sandwich composite, being a vital sustainable alternative to the Nomex sandwich composites that is limited to their structural, water, and thermal characteristics.. The produced sandwich composites, both rPET and Nomex composites, are then sent to their respective testing centers for structural and physicochemical properties.

**Keyword:** *Recycled PET, 3D-Printing, Filament Extrusion, Composite Fabrication, Design Science Research Methodology, Structural, Physicochemical Properties*



## BAMBOO-BASED COMPOSITE PRODUCTION OF BAMBUSA BLUMEANA (KAWAYAN TINIK) AS ROOFING PANEL FOR AIRCRAFT HANGARS

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### Abstract:

This study evaluates the mechanical performance and sustainability of bamboo composites as cost-effective roofing materials for aviation hangars. Three processing methods—standard treatment (P1), extended drying (P2), and alkaline treatment (P3)—were tested to determine their impact on tensile strength, flexural strength, and water absorption. Specimens were fabricated following ASTM D3039 and D790 standards and tested using a Micro Universal Testing Machine. The standard bamboo composite (P1) demonstrated superior mechanical properties with an average tensile strength of 29.63 MPa and a maximum of 34.83 MPa (Z-score 0.79). Tensile testing of P1 specimens revealed variation: P1-T1 recorded 22.28 MPa (Z-score -1.12), indicating weaker performance below the mean; P1-T2 and P1-T3 showed consistent strengths of 31.79 MPa (Z-score 0.33) and 34.83 MPa (Z-score 0.79), respectively, within one standard deviation. Flexural strength testing showed P1-F1 as the strongest at 57.89 MPa (Z-score 1.01), P1-F3 steady at 45.33 MPa (Z-score 0.35), and P1-F2 the weakest at 13.17 MPa (Z score -1.36). Despite some variability, Process 1 demonstrated reliable and promising results. Water absorption tests revealed that P1 and P2 composites absorbed 3 grams after 24 hours, while P3 absorbed none, suggesting decreased porosity due to alkaline treatment. Cost analysis showed bamboo composites to be 27.2% more economical than fiberglass with comparable specifications. Failure mode analysis indicated P1 specimens experienced controlled fractures with strong fiber-resin bonding, while P3 showed brittle fractures and fiber separation, implying compromised integrity. These findings confirm that the standard processing method produces bamboo composites with optimal mechanical strength, durability, and water resistance, positioning them as sustainable alternatives for aviation roofing. This research supports the advancement of eco-friendly aviation infrastructure and aligns Sustainable Development Goals 9 (Industry, Innovation, and Infrastructure), 11 (Sustainable Cities and Communities), and 1 (No Poverty) by promoting sustainable, locally sourced materials with economic benefits.

**Keywords:** bamboo composite; tensile strength; flexural strength; sustainable roofing; aviation hangars; water absorption; mechanical testing



## DESIGN AND OPTIMIZATION OF A PORTABLE COOLING SYSTEM USING PELTIER MODULE AND TWO STAGE HEAT EXCHANGER

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### Abstract:

The Philippines' scorching summers are driving up demand for chilled goods, thus market merchants need to have an effective and portable refrigeration system. Despite being widely used, traditional ice boxes have drawbacks including ice costs, labor-intensive ice replacement, and the chiller's total weight. This study investigates the design and improvement of a portable cooling system that combines a two-stage heat exchanger with a Peltier module. The objective of the suggested system is to offer an affordable and sustainable replacement for traditional ice-based coolers. The study compares the portable cooling system's thermal performance, power consumption, and coefficient of performance (COP) to those of a conventional ice box. Findings show that the portable system is a good substitute for refrigerating perishable commodities in a variety of environments, particularly in isolated locations with limited access to refrigeration, due to its greater coefficient of performance, lower operating costs, and superior cooling efficiency.

**Keywords:** Heat Exchanger, Peltier Device, Portable Chiller



## DEVELOPMENT AND EVALUATION OF THE PALOSEBO QUIZ AND ADVENTURE GAME: A DIGITAL APPROACH TO CULTURAL PRESERVATION

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### Abstract:

This thesis presents the development and evaluation of the Palosebo Quiz and Adventure Game, a mobile application designed to promote and preserve the traditional Filipino game Palosebo while integrating general knowledge about local cultures and traditions through interactive quizzes. Developed using the Unity game engine and programmed in C# via Visual Studio, the game aims to enhance cultural appreciation through digital engagement. With a focus on user perception and satisfaction, the study assessed the Palosebo Quiz and Adventure Game through feedback from 60 participants, of whom 81.67% were aged 18-22. Survey results indicate a positive reception, with 60% of respondents very satisfied in the overall user experience. The positive feedback underscores the game's potential to promote cultural heritage through modern technology, contributing to Sustainable Development Goal (SDG) 4: Quality Education by providing an engaging, educational platform for learning about Filipino traditions. Additionally, the study aligns with SDG 11: Sustainable Cities and Communities, fostering cultural sustainability by preserving traditional games in a digital format. The findings of this research may guide future improvements and further development of the application, enhancing user experience and satisfaction. By leveraging technology, the Palosebo Quiz and Adventure Game serves as an innovative tool for cultural preservation, ensuring that traditional Filipino games remain relevant and accessible to future generations.

**Keywords:** traditional Filipino games, game development, C#, Visual Studio, cultural preservation, digital learning



## Development and Evaluation of Ultrasonic Glasses as Assistive Technology for Individuals with Visual Impairment

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### Abstract:

Visual impairment significantly affects an individual's ability to navigate and interact with their surroundings independently. In response to this challenge, ultrasonic glasses have emerged as an innovative assistive technology designed to enhance mobility and accessibility for individuals with visual impairment. This study presents the development and evaluation of ultrasonic glasses, focusing on their acceptability, accuracy, and effectiveness in aiding navigation and object detection. The study involved 100 extensive trials to assess the performance of ultrasonic glasses in detecting obstacles and improving spatial awareness. Results indicate that the device effectively enhances independent mobility by providing real-time feedback on environmental obstacles. Participants found the glasses to be a valuable aid in navigating unfamiliar spaces, reducing the risk of collisions, and increasing their overall confidence in movement. Additionally, recommendations for further refinement were explored, emphasizing improvements in aesthetic design, comfort, and the integration of advanced sensor technologies to optimize user experience. The findings underscore the potential of ultrasonic glasses to serve as a reliable assistive device, promoting greater independence for individuals with visual impairment. By leveraging technological advancements, these glasses contribute to Sustainable Development Goal (SDG) 3: Good Health and Well-being by improving the quality of life for visually impaired individuals. Furthermore, they align with SDG 10: Reduced Inequalities, fostering inclusivity by enhancing accessibility and mobility solutions. Overall, ultrasonic glasses represent a transformative innovation in assistive technology, offering a cost-effective, efficient, and user-friendly solution to address the challenges faced by individuals with visual impairment. This study highlights the importance of continuous research and development to refine assistive devices, ensuring they meet the evolving needs of users and contribute to a more inclusive society.

**Keywords:** *assistive technology, aiding navigation, visual impairment, ultrasonic technology*



## ANALYZING ENVIRONMENTAL AWARENESS ON MICROPLASTIC POLLUTION AND BATTERY DISPOSAL: DEVELOPING AN INFOGRAPHIC-BASED EDUCATIONAL TOOL FOR WASTE MANAGEMENT LITERACY

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### Abstract

Environmental sustainability and public health require comprehensive education to address pressing waste management concerns, particularly microplastic pollution and battery disposal. Despite increasing awareness, knowledge gaps and misconceptions persist, hindering effective waste reduction and responsible disposal practices. This study aims to examine environmental awareness levels among students and faculty members and develop targeted instructional materials to enhance waste management literacy.

A descriptive comparative analysis was conducted at Urdaneta City University, assessing students' and faculty members' knowledge, misconceptions, and behavioral practices concerning microplastic pollution and battery disposal. Using structured surveys and statistical analyses (t-tests, ANOVA), the study revealed moderate awareness across both groups, with faculty demonstrating slightly higher awareness than students. Notably, demographic factors such as age, year level, and field of specialization significantly influenced awareness, particularly in battery disposal. To bridge these gaps, the study developed infographic-based Information, Education, and Communication (IEC) materials, specifically leaflets and posters. These materials employ visual storytelling and environmental communication strategies to enhance comprehension, support knowledge retention, and encourage responsible waste disposal practices. The microplastic pollution IEC materials emphasize pollution sources, health risks, and mitigation strategies, while the battery disposal IEC materials focus on proper recycling methods, charge status, corrosion, and packaging considerations. Findings contribute to social studies by analyzing sociocultural variations in environmental awareness and fostering civic engagement in sustainability efforts. Additionally, this study aligns with educational technology and the arts and humanities by leveraging graphic design, visual learning, and environmental advocacy to improve waste management literacy. The IEC materials developed are recommended for academic curricula, community outreach programs, and institutional sustainability initiatives to promote long-term environmental responsibility among students and educators.

**Keywords:** *Environmental Awareness, Infographic-Based Learning, Educational Technology, Sustainability, Waste Management, Environmental Communication*



## THERMOCHEMICAL IMPLICATIONS AND COMBUSTION EFFECTIVENESS OF HYDROGEN-HYDROGEN-OXYGEN (HHO) GAS MIXTURES IN INTERNAL COMBUSTION ENGINES

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### Abstract:

The escalating demand for energy-efficient, environmentally benign automotive solutions has intensified the exploration of alternative fuels, particularly within the context of internal combustion engines (ICEs). Among these alternatives, hydrogen-hydrogen-oxygen (HHO) gas—produced via on-board electrolysis—has emerged as a promising supplement or replacement for conventional hydrocarbon fuels. This paper investigates the thermodynamic and combustion-specific characteristics of HHO gas mixtures when integrated into ICEs, with a focus on their heat contribution and resultant effects on engine efficiency, torque output, and emissions profile. Unlike traditional fuels, HHO exhibits a significantly higher flame velocity and enthalpy of combustion, allowing for rapid ignition, near-complete oxidation, and minimal residual pollutants. The high heat content of HHO enables faster thermal response during the power stroke, producing a sharper pressure rise and improved mechanical work conversion. Through empirical bench tests and thermal simulations, this study quantitatively evaluates the performance differential between gasoline-only engines and HHO-augmented systems. Results demonstrate that the incorporation of HHO can reduce fuel consumption by up to 30% under controlled conditions, while concurrently enhancing torque and reducing carbon monoxide (CO), unburned hydrocarbons (UHC), and nitrogen oxides (NO<sub>x</sub>) emissions. From a physics perspective, this thermal efficiency gain is attributed to more efficient molecular bond energy utilization and decreased ignition delay. In addition to experimental data, theoretical combustion modeling elucidates the role of HHO in enhancing volumetric efficiency and maintaining stoichiometric balance with reduced knock tendencies. Environmental implications are also considered; by substituting part of the fossil fuel with clean-burning HHO, greenhouse gas emissions are significantly curtailed, offering a feasible pathway to carbon-neutral vehicular systems. Despite limitations such as energy costs of electrolysis and storage constraints, the data supports the hypothesis that the thermal advantages of HHO can be harnessed for meaningful improvements in engine performance and sustainability. This paper concludes by proposing hybrid HHO-gasoline engine architectures and discusses further integration with renewable-powered electrolysis systems for next-generation eco-mobility solutions.

**Keywords:** HHO Gas (Hydrogen-Hydrogen-Oxygen Gas), Combustion Efficiency, Thermal Efficiency, Flame Speed, Emission Reduction



## EVALUATING THE VALIDITY AND PREDICTIVE POWER OF COLLEGE ADMISSION TESTS FOR ELECTRONICS ENGINEERING AND ARCHITECTURE PROGRAMS

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### Abstract

The application of standardized testing for college admissions has become a pillar of the higher education system, especially in the United States. The institutions count on tests such as the Scholastic Aptitude Test (SAT) and American College Testing (ACT) to offer standardized measurements for the assessment of future students from varying educational backgrounds. Although these tests are ubiquitous elements of the admissions process, their validity in forecasting academic achievement is quite variable across different fields and institutional settings. Engineering and architecture majors are especially demanding fields for student selection because these disciplines require specialized combinations of technical competence, innovative problem-solving, and design thinking that may not be adequately reflected in general standardized tests. The predictive validity of admissions tests is particularly important in technical disciplines where student retention and achievement are so heavily reliant on core mathematical and analytical abilities. Engineering majors often have higher rates of attrition than other degrees, so proper selection processes are even more critical. Based on recent research, the match between test scores and college success has been found to be stronger in STEM fields than in humanities or social sciences, yet considerable questions persist regarding the nature of these correlations in engineering and architecture programs. Those standard tests developed to test other areas of academic ability were not created with these technical fields in mind, thus perhaps mitigating their ability to select students best suited to technically demanding curricula. The opportunity and financial costs of incorrect student selection to engineering or architecture programs are high for individuals and institutions. Such students might underperform academically, suffer from psychological distress, and end up switching majors or dropping out – a high investment of time and resources with no commensurate returns. Institutions also encounter challenges when admission processes do not pick students with the greatest potential for achievement in technical studies, and as a consequence, they risk overlooking capable students who could do well despite less favorable standardized test scores. Such stakes make critical assessment of predictive validity in admission processes uniquely crafted for engineering and architecture environments even more critical. This research addresses these issues by investigating how college entrance exam scores predict academic success in engineering and architecture degrees, with a specific focus on foundational technical and design courses. Through an analysis of correlation patterns across various components of standardized tests and particular coursework, we hope to gain a more sophisticated understanding of how admissions criteria are connected to student outcomes within these specialized disciplines. Our results provide practical guidance for admissions offices who wish to maximize selection processes without sacrificing diversity and equity in technical fields.

**Keywords:** *validity, predictive capability, Scholastic Assessment Test (SAT), strenuous quantitative, Demographic variables*



## ENHANCING DOCUMENT SECURITY THROUGH AN ELECTRONIC MANAGEMENT SYSTEM FOR A PRIVATE HIGHER EDUCATIONAL INSTITUTION

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### Abstract:

In today's digital age, efficient document management systems are essential for organizations to streamline operations and ensure data security. This capstone project, conducted at Lyceum-Northwestern University within the Academic Affairs Office, supports Sustainable Development Goal 9 (Industry, Innovation, and Infrastructure) by fostering a digital infrastructure that enhances institutional efficiency and embraces technological innovation. The project focused on transitioning from a manual to a digital document processing system to improve the efficiency, security, and reliability of managing academic documents. The Enhanced Document Management System (EDMS) digitizes workflows for document submission, approval, and archiving, thereby significantly reducing processing time and minimizing human error. This aligns with SDG 12 (Responsible Consumption and Production) by promoting the efficient use of resources—such as reducing paper usage and physical storage needs—and encouraging sustainable institutional practices. Feature Driven Development (FDD) was used as the project methodology, ensuring that key system features were guided by user needs and stakeholder priorities. The researcher employed interviews, observations, and surveys to gather user requirements, ensuring the system's design responded directly to actual workflow challenges. To evaluate the system's effectiveness, the System Usability Scale (SUS) was utilized. The EDMS received an exceptional SUS score of 98.22, indicating a high level of user satisfaction and system usability. These results affirm the success of the EDMS in achieving its goals and demonstrate its potential for broader implementation within the university.

**Keywords:** Document Management System, Secure Management System, Secure Document Management, Higher Education Institution, Application Software



## SMART IOT SURVEILLANCE: ENHANCING SECURITY WITH REAL-TIME COMPONENT REMOVAL AND INTRUSION DETECTION IN COMPUTER LABORATORIES

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### **Abstract:**

This study developed a Smart Internet of Things (IoT) Surveillance System aimed at strengthening computer laboratory security by detecting the unauthorized removal of critical hardware components and identifying potential intrusions in real time. By integrating a network-connected software application into laboratory computers, the system monitors hardware activities and provides automated alerts via SMS and email. Key features include component removal/addition detection, system logs, and real-time notifications, all supported by cloud-based storage. The project focused on monitoring components such as RAM, SSDs, HDDs, CPUs, GPUs, and peripheral USB devices. The system's effectiveness was evaluated using both user feedback and ISO 25010 software quality standards. Results showed significant improvements in hardware monitoring and user confidence in system reliability and security.

**Keywords:** *Smart IoT Surveillance, Intrusion Detection System, Real-Time Component Monitoring, Computer Laboratory Security and ISO 25010 Software Evaluation*



## ASSESSMENT AND UPGRADING OF ELECTRICAL SYSTEM OF PHILIPPINE COLLEGE OF SCIENCE AND TECHNOLOGY, NALSIAN, CALASIAO, PANGASINAN

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### Abstract

As educational institutions expand, their infrastructures must evolve to support increasing academic and operational needs. This study focused on the Philippine College of Science and Technology (PHILCST) in Nalsian, Calasiao, Pangasinan, where rising student enrollment and the construction of additional buildings have placed significant pressure on the campus electrical system. The project sought to evaluate the existing power infrastructure, identify its limitations, and propose an upgrade plan that aligns with both current demands and future growth. Site inspections, load inventories, and system analysis was conducted, supported by ETAP software simulations and guided by the Philippine Electrical Code, IEEE standards, and NEC provisions. Findings revealed that several components of the existing system were already strained such as transformers were operating at or beyond their intended capacity, the generator was undersized for emergency power requirements, and outdated grounding contributed to safety risks. Voltage drops in feeder lines further indicated inefficiencies that could compromise both energy reliability and user safety. To address these challenges, the study recommended upgrading to higher-capacity pad-mounted transformers, replacing the generator with a unit capable of handling the entire campus load, and redesigning the grounding system to ensure compliance and protection. The proposed improvements are expected to enhance safety, reduce outages, optimize load distribution, and support sustainable campus development. Beyond the technical solutions, the study highlights the importance of integrating electrical system planning into institutional strategies and budget priorities, ensuring that infrastructure development keeps pace with academic expansion. In essence, this work demonstrates how data-driven assessments and forward-looking planning can create a safer, more efficient, and future-ready learning environment. By investing in reliable power systems, PHILCST not only safeguards its present operations but also strengthens its capacity to support long-term educational excellence.

**Keyword:** *electrical system assessment; campus infrastructure; power load computation; transformer upgrade; sustainable learning environment*



## DESIGN AND IMPLEMENTATION OF VR LAUNCHER: A REPOSITORY OF EXISTING VR TRAINING TOOL OF AMT DEPARTMENT

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### Abstract

The aviation industry requires hands-on training for Aircraft Maintenance Technicians (AMTs) to ensure safety and efficiency in the industry. This project, Design and Implementation of VR Launcher: A Repository of Existing VR Training Tools of AMT Department, addresses the disorganized use of VR training resources by developing a centralized platform for managing and deploying VR training tools of AMT department. The VR Launcher combines VR tools for marshalling, servicing, and troubleshooting into a single VR application improving accessibility for instructors and students. Key features include a streamlined interface, admin log-in, student ID QR code log in, post-assessment modules, and compatibility with existing VR equipment. By offering an immersive and risk-free learning environment, the VR Launcher enhances technical proficiency while reducing the dangers and costs associated with real-world training. The system maximizes the use of current VR tools, addressing gaps in training efficiency and resource management. This study contributes to the advancement of VR-based training solutions, fostering enhanced learning experiences and improved competency in aviation maintenance technology.

**Keyword:** *Virtual Reality; VR Launcher; VR Training; SDG 4: Quality Education; SDG 9: Industry, Innovation, and Infrastructure; SDG 12: Responsible Consumption and Production*



## SKYFRAME 172: DEVELOPMENT OF EDUCATIONAL RESOURCES USING AN AUGMENTED REALITY APPROACH FOR THE WING STRUCTURE AND FUEL SYSTEM OF THE CESSNA 172

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### Abstract

Augmented Reality (AR) is increasingly transforming educational environments across various fields, particularly in aviation. In Aircraft Maintenance Technology (AMT), understanding intricate systems like the Cessna 172's wing structure and fuel system can be challenging due to several limitations. These include limited access to actual aircraft, outdated instructional manuals, and a lack of interactive or practical learning materials. To address these constraints, researchers developed SkyFrame 172, an AR-based educational tool that simulates the internal wing structure and fuel system of the Cessna 172. This innovative tool offers an immersive, interactive, and easily accessible digital learning experience to enhance theoretical knowledge and hands-on technical understanding. The study aimed to achieve four main objectives: (1) create an AR application that accurately visualizes the Cessna 172's wing structure and fuel system, (2) evaluate the application's usability and effectiveness in improving learning outcomes, (3) Ensure the application remains stable, adaptable, and capable of receiving future updates for continued enhancement, and (4) assess the potential impact of AR on aviation maintenance training. A descriptive-developmental research design was employed, purposive sampling involving AMT students and faculty members from WCC Aeronautical and Technological College. Data collection was conducted through surveys using a Likert scale, and results were analyzed quantitatively to evaluate usability dimensions such as functionality, performance, compatibility, and user engagement. The findings demonstrated that SkyFrame 172 significantly improved students' understanding of aircraft systems. The application received high usability ratings, particularly in functionality and user engagement. Participants reported that the system provided a clear, interactive, and practical alternative to traditional methods of instruction. It bridged the gap between textbook knowledge and hands-on practice, which is often difficult due to limited physical resources. This research advances aviation education by offering a scalable, innovative, and effective AR solution for AMT training. SkyFrame 172 enhances learning retention, increases student engagement, and reduces dependence on physical aircraft, ultimately helping to develop more skilled, confident, and industry-ready aviation maintenance professionals.

**Keywords:** Augmented Reality; Aviation Maintenance Training; Cessna 172; Educational Technology; 3D Visualization; Digital learning experience



## **ROBINSON R44: ENHANCING HELICOPTER MAINTENANCE TRAINING THROUGH VIRTUAL REALITY WITH GENERATIVE AI FEATURES AND APPLICATION**

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Bachelor of Science in Aircraft Maintenance Technology  
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### **Abstract**

Researchers from WCC ATC College Binalonan have created a VR-based helicopter servicing training program for students and instructors. The program avails the replica of WCC Airport to prevent accidents and incidents from taking place inside the apron. It uses the Robinson 44 aircraft; thus, it can only be run with high system unit specifications. The VR application is supposed to support an immersive virtual environment that can simulate ground operations training that includes pre-flight and post flight operations, refueling and Transmission familiarization. This training program offers a risk-free alternative to real training and minimizes the risks of failure that can lead to accidents. The application only deals with helicopter basic knowledge and inspection, VR technology can be put into use in aviation through training simulation, which allows students to be familiarized with complex parts and tasks. Nonetheless, the virtual world and the real world are two completely different worlds; hence, users cannot perform at their best in a real-world scenario. In practice, other safety maintenance tasks of students, instructors, and other aviation technicians can be undertaken using the updated and expanded VR-based application. Overall, the study investigates virtual reality technology's possible benefits and applications in aircraft helicopter maintenance training.

**Keyword:** *Virtual Reality; instructional material; Preflight; Post flight, Refueling; Helicopter transmission; Generative AI; Robinson R44*

# **HEALTH TECHNOLOGY**

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## **HEALTH TECHNOLOGY TABLE OF CONTENTS**

Title	Page No.
Healthy Work-Life Balance Among Teachers <i>Lourdes M. Trajano, et.al</i>	72
Challenges And Resilience: How Parents Navigate A Child's Cancer Diagnosis <i>Kristel Dayami Alcantara, et.al</i>	73
Somnolence And Its Effect on Nursing Students' Academic Performance at Baguio Central University <i>Wilma Jane A Paat, et.al</i>	74
A Case Study of the Dentists' Roles in the Multidisciplinary Management Cleft Care <i>Wenny O. Villegas</i>	75
"Kwento ni Rosario" Retold in Teaching Social Determinants of Health: Video based Learning as a Pedagogical Tool in Community Health Nursing I <i>Kevin L. de Vera</i>	76
Voices of Resilience: Understanding Coping Strategies of Student Nurses In Stressful Clinical Environment <i>Ederlyn Shane T. Dupitas, et.al</i>	77
Knowledge and Attitude of Dentists on the Use of social media in Teledentistry <i>Ma. Theresa Ann T. Fernandez, et.al</i>	78
Effectiveness of the Community Teaching Programs on Educating Mothers on Under-Five Immunization <i>Versitalyn, R. Manuel</i>	79
AIMS (Anatomy Interactive Mobile Simulation): Enhancing Medical Education Through Mobile 3d Visualization And Simulation <i>E.J. Castillo, et.al</i>	80
Optimizing Maternal and Child Health Through AI: A Case Study on MOMCHAT Pilot Implementation <i>Kevin L. de Vera</i>	81
Identification of Bacterial Community and Detection Of Microplastics in Surface Water and Biofilm Matrices from Meycauayan River, Bulacan <i>Aliah Jen P. Lomibao</i>	82
The Role Of Traditional Healing Practices In Healthcare: A Study In Barangay San Miguel, Calasiao, Pangasinan <i>Nichole U. Casilang</i>	83
Lived Experiences of Individuals with Type 2 Diabetes in Santa Maria, San Jacinto, Pangasinan, on the Use of Serpentina Leaves as Alternative Medicine <i>A.M. Rosario</i>	84
Navigating Adversities: The Relationship between Resilience and Well-Being among Underprivileged Families in Barangay. Lucao Dagupan City <i>Julienne Mae F. Garcia</i>	85
Effectiveness of Return Demonstration and Clinical Rotation in Developing Maternal and Child Nursing Competencies Among Student Nurses <i>Jane Marffy C. Llamas</i>	86
Community Health Nursing Program Management in the Higher Education Institutions <i>Prof. Aissa D. Pater, et.al</i>	87
Optimizing Patient Care at World Citi Medical Center: The Role of a Comprehensive Mobile Health App with Blockchain Technology <i>Sean Dylan B. Arroyo, et.al</i>	88

## HEALTHY WORK-LIFE BALANCE AMONG TEACHERS

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### Abstract

This study explored the healthy work-life balance of teachers at Baguio Central University. The respondents included 82 teachers from the elementary, junior high school, senior high school, and undergraduate levels. The researchers employed a descriptive research design and survey method. The findings indicated that the frequency of use of healthy work-life balance strategies among teachers was often, meaning these strategies were regularly used but not at all times. The strategies were found to be moderately effective, suggesting they provided some benefit but with room for improvement, while the degree of seriousness of the challenges encountered was moderately serious, reflecting that the issues faced were somewhat significant. The study concluded that teachers are generally able to apply healthy work-life balance strategies to maintain their physical, emotional, and mental well-being. They recognize the importance of these strategies in managing their careers and personal lives, selecting approaches based on circumstances, job requirements, and personal preferences. However, teachers also intermittently faced challenges in maintaining a healthy work-life balance due to salary deficiencies, high workloads, job demands, and poor planning. This study aligns with SDG 3: Good Health and Well-being, particularly Target 3.4, which aims to promote mental health and well-being, and Indicator 3.4.2, which focuses on reducing the impact of stress and burnout in the workplace, thereby supporting the overall well-being of educators.

**Keywords:** *tasks, priority, stress, productivity, teaching, learning, goals, career, personal life, family, self-care.*

## CHALLENGES AND RESILIENCE: HOW PARENTS NAVIGATE A CHILD’S CANCER DIAGNOSIS

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### Abstract

This study explored the multifaceted challenges faced by parents whose children have been diagnosed with cancer at Baguio General Hospital. Focusing on four critical areas—emotional impact, coping strategies, financial strain, and available support systems—the research aimed to capture the raw and deeply personal experiences of these parents. Using a qualitative research design, the researchers conducted direct interviews and focus group discussions, revealing that parents often grapple with intense emotional burdens, including shock, anxiety, helplessness, and depression. These emotions are often heightened by the uncertainty of treatment outcomes and the long-term effects on their child’s quality of life. Coping mechanisms varied, with some parents finding solace in faith, spirituality, or support from extended family and community networks. However, many families struggled with isolation due to the absence of such support. Financial strain was a consistent theme, as treatment costs frequently surpassed their financial capacity, especially for those without stable income or insurance coverage. Despite the presence of hospital-based social services and charitable organizations, these support systems often proved insufficient in addressing the broader, long-term needs of affected families. This study highlights the critical need for more comprehensive, accessible, and sustainable support mechanisms to assist parents in navigating the physical, emotional, and financial complexities of childhood cancer care. This research aligns with United Nations Sustainable Development Goal (SDG) 3: Good Health and Well-being, specifically Target 3.4, which aims to reduce premature mortality and promote mental health and well-being. It also supports Indicator 3.4.2, focusing on reducing the prevalence of mental health disorders by 2030, recognizing the importance of holistic care for both patients and their families.

**Keywords:** *psycho-social impact, emotional impact, coping mechanisms, financial challenges, support systems, childhood cancer.*

## **SOMNOLENCE AND ITS EFFECT ON NURSING STUDENTS’ ACADEMIC PERFORMANCE AT BAGUIO CENTRAL UNIVERSITY**

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### **Abstract**

This study investigated the factors contributing to somnolence among nursing students at Baguio Central University (BCU) and examined its effects on their academic performance, perceived coping strategies, and their effectiveness. The respondents included 212 nursing students from first to fourth year, currently enrolled in the second semester of the 2023-2024 school year. A quantitative research design was used, employing purposive and snowball sampling techniques. Data were gathered through a self-structured questionnaire and analyzed using percentages and weighted mean. The findings reveal that somnolence among BCU nursing students is primarily driven by the rigorous demands of their academic workload, excessive technology use, and irregular sleep patterns. These factors contribute to excessive daytime sleepiness, which in turn impairs cognitive functions such as attention, memory, and overall alertness, significantly affecting academic performance. To combat somnolence, students often rely on strategies like ensuring adequate sleep, staying active during breaks, and practicing effective time management to reduce procrastination. However, the effectiveness of these strategies varies depending on individual lifestyles, personal discipline, and time management skills. This research aligns with UN Sustainable Development Goal 3: Good Health and Well-being, specifically Target 3.4, which aims to reduce premature mortality and promote mental health and well-being by 2030. It also aligns with Indicator 3.4.2, which emphasizes reducing the prevalence of physical and mental health disorders. By promoting healthy sleep patterns and effective time management, this study supports efforts to improve the overall well-being and academic success of future healthcare professionals.

*Keywords: sleep pattern, stress, academic success, sleep deprivation, well-being, physiologic needs, time management*

## A CASE STUDY OF THE DENTISTS' ROLES IN THE MULTIDISCIPLINARY MANAGEMENT CLEFT CARE

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### Abstract

Bilateral cleft lip and palate is a severe congenital anomaly that significantly impacts feeding, growth, speech, and overall well-being of the infant. Characterized by a complete separation of the lip and palate on both sides, this hinders intraoral suction pressure, making breastfeeding or bottle feeding challenging and often leading to malnutrition. A multidisciplinary approach involving pediatricians, dentists, health professionals and surgeons is essential for effective management, minimizing complications. Pre-surgical interventions such as lip taping and nasoalveolar molding (NAM) enhance maxillary alignment and nasal symmetry while facilitating feeding and preventing malnutrition. A team-based approach from birth to orthognathic surgery ensures optimal results. In this case report, a 69 day-old-male had a nasogastric tube initially placed for feeding but was later removed upon patient evaluation. A feeding plate was constructed using rubber impression with an individual tray and subsequently installed, alongside lip taping, to aid in repositioning the premaxilla toward the alveolar ridge. This case highlights the importance of early multidisciplinary management and pre-surgical interventions in improving the outcome of infants with bilateral cleft lip and palate.

**Keywords:** *Dentists' Roles, Multidisciplinary Management, Cleft Care, Nasoalveolar Molding (NAM), Presurgical Orthopedics*

## “KWENTO NI ROSARIO” RETOLD IN TEACHING SOCIAL DETERMINANTS OF HEALTH: VIDEO BASED LEARNING AS A PEDAGOGICAL TOOL IN COMMUNITY HEALTH NURSING I

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### Abstract

This capstone project explores the use of video-based learning as a pedagogical tool for introducing second-year nursing students (n=31) to the Social Determinants of Health (SDH) and the broader role of community health nursing (CHN). Centered on the short film *Kwento ni Rosario*, which depicts the preventable death of a malnourished child in an urban poor setting, the activity was grounded in Kolb’s Experiential Learning Theory. It provided students, who have yet to undergo clinical rotations, with an opportunity to engage in real-world observation, cultivate empathy, and reflect on the structural causes of health inequities. Students watched the video, identified explicit and implicit health issues, and applied the web of causation model to analyze Rosario’s case. They then identified interrelated SDH such as poverty, environmental degradation, limited access to healthcare, and low health literacy, and reflected on the compounding effects of social exclusion. The project aligned with the learning outcomes of NCM 204 (Community Health Nursing I): to explain the importance of CHN in improving the lives of Filipinos, assume the roles of CHN nurses that embody national pride, and uphold the WCC core values of compassion, integrity, and service. Reflections revealed students’ emerging awareness of the nurse’s role in health advocacy, education, and social justice. While lacking direct immersion, the activity effectively fostered critical thinking, empathy, and professional identity formation. The results affirm the potential of video-based learning, combined with structured reflection, to prepare novice nursing students to understand and articulate their future roles in addressing SDH and promoting health equity.

**Keywords:** *social determinants of health, video-based learning, pedagogical tool, community health nursing*



## VOICES OF RESILIENCE: UNDERSTANDING COPING STRATEGIES OF STUDENT NURSES IN STRESSFUL CLINICAL ENVIRONMENT

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### Abstract

This qualitative study explores the coping strategies employed by third-year student nurses at Lyceum Northwestern University as they navigate stressful clinical environments. Using a phenomenological research design, the study examines the lived experiences, perceptions, and resilience of nursing students. Data were gathered through purposive sampling and in-depth interviews with students exposed to significant stressors, and then analyzed using the Colaizzi method to extract meaningful insights. Findings indicate that nursing students experience moderate stress due to academic demands, peer interactions, daily life pressures, and patient care responsibilities. The primary coping strategy identified was problem solving, with students employing various techniques to manage their stress effectively. These findings emphasize the impact of clinical environments on student morale and overall well-being, shedding light on their resilience and ability to adapt to stress. To better support student nurses, it is recommended that comprehensive stress management programs be developed, along with balanced academic and clinical schedules, readily accessible mental health resources, and continuous feedback systems to address student concerns. This includes regular workshops on stress management techniques, adjustments to academic workloads, improved access to counseling services, and the establishment of feedback channels to ensure a supportive learning environment. This study aligns with Sustainable Development Goal (SDG) 3: Good Health and Well-being by emphasizing the mental and emotional well-being of future healthcare professionals. It also supports SDG 4: Quality Education, advocating for structured academic and clinical support that foster resilience and professional growth. By implementing these recommendations, nursing education can be enhanced, ensuring that students are equipped with the necessary tools to manage stress, excel in their training, and provide high-quality patient care in the future.

**Keywords:** *resilience, student nurses, clinical environment, coping strategies, lived experience*



## KNOWLEDGE AND ATTITUDE OF DENTISTS ON THE USE OF SOCIAL MEDIA IN TELEDENTISTRY

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### Abstract:

The integration of social media as a digital health tool has significantly expanded the reach of tele-dentistry, providing an accessible and cost-effective platform for patient communication, virtual consultations, and professional collaboration. Despite its growing adoption, the effectiveness of social media in tele-dentistry relies on dentists' knowledge and attitudes toward its application. Aligning with Sustainable Development Goal (SDG) 3: Good Health and Well being, this study evaluates the level of awareness and perceptions of dentists in Dagupan City regarding social media as a digital health solution in tele-dentistry, identifying potential barriers and informing policy recommendations for its ethical and effective implementation. A descriptive survey was conducted among licensed dentists in Dagupan City using purposive sampling. A structured questionnaire collected demographic data, knowledge, and attitudes toward social media in tele-dentistry. Descriptive statistical methods, including measures of central tendency, were employed for data analysis, and the Kruskal-Wallis H-test was used to assess variations across demographic factors. The findings indicate that dentists in Dagupan City widely acknowledge and accept the benefits of social media in tele-dentistry, particularly in improving patient engagement, facilitating remote consultations, and strengthening professional networks. No significant differences in knowledge or attitudes were observed based on age, experience, or digital competence ( $p > 0.001$ ), suggesting broad acceptance across diverse demographic groups. The widespread acceptance of social media in tele-dentistry underscores the need for standardized training programs and policy development to support efficient digital health integration. These findings contribute to SDG 9: Industry, Innovation, and Infrastructure, promoting the advancement of digital health technologies in dental practice to enhance access to dental care, especially in underserved areas. However, further research is essential to address ethical considerations, data privacy concerns, and best practices for optimizing the role of social media in tele-dentistry and digital healthcare delivery.

**Keywords:** *Tele dentistry, social media, digital health, health technology, dental practice, dentists.*



## EFFECTIVENESS OF THE COMMUNITY TEACHING PROGRAMS ON EDUCATING MOTHERS ON UNDER-FIVE IMMUNIZATION

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### Abstract:

This study evaluates the effectiveness of community teaching programs in educating mothers about under-five immunization using a descriptive-correlation research design. A checklist questionnaire was utilized as the primary data-gathering instrument, with 30 mothers from selected areas in Pangasinan participating. The study employed Average Weighted Mean and Pearson Correlation Coefficient for statistical analysis, with SPSS 20 used for data computation. Findings revealed that mothers aged 31 to 40 years constituted the majority of respondents, with those aged 31 to 35 and 36 to 40 being the most prevalent. While marital status did not significantly correlate with knowledge of childhood immunization, age emerged as a crucial factor, emphasizing the need for age-specific educational interventions. The community-teaching program demonstrated a moderate level of effectiveness, particularly in enhancing knowledge about recommended vaccines, though gaps in understanding persist. Positive correlations between age and knowledge aspects suggest that tailored interventions based on age could improve educational outcomes. In response to these findings, several recommendations were proposed. Targeted educational programs should be developed to address the specific needs of different age groups, ensuring that knowledge gaps—particularly in vaccine identification—are bridged. Continuous evaluation and refinement of the community-teaching program are necessary, integrating feedback from mothers to enhance engagement and effectiveness. Collaboration with healthcare providers is essential to reinforce learning, while public awareness campaigns should be launched to emphasize the importance of childhood immunization and dispel common misconceptions. Furthermore, longitudinal studies are recommended to assess the long-term impact of these educational interventions. This study supports Sustainable Development Goal (SDG) 3: Good Health and Well-being by advocating for improved immunization awareness and access, ensuring healthier outcomes for children. Additionally, it aligns with SDG 4: Quality Education, as it emphasizes the importance of structured and effective health education programs within communities.

**Keywords:** *community teaching programs, under-five immunization, mothers, vaccine, Pangasinan*

## **AIMS (Anatomy Interactive Mobile Simulation): Enhancing Medical Education Through Mobile 3d Visualization And Simulation**

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### Abstract

This study investigates the application of 3D visualization technology to improve medical education, with a specific focus on the creation of an interactive mobile application named Anatomy Interactive Mobile Simulation (AIMS). The research responds to the growing demand for captivating and efficient learning resources in the medical domain, with the goal of enhancing students' comprehension, knowledge retention, and practical use of anatomical information. The AIMS application offers students an extensive platform for investigating human anatomy through interactive 3D models, immediate feedback evaluations, and an intuitive interface designed for mobile devices. The study encompassed the creation and assessment of AIMS, employing a quantitative research methodology and the Agile development framework. Surveys were administered to students in nursing, medical technology, and radiology technology programs at World Citi Colleges Quezon City. The findings revealed a significant level of satisfaction regarding the application's functionality, reliability, usability, efficiency, and portability. The study concludes that AIMS holds the potential to revolutionize medical learning by delivering an engaging and readily available platform for students to explore intricate anatomical structures and medical concepts.

**Keywords:** *3D Visualization, Medical Education, Mobile Simulation and Anatomy Learning*

## OPTIMIZING MATERNAL AND CHILD HEALTH THROUGH AI: A CASE STUDY ON MOMCHAT PILOT IMPLEMENTATION

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### Abstract

The integration of artificial intelligence (AI) in maternal and child health services presents a transformative opportunity for enhancing health outcomes, particularly in geographically isolated and disadvantaged areas (GIDA). This study explores the potential of MOMCHAT (Municipality-Optimized Maternal and Child Health Assistance Tracker), an AI-powered application developed in 2020 by The Forum for Family Planning and Development, with support from the United Nations Population Fund (UNFPA). MOMCHAT offers mobile and desktop capabilities, utilizing AI to collect and analyze real-time data on maternal health. This enables local health officers and policymakers to track pregnancies, identify high-risk cases, and ensure timely interventions. This study was conducted in Daraga, Albay, and Taytay, Palawan, which were purposively chosen due to their distinct geographical characteristics: Daraga has mountain villages, while Taytay consists of island villages. The study employs an exploratory qualitative approach, utilizing interviews and observations to assess the effectiveness and responsiveness of MOMCHAT. Findings suggest that the AI system significantly reduces delays in data reporting by enabling barangay health workers (BHWs) to submit information via SMS, thereby addressing the challenges posed by limited internet connectivity. By streamlining the reporting process—previously reliant on manual recording and delayed transmission—the application enhances maternal health surveillance and facilitates data-driven policy-making. Additionally, MOMCHAT's potential extends beyond maternal health monitoring, as it can be adapted for tracking neonatal vaccines, family planning commodities, and other essential health supplies. The findings underscore the role of AI in optimizing maternal and child health interventions, reducing maternal mortality risks, and promoting sustainable health governance at the local level. Future research should explore further enhancements and broader implementation of AI-driven health tracking systems.

**Keywords:** *Artificial Intelligence (AI), Maternal and Child Health, Geographically Isolated and Disadvantaged Areas (GIDA), Health Data Surveillance, MOMCHAT Application*



## IDENTIFICATION OF BACTERIAL COMMUNITY AND DETECTION OF MICROPLASTICS IN SURFACE WATER AND BIOFILM MATRICES FROM MEYCAUAYAN RIVER, BULACAN

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### Abstract

Microplastic pollution has emerged as a critical environmental issue due to the accumulation of minimally biodegradable plastics. Microplastics have been detected across various ecological domains, yet studies on their presence in the Philippines remain limited. This study assessed microplastic contamination in surface water and biofilm matrices in Meycauayan River, Bulacan. Water and biofilm samples were collected, sieved through a 2 mm filter and a 300 µm mesh, then digested to remove organic matter. Extracted microplastics were visually inspected using a dissecting microscope, quantified, and analyzed for physical characteristics, including shape descriptors (length, circularity, AR, roundness, solidity) and color. Results revealed that most microplastics were green and yellow, with sizes predominantly below 5 mm. Fourier Transform Infrared Spectroscopy (FTIR) analysis identified polyethylene (PE) and polypropylene (PP) as the most abundant polymer types. This study also investigated the biofilm composition beside the river. A single sample from a concrete slab on the dock underwent metagenomic analysis using Next-Generation Sequencing (NGS), which revealed a diverse bacterial community. The dominant phyla were Firmicutes (16,391 OTUs) and Proteobacteria (11,721 OTUs). Given the complexity of bacterial diversity, further studies incorporating environmental parameters (e.g., pH, nutrients) are recommended. Additionally, antibiogram profiling can be conducted to assess antimicrobial-resistant (AMR) pathogens within the bacterial community. This research will support future studies aimed at developing effective mitigation strategies to reduce microplastic pollution and its ecological impacts. Furthermore, examining the biofilm composition in the Meycauayan River offers valuable insights into bacterial communities that interact with microplastics, contributing to a better understanding of their environmental dynamics. The findings of this study align with SDG 6 (Clean Water and Sanitation), SDG 14 (Life Below Water), and SDG 15 (Life on Land), as it addresses the impacts of microplastic pollution on freshwater ecosystems and biodiversity. Furthermore, the identification of polymer types supports SDG 12 (Responsible Consumption and Production) by highlighting the prevalence of plastic waste.

**Keywords:** microplastics, Meycauayan River, biofilm, bacterial community, bacterial diversity



## THE ROLE OF TRADITIONAL HEALING PRACTICES IN HEALTHCARE: A STUDY IN BARANGAY SAN MIGUEL, CALASIAO, PANGASINAN

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### Abstract:

This research explores the roles of traditional healing practices in the healthcare system of Barangay San Miguel, Calasiao, Pangasinan, and examines their contributions to the community's well being. Using qualitative methods and a phenomenological approach, the study investigates the lived experiences of 20 participants selected through purposive sampling. Data were collected through semi-structured interviews and analyzed using Colaizzi's method. Findings reveal that traditional healing practices commonly utilized in Barangay San Miguel include seeking an albularyo (folk healer), atang (food offering), hilot (therapeutic massage), and the use of herbal plants. Residents often turn to these methods due to financial constraints, cultural influences, and deep-rooted traditions. The benefits of these practices include effectiveness, accessibility, affordability, and trust, allowing for optimized resource utilization and greater client satisfaction. Additionally, these healing methods provide readily available healthcare solutions within the barangay. To enhance awareness and understanding of these practices, knowledge-sharing strategies, such as community discussions and cultural exchanges, are recommended. Traditional healing practices play a vital role in preserving cultural identity while fostering community bonds. Their continued use reflects the seamless integration of tradition and healthcare, addressing health concerns in a manner that aligns with cultural heritage. The study highlights the importance of Sustainable Development Goal (SDG) 3: Good Health and Well-being, as these practices offer alternative healthcare solutions that complement modern medicine. Furthermore, by promoting inclusivity and accessibility, this research also supports SDG 10: Reduced Inequalities, ensuring that all individuals, regardless of socioeconomic status, have access to healthcare options. The findings emphasize the need for community-driven initiatives to share experiences and beliefs, ultimately enhancing awareness and understanding of traditional healing practices. Future research should explore how these practices can be further integrated with modern healthcare to create a more holistic and inclusive healthcare system.

**Keywords:** *Traditional Healing Practices, Cultural Identity, Albularyo, Hilot, Community Healthcare*



## LIVED EXPERIENCES OF INDIVIDUALS WITH TYPE 2 DIABETES IN SANTA MARIA, SAN JACINTO, PANGASINAN, ON THE USE OF SERPENTINA LEAVES AS ALTERNATIVE MEDICINE

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### Abstract

This study explored the lived experiences of individuals with Type 2 diabetes in Santa Maria, San Jacinto, Pangasinan, regarding the use of serpentina leaves as an alternative medicine. By gaining insights into their health outcomes, this research seeks to contribute to the identification of potentially more effective and natural serpentina leaf products for managing Type 2 diabetes. Additionally, it aims to enhance public awareness of herbal treatments and their role in traditional and complementary medicine. A qualitative phenomenological research design was employed, utilizing semi-structured interviews with 10 participants aged 42-74 years, selected through purposive sampling. The data were transcribed and analyzed using thematic analysis to derive meaningful insights and understand the patterns in herbal medicine use among diabetics. Findings revealed that serpentina leaves are widely used in the community for managing diabetes symptoms. Participants reported various practices, including boiling the leaves or consuming them raw, to extract their medicinal benefits. The study highlighted the effectiveness of serpentina in reducing blood sugar levels, alleviating edema, and improving overall diabetes management. The leaves were also noted for their anti-diabetic properties, affordability, anti-inflammatory effects, and antioxidant content, which help mitigate diabetes-related complications and promote general well-being. However, participants also experienced negative effects, such as stomach pain due to bitterness and low blood pressure from excessive consumption. Despite these challenges, respondents emphasized the importance of complementing herbal remedies with a balanced diet, regular exercise, and routine medical check-ups for comprehensive diabetes management. This study aligns with Sustainable Development Goal (SDG) 3: Good Health and Wellbeing, as it explores affordable and accessible healthcare alternatives for managing chronic illnesses. Additionally, it supports SDG 9: Industry, Innovation, and Infrastructure, by advocating for further research on herbal medicine integration into mainstream healthcare. Findings suggest the need for awareness programs, health education campaigns, and scientific validation to educate individuals on the proper use of herbal medicine while promoting evidence based healthcare approaches for diabetes management.

**Keywords:** *serpentina leaves, type 2 diabetes, Alternative medicine, Santa Maria, San Jacinto, Pangasinan*



## NAVIGATING ADVERSITIES: THE RELATIONSHIP BETWEEN RESILIENCE AND WELL-BEING AMONG UNDERPRIVILEGED FAMILIES IN BARANGAY. LUCAO DAGUPAN CITY

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### Abstract:

Globally, individuals face various adversities that may affect their overall well-being, yet many demonstrate resilience, allowing them to adapt positively despite life's challenges. This study explores the relationship between resilience and well-being among underprivileged families in Brgy. Lucao, Dagupan City. 110 respondents, representing one member from each household, participated in the study through an online survey administered via Google Forms. The majority of respondents were aged 20-30 years old, with most earning below PHP 10,000 per month, highlighting financial constraints. High school graduates comprised the largest portion of participants. Findings revealed that the overall resilience level among respondents fell within the normal range. Various dimensions of well-being were assessed, showing that physical health (mean score = 3.68), social connectedness (3.65), financial security (3.54), emotional well-being (3.56), and character strengths (3.87) were all rated high. Statistical analysis indicated a significant relationship between age and resilience levels, whereas monthly income and educational attainment showed no significant effect. Moreover, resilience was significantly associated with social connectedness, financial security, emotional well-being, and character strengths, while physical health demonstrated no significant correlation. These findings underscore the crucial role of resilience in shaping the well-being of underprivileged families. The study supports Sustainable Development Goal (SDG) 3: Good Health and Well-being by emphasizing the importance of mental, emotional, and social health, as well as SDG 10: Reduced Inequalities, advocating for targeted awareness programs addressing the physical, financial, mental, and social needs of disadvantaged populations. Given the findings, it is recommended that community-based support programs be developed to strengthen resilience and enhance well-being. These initiatives should focus on providing resources, financial assistance, mental health support, and social interventions, ensuring a more sustainable and inclusive approach to improving the quality of life for underprivileged families.

**Keywords:** *resilience, well-being, underprivileged, adversities, significant relationship*



## EFFECTIVENESS OF RETURN DEMONSTRATION AND CLINICAL ROTATION IN DEVELOPING MATERNAL AND CHILD NURSING COMPETENCIES AMONG STUDENT NURSES

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### Abstract

Ensuring that nursing students acquire the necessary competencies in maternal and childcare is essential for preparing them for real-world clinical practice. This study evaluates how return demonstration and clinical rotation contribute to the development of critical nursing skills among Level II students at the University of Luzon. Using a sequential explanatory mixed methods design, the study will measure the effectiveness of return demonstration and clinical rotation through survey data and explores students' actual experiences to better understand the outcomes. The quantitative phase included 74 level II nursing students, two clinical instructors, dean and program head who will evaluate the student competencies in five key areas including critical thinking, clinical decision making, nursing assessment, implementation of care plans, and effective communication. In the qualitative phase, 10 nursing students will share their insights and reflections through guided interviews, offering a more personal perspective on how these learning strategies affected their confidence, readiness, and skill application. This study is grounded in Tanner's Clinical Judgment Model and the Constructivist Theory of Knowledge Transfer, both of which emphasize the importance of applying learned knowledge in real-life contexts. Return demonstrations provided students with structured opportunities to practice and refine procedures, while clinical rotations allowed them to engage with real patients and adapt their skills in dynamic environments. The findings aim to highlight both the strengths and challenges of using these strategies in competency development. Based on the results, the study will propose an enhancement plan to improve the design and implementation of return demonstrations and clinical rotations. This plan will support nursing educators in aligning instructional methods with student learning needs and clinical expectations. In due course, the study will contribute to advancing competency-based nursing education by promoting strategies that not only build technical proficiency but also strengthen decision-making, communication, and professional confidence, skills that are critical in maternal and child healthcare.

**Keywords:** *return demonstration, clinical rotation, maternal and child nursing, student competency, nursing education strategies*



## COMMUNITY HEALTH NURSING PROGRAM MANAGEMENT IN THE HIGHER EDUCATION INSTITUTIONS

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### Abstract

Community health nursing programs are essential for promoting public health and addressing health disparities, with private Higher Education Institutions (HEIs) playing a significant role in nursing education. Despite existing research in community health nursing, there is a gap specifically concerning private HEIs particularly in exploring curriculum assessment, teaching methods, clinical experiences, and outcomes. This study aimed to analyze the program management of Community Health Nursing (CHN) by the private Higher Education Institutions (HEIs) in Cordillera Administrative Region (CAR). To comprehensively address the complexities of Community Health Nursing (CHN) programs offered by private Higher Education Institutions (HEIs) in the Cordillera Administrative Region (CAR), this study employed a qualitative case study approach. Data was systematically organized, coded, and analyzed to explore the current status and challenges of CHN programs of private HEIs in CAR, proposing strategies for improvement. Findings were validated through mentor feedback and triangulation with existing research, culminating in a proposed CHN framework. The curriculum design for CHN programs in CAR is structured to provide students with essential competencies in community health, public health, epidemiology, and health promotion, adhering to Commission on Higher Education (CHED) guidelines. The program components and implementation are composed of the CHN key activities, current operational styles, community partnerships, community field work and immersion, compliance with educational standards and trainings and workshop sessions. Evaluation of CHN program within private HEIs in CAR comprehensively highlights both strengths and weaknesses. Considering that private HEIs play a pivotal role in shaping the future of community health nursing (CHN). Through a comprehensive examination of challenges and proposed strategies, it is evident that collaborative partnership, curriculum elevation, instructor training, resource allocation, and community engagement are pivotal for enhancing the effectiveness and sustainability of CHN programs in CAR. These findings underscore the importance of strategic interventions and collaborative efforts in optimizing program management and ultimately improving community health outcomes within the region.

**Keywords:** *Community Health Nursin, Program Management, Higher Education Institutions, Cordillera Administrative Region*



## OPTIMIZING PATIENT CARE AT WORLD CITI MEDICAL CENTER: THE ROLE OF A COMPREHENSIVE MOBILE HEALTH APP WITH BLOCKCHAIN TECHNOLOGY

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World Citi Colleges

### Abstract

CitiCare is a comprehensive mobile health application developed to enhance patient care by addressing the fragmentation and inefficiencies in healthcare delivery. Leveraging blockchain technology, the app ensures secure, transparent, and immutable health record management while promoting patient empowerment and system-wide efficiency. This study explores the impact of the app in reducing paperwork, clarifying prescriptions, improving access to medical records, and enhancing patient engagement. Using a quantitative research design, the system was tested at World Citi Medical Center with patients, allied health staff, and doctors. Findings indicate a high level of acceptance and confidence in CitiCare’s potential to improve health outcomes. However, concerns regarding privacy and data security underscore the need for robust safeguards.

**Keywords:** *Mobile Health Application; Blockchain Technology in Healthcare; Patient Care Optimization; Digital Health Records and Healthcare Technology Adoption*

**CRIMINAL JUSTICE  
EDUCATION  
TECHNOLOGY &  
PUBLIC  
ADMINISTRATION**

## **CRIMINAL JUSTICE EDUCATION TECHNOLOGY & PUBLIC ADMINISTRATION**

### **TABLE OF CONTENTS**

<b>Title</b>	<b>Page No.</b>
Implementation of the Philippine Reference System 1992 In Baguio City <i>Antero D. Mappang, Jr.</i>	91
Dispute Resolution Strategies of the Lupon Tagapamayapa in Palma Urbano, Baguio City: A Qualitative-Descriptive Analysis <i>Sonny Boy T. Ancheta</i>	92
Leading Factors in the Performance of WCC-ATC North Manila Criminology Licensure Examination <i>Hero Aganan</i>	93
An Analysis Of Social Media Engagement On Political Awareness Among Students In Dagupan City <i>Jheson O. Dacanay</i>	94
From Challenges to Opportunities: The BHAVA Project An Integrated Strategy to Support Children in Conflict with the Law <i>Abigail Cenero Interno</i>	95
Mangaldan Lgu Personnel Information Management System <i>Joy Chrisky V. Lobendino</i>	96
Sustainability Assessment: Evaluating the Implementation of Municipal Ordinance 2015-02 for Eco-Friendly Practices in Binalonan, Pangasinan <i>Michael Madera</i>	97
Level of Awareness Regarding “Student Fare Discount Act” <i>Salvador Samsom</i>	98
Digital Registration of the Agriculture Sector For Validation Management in the LGUs Of Pangasinan <i>Eleanor L. Blanco</i>	99
Local Disaster Risk Reduction and Management of Law Enforcers In Dagupan City <i>Demosthenes P. Magnaan</i>	100

## **IMPLEMENTATION OF THE PHILIPPINE REFERENCE SYSTEM 1992 IN BAGUIO CITY**

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### **Abstract**

This study examined the implementation of the Philippine Reference System 1992 (PRS92) in Baguio City. The respondents included 56 local geodetic engineers who are duly registered with the Geodetic Engineers of the Philippines (GEP), Baguio City Chapter. The research utilized a descriptive research design, with a structured questionnaire as the primary data-gathering instrument. The findings revealed that the objectives of the PRS92 were only partially attained, with its programs and activities moderately implemented. The challenges encountered in the implementation of the PRS92 were found to be moderately serious. Key conclusions include the following: the path to fully achieving the objectives of the PRS92 is hindered by the complexity of the Philippine geodetic infrastructure, as well as limitations in geodetic standards and networks. Additionally, the programs and activities under the PRS92 are still in the process of strengthening their structures and manpower to ensure efficient implementation. Addressing these challenges is critical for the full realization of the PRS92's objectives. This research aligns with SDG 9: Industry, Innovation, and Infrastructure, particularly Target 9.1, which focuses on the development of reliable, sustainable, and resilient infrastructure, including geodetic systems that support national development and the well-being of communities.

**Keywords:** *geodetic control networks, global navigation satellite system, objectives, programs and activities, implementation, challenges*

## **DISPUTE RESOLUTION STRATEGIES OF THE LUPON TAGAPAMAYAPA IN PALMA URBANO, BAGUIO CITY: A QUALITATIVE-DESCRIPTIVE ANALYSIS**

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### **Abstract**

This study explores the types of disputes addressed by the Lupon Tagapamayapa in Palma Urbano, Baguio City, including debt collection, boundary conflicts, money lending disagreements, and cases of unjust vexation. The research employed a qualitative-descriptive design with guided interviews as the primary data collection method. The findings reveal that these disputes significantly shape the strategies used by Lupon members to manage complex interpersonal conflicts. The participants emphasized their role in resolving minor issues, such as neighborly disputes and gossip, at the community level, thereby reducing the caseload of formal courts through effective mediation and conciliation. This study aligns with UN Sustainable Development Goal 16 – Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels. it supports Target 16.3, which promote the rule of law at the national and international levels and ensure equal access to justice for all, and Indicator 16.3.1, which measures the proportion of victims of violence in the previous 12 months who reported their victimization to competent authorities or other officially recognized conflict resolution mechanisms. The study highlights the role of ongoing capacity building, aligning with Target 16.6, emphasizing the development of effective, accountable, and transparent institutions at all levels. Strategies identified include time management, active listening, and empathy. These approaches emphasize interpersonal and conflict resolution skills developed through experience and continuous learning. They reflect the need for resilient and responsive community-based justice systems.

**Keywords:** *conflict, disputes, Lupon Tagapamayapa, strategies, mediation*

## **LEADING FACTORS IN THE PERFORMANCE OF WCC-ATC NORTH MANILA CRIMINOLOGY LICENSURE EXAMINATION**

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### **Abstract:**

The main objective of this study is to comprehensively identify the leading factors in the performance of the WCC – ATC North Manila in the Criminology Licensure Examination, understanding these factors is crucial for developing targeted recommendations and strategies aimed at enhancing the student’s performance in the Criminology Licensure Examination from the identified factors and helping the institution achieve a 100% Institutional passing rate as well as aiding the graduates achieve success in the Criminology Licensure Examination. The researchers chose the graduates of WCC – Aeronautical and Technological College North Manila Criminology department batch 2021, 2022, and 2023, Batch 2021 has a total graduate of four (4), Batch 2022 has a total graduate of eighteen (18), and Batch 2023 has a total graduate of nine (9), with a total number of thirty-one (31) graduates from batch 2021-2023; In this study the researchers used Purposive sampling techniques to ensure that the participants are the most relevant to the study’s goal. Certain inclusion criteria such as their complete knowledge of the whole curriculum in the college of Criminology in WCC-ATC North manila and their direct participation in the Criminology Licensure Examination. To ensure data reliability and validity, the selection method prioritized participants with substantial experience and knowledge related to the study, this targeted approach aimed to gather insights from key individuals providing a robust dataset for analysis. However, the study also identified areas for improvement. Enhancements in grading consistency, class size optimization, and resource availability are recommended to further elevate the student learning experience. Board review preparation was highlighted as a critical area for development. Strengthening support systems through structured review programs, stress management initiatives, and rigorous attendance monitoring is essential.

**Keywords:** *Criminology Licensure examination; Board Review Preparation; Performance Factors; WCC – ATC North Manila; Criminology Education*



## **AN ANALYSIS OF SOCIAL MEDIA ENGAGEMENT ON POLITICAL AWARENESS AMONG STUDENTS IN DAGUPAN CITY**

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### **Abstract:**

This study examined the political consciousness and social media usage among university students in Dagupan City. The widespread use of social media functions as a primary means of information distribution, significantly influencing the political awareness and involvement of young people. Through the use of structured questionnaires, a quantitative descriptive-correlational methodology was utilized to collect data, which was then analyzed using means, standard deviations, and correlation coefficients. Students demonstrated a higher frequency of actions such as sharing postings and reacting to information rather than engaging in discussions, as evidenced by the findings, which suggested that students exhibited low involvement with political content ( $M = 2.03$ ,  $SD = 1.08$ ). The students from urban areas demonstrated a higher level of political awareness than their counterparts from rural areas. Additionally, there was a positive link between awareness and age ( $r = 0.21$ ,  $p = 0.05$ ). The findings highlight the importance of providing students with exposure to various forms of media and civic education in order to enable them to engage in political debate more critically and actively.

**Keywords:** *social media, political awareness, emotional response, college students, Dagupan City.*

## **FROM CHALLENGES TO OPPORTUNITIES: THE BHAVA PROJECT AN INTEGRATED STRATEGY TO SUPPORT CHILDREN IN CONFLICT WITH THE LAW**

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### **Abstract**

This study explores the multifaceted challenges faced by children in conflict with the law (CICL) within the Bahay Pag-asa Youth Rehabilitation Center, focusing on their psychological, social, educational/vocational, and personal/interpersonal difficulties before, during, and in anticipation of reintegration into society. Utilizing a purposive sampling method and an unstructured interview guide for data collection, the study combines thematic analysis of qualitative data and descriptive statistical analysis of quantitative data to identify several critical struggles, including emotional distress, trauma, difficulties adjusting to institutional life, and the stigma associated with their legal status. Additionally, the study highlights the anticipated challenges upon reintegration, such as fear of rejection, limited opportunities, and the psychological process of readjustment to family and community life. Addressing these challenges requires a holistic, child-rights-based approach that incorporates targeted interventions, continuous support, and comprehensive rehabilitation programs. The findings underscore the need for a multifaceted strategy that fosters resilience and ensures successful reintegration. In response, the study introduces the BHAVA Project, a comprehensive intervention designed to support CICL through three key components: promoting healthy gender development, preparing for career readiness, and building essential life skills. These components are specifically tailored to address the unique needs of CICL, helping them navigate their challenges and empowering them to build a brighter future. By fostering resilience, enhancing social inclusion, and providing opportunities for personal growth, the BHAVA Project aims to equip CICL with the tools necessary to overcome obstacles and reintegrate successfully into their communities. The intervention emphasizes the importance of continuous support and rehabilitation in enabling CICL to lead fulfilling lives and break free from the cycle of legal conflict. This study aims to contribute to the limited research on CICL in the Philippines and to fully understand the situation of CICL in the country.

**Keywords:** Children in Conflict with the Law, BHAVA Project, challenges, reintegration, rehabilitation, child-rights, resilience



## **MANGALDAN LGU PERSONNEL INFORMATION MANAGEMENT SYSTEM**

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### **Abstract:**

This study proposes the implementation of the Mangaldan LGU Personnel Information Management System (PIMS) to address the challenges of manual human resource management practices within the local government unit. The primary aim is to demonstrate how automating and streamlining HR operations can enhance efficiency in workforce and personnel information management. By integrating digital solutions, the research seeks to improve access to employee data, enhance the tracking of leave and travel applications, and alleviate administrative burdens on HR staff and department heads. Ultimately, this initiative supports the Mangaldan LGU's vision of modernizing public services and aligning HR functions with contemporary organizational needs, thereby improving service delivery to constituents. Utilizing a descriptive developmental research design, the study involved a comprehensive analysis of current HR management practices through observational techniques and surveys to gather data on existing systems and user behaviors. This dual approach enabled the systematic design, development, and evaluation of the PIMS, ensuring it met specific standards and criteria. A usability test conducted with approximately twenty participants, including employees and IT professionals, yielded positive feedback regarding usability, design, navigation, availability, and user friendliness. Key findings highlighted significant challenges in manual HR processes, including difficulties in accessing and organizing employee data and managing leave records. In response, the PIMS features robust tools such as secure login, comprehensive dashboards, and dedicated pages for managing employee information, leave and travel applications, and recruitment processes. These enhancements promote data accuracy, operational productivity, and effective resource planning. The results indicate that the PIMS effectively meets the diverse needs of its stakeholders, paving the way for a more efficient, organized, and responsive HR environment.

**Keywords:** *Personnel Information Management System, Leave and Travel Applications, HR Processes, Recruitment, Operational Productivity*

## **SUSTAINABILITY ASSESSMENT: EVALUATING THE IMPLEMENTATION OF MUNICIPAL ORDINANCE 2015-02 FOR ECO-FRIENDLY PRACTICES IN BINALONAN, PANGASINAN**

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### **Abstract**

The growing environmental challenges globally, like climate change, pollution, and resource depletion, led to the development of the United Nations' -SDGs, which aimed to balance economic growth, environmental protection, and social well-being. Municipal Ordinance 2015-02 in Binalonan, aligned with SDG 11 (Sustainable Cities and Communities), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), and SDG 17 (Partnerships for the Goals). This ordinance sought to reduce plastic waste and promote sustainable alternatives, supporting efforts to mitigate climate change and foster collaboration within the community. This study evaluated the implementation of Municipal Ordinance 2015-02 by assessing residents' awareness, eco-friendly practices, environmental attitudes, waste reduction, and support for environmental policies. The study utilized quantitative descriptive research. 390 individuals served as respondents coming from the 24 Barangay of Binalonan. Majority of the respondents (91.26%) were aware of the ordinance. Despite the high level of awareness, a significant discrepancy was found between residents' awareness of the ordinance and their actual participation in its eco-friendly practices. While most residents were informed about the ordinance, this awareness did not necessarily translate into consistent compliance with the regulations. External factors—such as accessibility to eco-friendly alternatives and disparities in waste collection services—were identified as key challenges to full participation. These findings emphasized the need for stronger partnerships between local government and community stakeholders, as highlighted by SDG 17. The study aimed to inform through sustainability performance report to improve implementation, contributing to global efforts in responsible consumption, climate action, and sustainable urban development.

**Keywords:** *Sustainability; Performance Report; Municipal Ordinance 201502; Binalonan, Pangasinan*



## **LEVEL OF AWARENESS REGARDING “STUDENT FARE DISCOUNT ACT”**

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### **Abstract**

This study examined the level of awareness among criminology students at the University of Luzon regarding Republic Act No.11314, also known as the Student Fare Discount Act. The law grants a 20% discount on public transportation for students, aiming to ease their financial burden. Despite its potential benefits, many students are either unaware of the act or unclear on how to fully take advantage of it. This research aimed to assess students' level of awareness, identify the factors influencing their understanding, and suggest ways to improve awareness. Using a descriptive, non experimental method, surveys were distributed to 700 criminology students from first to fourth year. The data revealed that while some students are familiar with certain provisions, like the discount itself, others are less informed about key elements such as eligibility requirements, when the law took effect, how to file complaints, and the penalties involved. Most students use public transportation, especially jeepneys and buses, making this policy especially relevant to them. The results highlight a clear need for better information access. Factors such as age, year level, and previous experience using discounts were found to affect awareness. Based on these findings, the study recommends stronger information campaigns through student organizations, the use of infographics and brochures, and follow-up assessments to measure progress. By improving students' understanding of the law, the full benefits of the Student Fare Discount Act can be realized, helping reduce transportation costs and supporting students in their pursuit of education.

**Keywords:** *Level of Awareness, Student Fare Discount Act, University of Luzon, Criminology Students*



## **DIGITAL REGISTRATION OF THE AGRICULTURE SECTOR FOR VALIDATION MANAGEMENT IN THE LGUs OF PANGASINAN**

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### **Abstract**

Due to the global demand of sustainable agriculture with a sense of urgency, and in line with the agricultural thrusts of the government, the Department of Agriculture established the Registry System for Basic Sectors in Agriculture (RSBSA) which is an electronic compilation of basic information of farmers, farm laborers and fisherfolk, their agricultural activities, demographic and socio-economic characteristics in managing the validation of the said sectors. In view of the aforementioned this study probed into the consistency of data collection among implementing units, accuracy of data encoding, and data quality and to determine the extent of validation management of the online registry system which is called the RSBSA to the municipalities of District IV, Pangasinan. Employing the quantitative descriptive-survey research method focusing on the 4 municipalities of the 4<sup>th</sup> congressional district of Pangasinan, namely: Mangaldan, Manaoag, San Jacinto, and San Fabian covering a total of 125 respondents comprises the study and are follows 34 (27.20%) come from Mangaldan, 30 (24%) are from Manaoag, 38 (30.40%) are from San Fabian and 23 (18.40%) are from San Jacinto. As to Pre-Validation phase, as assessed by the 2 groups of validators, Manaoag town topped the rank with an overall pooled mean rating of 4.28 (very managed). This is followed by San Fabian with an overall pooled mean rating of 4.22 (VHM). Two towns namely Mangaldan and San Jacinto obtained overall pooled mean of 4.15 and 4.12 respectively, described as (HM). In terms of the Validation Proper, of the 4 municipalities, San Jacinto got the highest overall pooled mean rating of 3.66 (HM). This is followed by San Fabian ( $x = 3.52$ , HM), and Mangaldan ( $x = 3.50$ , HM). The town of Manaoag got the lowest overall pooled mean rating of 3.27 MM. While for the Post Validation phase, three municipalities obtained an overall pooled mean rating ranging from 3.6 to 3.51 described as HM. These are: San Fabian having the topmost rank ( $x = 3.61$ ), followed by San Jacinto ( $x = 3.56$ ), and Mangaldan ( $x = 3.51$ ). Manaoag town is assessed with overall pooled mean rating of 3.34 (MM). Since the overall grand mean result of the extent of validation management of the Online Registry System along the 3 phase in the 4th district of Pangasinan is highly managed it only implies that a more robust technical support and effective communication and coordination be done to insure the engagement of all stakeholders.

**Keywords:** *Digital Registration of Agricultural Sector, Validation Management, Local Government Units, Pangasinan*



## **LOCAL DISASTER RISK REDUCTION AND MANAGEMENT OF LAW ENFORCERS IN DAGUPAN CITY**

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### **Abstract**

The effectiveness of law enforcement in disaster response varies widely across different regions, influenced by factors such as training, available resources, and the level of inter-agency collaboration. In the local level, Dagupan City in Pangasinan faces the recurring threat of tropical storms that bring with them massive flooding, severely affecting the lives of its residents and the city's infrastructure, considering the city, being in a low-lying area and crisscrossed by rivers, is particularly vulnerable to flooding during the typhoon season. The recurring nature of these disasters has highlighted the critical need for effective disaster response mechanisms, particularly the role of police personnel in managing evacuations, securing flooded areas, providing emergency assistance, and maintaining public order. Hence, this study aimed to assess the capacity of the Dagupan City Police on disaster risk reduction and management along the aspects of: personnel, training, logistics, finance and collaboration. This study utilized the descriptive research design centered on the disaster response capability of the law enforcers in Dagupan City Police Station. Frequency count, mean, weighted mean, pooled mean, and percentage were used to treat the data with its corresponding descriptive equivalent employing Likert Scale. With an overall mean of 3.63, the disaster response capacity is rated as "Highly Capable" (HC). Personnel emerged as the strongest area, indicating that PNP staffs are well-prepared and categorized for disaster response, with effective pre- and post disaster briefings. Training was the second strongest area, emphasizing the relevance and frequency of disaster-specific training programs. Followed by Collaboration, this reflects strong inter-agency coordination, particularly in joint disaster responses with the Armed Forces of the Philippines (AFP), Office of Civil Defense, and LGUs. Logistics capability is robust but highlights challenges in resource deployment to remote areas and maintenance of disaster response equipment, and it is placed 4th rank. Lastly, financial capability was the lowest scoring category, revealing potential limitations in budget allocation for disaster preparedness activities, such as training for less frequent hazards (e.g., landslides) and equipment replacement. The Philippine National Police (PNP) in Dagupan City has demonstrated commendable disaster response capabilities, as evidenced by its well-organized personnel structure, relevant training programs, and strong inter-agency partnerships. These strengths provide a solid foundation for disaster preparedness and response operations.

**Keywords:** *Disaster Risk Reduction and Management, Disaster Response Capacity, Law Enforcers, Dagupan City Police*

# **EDUCATION TECHNOLOGY**

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## EDUCATION TECHNOLOGY

### TABLE OF CONTENTS

Title	Page No.
Challenges Encountered by the NSTP Students in their Community Immersion <i>Alcantara, et.al</i>	104
Teaching Styles and Teaching Strategies: The Road to Effective Classroom Instruction <i>Casi, et.al</i>	105
Charting the Mobile Learning Landscape: Assessing Students and Faculty Perspectives in Higher Education in Northern Philippines <i>Ficer Dofredo</i>	106
Competence of Sports Coaches in Higher Educational Institutions (HEIs): Basis for the Offering of Diploma in Sports Coaching <i>Olimpo, et.al</i>	107
Reading Management Strategies of Key Stage Teachers <i>Agpasa, et.al</i>	108
Scaling The Communication and Critical-Thinking Skills of 2nd Year College Students Majoring in English of the School of Teacher Education at Universidad De Dagupan using Debate as a Technique <i>Azurin, et.al</i>	109
Attributes, Thriving and Work Performance of Guidance Practitioners in Higher Educational Institutions in Dagupan City <i>Bartolo</i>	110
Unlocking Potential: Transforming Lesson Planning with Universal Design for Learning (UDL) Strategies <i>Bautista</i>	111
Digital Intelligence Quotient (DQ) of Secondary Mathematics Teachers in Urdaneta City: Basis for Technology-Enhanced Management <i>Pasion, et. al</i>	112
Aiming for Excellence: The ACHIEVERS Model as a Paradigm for Elevating Student Engagement and Learning in Higher Education <i>Gumasing, et. al</i>	113
Improving the Public Speaking Skills of AB Communication Students Through the use of Stanislavski's Methods of Acting <i>Tamonan</i>	114
BLEPT Predictors: A Correlational Study of the Performance of Teacher Education Graduates in Capstone Education Course and Licensure Examination <i>Rizel Padua et al.</i>	115
Modular Approach-Based Language Teaching at the time of Pandemic: A Hermeneutic Phenomenology <i>Carolino, et.al</i>	116

Enhancing Learning of Scientific Concepts Through Project “Lenses” <b><i>Orbeto, et.al</i></b>	117
Exploring Technology-Enhanced Educational Management (TEEM) for Holistic Student Development <b><i>Begenio, et.al</i></b>	118
The Effectiveness of Dual Coding on Enhancing Memory and Attention Span Among Grade 7 Learners at Pacac High School <b><i>Orzame, et.al</i></b>	119
Parental Involvement on Academic Performance of Grade 6 Pupils at Guimba West Central School <b><i>Talens, et.al</i></b>	120
Course Audit Program of World Citi Colleges, Guimba Campus in Preparation for Criminologist Licensure Examination: A Comprehensive Assessment <b><i>Gutierrez, et.al</i></b>	121
Adaptive Barriers to Biofuels and Electric Vehicle Charging Stations in Guimba, Nueva Ecija <b><i>Galising, et.al</i></b>	122
Comparative Analysis Between Inquiry-Based Learning and Self-Autonomy Learning Approach On Mathematical Performance Among Grade – 10 Students In Bartolome Sangalang National High School <b><i>Nepomuceno, et.al</i></b>	123
English Proficiency Assessment Tool for WCC ATC <b><i>Tamara Jane Ventanilla, et.al</i></b>	124
Performance Evaluation of Student Services in Key Departments at WCC Aeronautical and Technological College Binalonan Campus <b><i>Liahona A. Gutierrez</i></b>	125
Beyond Punishment: Cultural, Social and Institutional Factors Influencing Students’ Adherence to School Policies <b><i>Michael Anthony Junio, et.al</i></b>	126
Efficiency Of Orangeapps System in the Performance of Selected Personnel and Students of World Citi Colleges <b><i>Lailani Grace F. Licudo</i></b>	127
Development of Survival and Rescue Training Material <b><i>Meriam Diffy Lumactod, et.al</i></b>	128
Development of Digital Mock Examination System for Aeronautical Engineering Program in WCC-ATC Binalonan <b><i>Arc Angelo S. Tubasis</i></b>	129
CHARCOOL Project: Assessing Market Viability and Community Support on Sustainable Agricultural Waste Management and Utilization <b><i>Dannah Valerie J. Dulnuan, et.al</i></b>	130
Edutourism-Focused Marketing Strategies and Corporate Social Responsibility Initiatives Among Standard Hotels and Lodgings in Pangasinan <b><i>Sushmita Sen Chan Montano, et.al</i></b>	131

## CHALLENGES ENCOUNTERED BY THE NSTP STUDENTS IN THEIR COMMUNITY IMMERSION

Manion K. Alcantara<sup>1</sup>, Michelle C. Alumno<sup>2</sup>, Remma C. Celestino<sup>3</sup>, Cherrie Mae M. Manuel<sup>4</sup>,  
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### Abstract:

Community immersion, also known as community-based learning or service learning, involves actively engaging with and learning from a community to address real-world issues. While it can be a rewarding experience, there are several challenges that individuals or groups may encounter during community immersion. Hence, this study aims to determine the challenges and recommendations of the NSTP students in their community immersion for the school year 2023 to 2024. A sample size using Slovin's Formula was used to determine its respondents, resulting in 228 participants. Furthermore, a self-made questionnaire was used to gather information from the respondents. The findings of the study showed that the challenges encountered by the NSTP students in their community immersion are moderately serious, as evidenced by a mean score of 2.93. They highly recommended, as evidenced by a mean score of 3.95, addressing these challenges to improve future immersion experiences. Based on these findings, it can be concluded that the difficulties faced during community immersion were substantial, and the suggestions provided by the NSTP students are strongly advised for consideration. This study will significantly contribute to enhancing the community immersion activities of the NSTP department, specifically in the NSTP-CWTS 2. By acknowledging and addressing these obstacles, students can create more impactful and enriching experiences for themselves and the communities they engage with. Community immersion programs are powerful tools for fostering solidarity, empathy, and building bridges between diverse communities. This research aligns with SDG 4.7, which emphasizes the need for quality education to promote sustainable development, including fostering social and emotional skills and building resilient communities.

**Keywords:** *community, service, situations, NSTP students, Baguio City*



## TEACHING STYLES AND TEACHING STRATEGIES: THE ROAD TO EFFECTIVE CLASSROOM INSTRUCTION

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### Abstract:

Effective teaching in nursing and midwifery education relies on both appropriate teaching styles and strategies, which are critical for fostering meaningful learning and practical skills. This study identified the teaching styles and strategies utilized by nursing and midwifery instructors at Baguio Central University and assessed their effectiveness in both theoretical classroom instruction and clinical practice. Using a quantitative descriptive design, the researchers surveyed 17 out of 34 instructors from the College of Nursing and School of Midwifery with at least one year of teaching experience, selected through purposive sampling. Data were collected using structured questionnaires, and descriptive statistics, including average weighted means, were employed for analysis. The findings revealed that blending traditional lecture methods with demonstration, group discussions, and skills laboratory simulations are highly effective in promoting knowledge retention, critical thinking, and practical skills acquisition. Instructors noted that while skills laboratory simulations do not guarantee increased student self-confidence, they effectively prepare learners for real-world clinical situations by enhancing their practical readiness. Moreover, integrating lectures with hands-on practice significantly supports students in applying theoretical knowledge to clinical contexts, reinforcing learning and professional competence. This research aligns with United Nations Sustainable Development Goal (SDG) 4: Quality Education, particularly Target 4.3, which aims to ensure equal access for all women and men to affordable and quality technical, vocational, and tertiary education, including university by 2030. It also contributes to Indicator 4.3.1, which measures participation rates in education, reflecting the importance of effective teaching methods in shaping the next generation of healthcare professionals.

**Keywords:** *skills acquisition, community involvement, mode of instruction, information retention, knowledge transfer*

## CHARTING THE MOBILE LEARNING LANDSCAPE: ASSESSING STUDENTS AND FACULTY PERSPECTIVES IN HIGHER EDUCATION IN NORTHERN PHILIPPINES

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### Abstract:

This study explores the current landscape of mobile learning (m-learning) in higher education by examining the perspectives of both students and faculty. It aims to understand their perceptions, attitudes, and experiences with m-learning to identify opportunities and challenges for its effective implementation. A mixed-methods approach was employed, incorporating both quantitative and qualitative data collection. A survey was administered to students and faculty at a large university to gather data on their m-learning usage, preferences, and perceived benefits and drawbacks. Additionally, an open-ended questionnaire was used to capture qualitative insights, allowing participants to elaborate on their experiences and perspectives. The findings reveal a generally positive attitude toward m-learning among both students and faculty. Students reported using m-learning for various purposes, including accessing course materials, collaborating with peers, and preparing for assessments. Faculty members viewed m-learning as a valuable tool for enhancing engagement, accessibility, and learning outcomes. However, the study also identified challenges, such as disparities in access to technology, infrastructure limitations, and a lack of adequate training and support. This study provides valuable insights into the evolving m-learning landscape in higher education. It highlights the potential of m-learning to enhance teaching and learning while emphasizing the need to address existing challenges to ensure its widespread and effective adoption. The findings can guide stakeholders in developing evidence-based strategies for integrating m-learning into educational practices, fostering a more engaging and accessible learning environment.

**Keywords:** *Mobile learning, higher education, student perspectives, faculty perspectives, survey, questionnaire, m-learning benefits, m-learning challenges, infrastructure, technology access*



## COMPETENCE OF SPORTS COACHES IN HIGHER EDUCATIONAL INSTITUTIONS (HEIS): BASIS FOR THE OFFERING OF DIPLOMA IN SPORTS COACHING

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### Abstract

Sports coaching is a concept that applies to various areas, including psychology, business, and, of course, sports. In this study, a descriptive approach was used. This method involves giving detailed descriptions or presentations of events or information to fully capture the nature of a subject without any assumptions or conclusions being drawn about it. It is widely used in writing, statistics, and analytics. This research mainly concentrates on how effective coaches are at higher education institutions (HEIs) using the descriptive approach and survey to validate the findings obtained. This evaluation is a platform for offering a Diploma in Sports Coaching at Urdaneta City University. This study focuses on determining the current competency levels among sports coaches in HEIs. Subsequently, it suggests that Urdaneta City University should consider implementing a diploma course for Sports Coaching. This study explores the profile backgrounds and demographics of coaches, pointing out their participation in several sports, diverse coaching experiences, and educational qualifications. It points to their commitment to ongoing professional development through seminars and awards. Moreover, the research identifies brief periods when coaches agree on being efficient in fundamental coaching dimensions but fails to define some areas where this skill can be improved upon. Performance in coaching is predicated by things like receipt of prizes, attending seminars, and years of experience in sports management, among others. These factors also affect recruitment into training programs and various recognition schemes. The forthcoming sports coaching education programs may find these results useful, especially with the advent of the Diploma in Sports Coaching that meets the expectations and aspirations of future coaches. Data-driven recommendations improve coaching effectiveness and professional growth, including mentorship programs, continuing education, cross-disciplinary collaboration, and recognition, fostering progress and innovation in the sports sector. Thus, it is important to develop platforms for knowledge transfer within the partnership, create formal education for targeted professional development in sports coaching, and narrow the perceived divide between trainers and sports coaches' employees. On top of all these, further studies should be conducted on diploma-in sports coaching courses that are useful in physical education and in the field of sports while using a curriculum that has been developed to help non-degree and degree holders to grow professionally within their domains of practice in sports coaching.

**Keywords:** *Sports, Sport Coaching, HEI, Diploma in Sports Coaching*



## READING MANAGEMENT STRATEGIES OF KEY STAGE TEACHERS

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### Abstract

Reading proficiency is a fundamental skill that serves as the foundation for academic success. However, many students in the 6th Municipal District of Pangasinan, Division of Pangasinan II, struggle with reading fluency, comprehension, and word recognition, leading to poor literacy outcomes. This study employs a descriptive survey research design to analyze the reading management strategies implemented by Key Stage teachers and assess their effectiveness in addressing these challenges. The primary objectives of the study are to (1) identify instructional methods used by teachers to enhance students' reading proficiency, (2) examine the challenges educators face in implementing reading programs, and (3) evaluate the overall effectiveness of current reading interventions. A structured survey questionnaire was developed and administered to Key Stage teachers, gathering data on demographic profiles, instructional strategies, challenges in reading management, and the efficacy of implemented interventions. The study revealed that while educators widely use strategies such as phonics instruction, fluency drills, comprehension activities, and differentiated learning approaches, many students continue to struggle with literacy. Pre-test results indicated that 80% of students had difficulties with reading fluency and comprehension, with only 20-30% reading at grade level. However, post-test results showed a marked improvement, with 72-80% of students demonstrating enhanced reading skills after targeted interventions, including phonics-based instruction, remedial sessions, and individualized support. Despite these gains, the study highlights the need for further improvements in reading management strategies. It recommends strengthening teacher recruitment through scholarships and incentives, expanding professional development programs, integrating technology in reading instruction, fostering greater parental and community involvement, and enhancing structured reading interventions to address literacy gaps. These findings emphasize the necessity of sustained efforts and evidence-based approaches to ensure that all students acquire essential literacy skills for academic success and lifelong learning.

**Keywords:** *Reading Management, Literacy Development, Teacher Strategies, Student Proficiency, Reading Interventions*



## SCALING THE COMMUNICATION AND CRITICAL-THINKING SKILLS OF 2ND YEAR COLLEGE STUDENTS MAJORING IN ENGLISH OF THE SCHOOL OF TEACHER EDUCATION AT UNIVERSIDAD DE DAGUPAN USING DEBATE AS A TECHNIQUE

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### Abstract:

This study dealt with scaling the communication and critical thinking skills of the students in English. Experimental method was used with the one group pre-test and post-test design. The study aimed to find out the effectiveness of Debate as a technique in scaling the communication and critical thinking skills of the 2nd year college students majoring in English during the school year 2023-2024. All the twelve (12) 2nd year college students majoring in English in class handled by the researcher were the sources of data. The instrument of the study was pre-test and post-test. The gathered data were analyzed and computed through the following tools: Descriptive statistics and T-test. Based on the findings the mean score in the posttest is significantly higher than pretest. The 2nd year college students majoring in English performed better with the use of debate. The researcher includes The study concludes that scaling the communication and critical thinking skills is not an easy task; to make it more efficient and helpful for 2nd year college students majoring in English. To be a dynamic and innovative teacher, the teacher can apply the appropriate strategy like debate as a technique to improve communication and critical thinking. Furthermore, the researcher strongly recommends that future teacher researchers conduct a parallel study on the use of the debate as a technique in scaling the communication and critical thinking skills in other subjects.

**Keyword:** *Communication and Critical thinking skills, Debate as a technique, 2nd year college students majoring in English.*



## ATTRIBUTES, THRIVING AND WORK PERFORMANCE OF GUIDANCE PRACTITIONERS IN HIGHER EDUCATIONAL INSTITUTIONS IN DAGUPAN CITY

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### Abstract:

This study primarily aimed to determine the level of thriving and level of work performance as well as the relationship of these two variables. Additionally, this study determined variances in thriving and work performance across profiles. The data collected from the respondents used as basis for the development of the enhancement program for guidance practitioners which aim to achieve upskilling and contribute to the delivery of quality and relevant guidance and counseling services. This study employed a descriptive correlational design to determine the relationship between thriving and work performance. The comparative research design was also utilized in this study to examine the variances in terms of thriving and work performance relative to the profile of the respondents which are age, sex, and years in service. The data were statistically analyzed using frequency count, percentage, mean, pooled mean, t-test, and Spearman's rho coefficient correlation. The results of the findings showed that the guidance practitioners employed in higher educational institutions (HEIs) in Dagupan City are mostly young adults who fall within the age range of 23-29 years old, are mostly females, and most of the respondents have been employed for four (4) years or less in their respective institutions. The data gathered from the respondents revealed a strong level of thriving and a high level of work performance. Statistical significance was not found among the guidance practitioners in terms of level of thriving and level of work performance across the demographic profile. This means that the respondents have similar levels of thriving and work performance in relation to age, sex, and years in service. Researcher concluded that guidance practitioners in Dagupan City are generally thriving and are committed to their work regardless of sex, age, and years in service. Thriving individuals are also dedicated to exhibiting high levels of work performance in their work.

**Keyword:** *Guidance practitioners, Dagupan City, thriving, work performance, enhancement program, and dedicated level*



## UNLOCKING POTENTIAL: TRANSFORMING LESSON PLANNING WITH UNIVERSAL DESIGN FOR LEARNING (UDL) STRATEGIES

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### Abstract:

This study aimed to investigate the following problems: The ability of teacher education students to integrate inclusive practices into their learning plans; The study investigates the level of understanding and implementation of inclusive education principles in the preparation of lesson plans by teacher education students before and after the intervention. The study investigated at how teacher education students' abilities to create and carry out inclusive lesson plans differed significantly before and after the intervention. It concentrated on how the intervention enhanced this skill. There were nine students, one male and 8 females, who were selected as the respondents in the action research. The quasi-experimental design with a single group pre-test and post-test assessments was used to compare the effectiveness of the intervention. Data analysis revealed a significant increase in the quality of lesson plans, with mean scores rising from 8.67 to 14.67, and a notable reduction in variability. Statistical analysis, using a paired sample t-test, confirmed the intervention's effectiveness, with a p-value of  $< .001$  indicating a highly significant improvement. It is recommended that a transformative lesson plan with Universal Design for Learning (UDL) strategies should be implemented in Special Education and should be tried in the elementary levels, Grades 1-6. Overall, this study highlights the positive impact of targeted interventions in enhancing inclusive teaching practices among future educators.

**Keyword:** *Universal Design for Learning (UDL), Inclusive Education, Intervention, Teacher Education, Lesson Plan*

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## DIGITAL INTELLIGENCE QUOTIENT (DQ) OF SECONDARY MATHEMATICS TEACHERS IN URDANETA CITY: BASIS FOR TECHNOLOGY-ENHANCED MANAGEMENT

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### Abstract:

The rapid advancement of Industrial Revolution 4.0 has fundamentally transformed educational landscapes, compelling educational systems to integrate digital production technology strategically. As technological innovations continuously reshape pedagogical approaches, there is an urgent need for a comprehensive understanding of educators' digital intelligence. This study specifically assessed the Digital Intelligence Quotient (DQ) of secondary mathematics teachers in Urdaneta City, aiming to provide critical insights for technology-enhanced management in educational contexts. Utilizing a quantitative, correlational research design, the researchers employed the Digital Intelligence Assessment for Teachers (DIAT) to evaluate 31 Grade 8 mathematics teachers comprehensively. The assessment measured digital intelligence across three critical dimensions: Digital Citizenship, Digital Creativity, and Digital Competitiveness. The instrument employed a 5-point Likert scale to capture nuanced insights into teachers' digital capabilities and preparedness for integrating technology. Results revealed a high overall digital intelligence level with a mean of 3.70, demonstrating the teachers' considerable technological adaptability. Digital Citizenship emerged as the most vigorous dimension (mean = 3.88), indicating a robust awareness of digital security, privacy regulations, and responsible online behavior. Digital Competitiveness was followed closely (mean = 3.66), while Digital Creativity scored relatively lower (mean = 3.57), suggesting potential areas for professional development. Notably, strong positive correlations were observed between all dimensions, with the most pronounced relationship existing between Digital Creativity and Digital Competitiveness ( $r = 0.969$ ). This finding underscores the interconnected nature of digital skills and highlights the importance of holistic technological training approaches. The findings indicate that while teachers exhibit a strong awareness of digital applications, security practices, and privacy regulations, they require additional support in enhancing collaborative and creative digital skills. The study recommends targeted professional development programs focusing on developing teachers' digital creativity capabilities, ethical digital engagement, and leadership in digital initiatives. By systematically addressing these areas, educational institutions can substantially enhance overall digital intelligence and improve mathematics instruction in secondary education, thereby preparing educators for the technological demands of modern teaching environments.

**Keywords:** *Digital Intelligence, Mathematics Education, Technology Integration, Professional Development, Digital Competence*



## AIMING FOR EXCELLENCE: THE ACHIEVERS MODEL AS A PARADIGM FOR ELEVATING STUDENT ENGAGEMENT AND LEARNING IN HIGHER EDUCATION

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### Abstract

Higher education is a transforming process in which students learn and prepare for their future careers, citizenship, and lifelong learning. However, in the rapidly changing educational scene, numerous teaching models are needed that not only improve the academic success but also promote students' personal development and facilitate social responsibility. This explanatory study aimed to assess the ACHIEVERS Model in higher education, an innovative classroom management framework intended to improve student engagement and learning addressing essential components that fosters academic success and holistic development of learners. ACHIEVERS stands for Assuring learner's readiness through Learning Management System (LMS) activity; Communicating topic standards, objectives, and outcomes; Highlighting appropriate teaching strategies or methodologies; Integration of media and technology; Engaging in classroom activities; Value discovery aligned with institutional core values; Evaluating learner's performance; Reflecting on class performance; and engagement on Sustainable Development Goals (SDGs) activities. The study was conducted with 200 undergraduate students, over two semesters and two programs using a mixed methods approach. Surveys on satisfaction, engagements, and academic scores on assessment were collected for quantitative data, whereas qualitative data were collected on focus group discussions and reflective journals. Results shown that there was an improvement in student preparedness, engagement, academic performance and value-driven learning experiences. Similarly, the intervention promoted technology integration and alignment with SDGs resulting in global and responsible learning among learners. ACHIEVERS Model offers a holistic approach that did not only enhance academic success and prepares students for lifelong learning but also developed a character and societal responsibility. Each parts of the model contributes towards creating an atmosphere of profound learning, engagement, and preparation for future challenges. The findings recommended that ACHIEVERS Model can be used as a framework by other institutions that seek to elevate academic excellence and provide holistic development of students.

**Keyword:** Higher Education; ACHIEVERS Model; Holistic Approach; Academic Success; Societal Responsibility



## IMPROVING THE PUBLIC SPEAKING SKILLS OF AB COMMUNICATION STUDENTS THROUGH THE USE OF STANISLAVSKI'S METHODS OF ACTING

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### Abstract:

Public speaking is a vital skill for students pursuing careers in media and communication, yet many struggle with anxiety and a lack of confidence when addressing an audience. This action research aimed to explore the effectiveness of utilizing Stanislavski's Acting Methodology to enhance the public speaking skills of AB Communication students at Universidad de Dagupan. Rooted in the "Magic If" principle, Stanislavski's techniques emphasize internalization, body language, vocal control, and audience engagement—components critical to both acting and public speaking in theater-based exploration. A survey conducted among 23 students revealed a high prevalence of public speaking anxiety, underscoring the urgent need for targeted intervention. The study measured students' public speaking proficiency through pre-test and post-test performance assessments before and after the implementation of Stanislavski-based exercises. The intervention focused on theater-based practices such as improvisation, role-playing, and internal character development. Data were statistically analyzed to determine the significance of improvement in students' performance. Results indicated a noticeable enhancement in students' confidence, clarity, and engagement during public speaking tasks following the intervention. This research highlights the potential of integrating theater techniques into communication training and offers valuable insights for curriculum development within higher education. It also emphasizes the importance of experiential learning approaches in addressing public speaking challenges. Ultimately, the study advocates for a more creative and immersive strategy to prepare students for professional environments where effective communication is paramount.

**Keyword:** *public speaking, Stanislavski-based method, theater, communication*



## BLEPT PREDICTORS: A CORRELATIONAL STUDY OF THE PERFORMANCE OF TEACHER EDUCATION GRADUATES IN CAPSTONE EDUCATION COURSE AND LICENSURE EXAMINATION

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### Abstract

The Board Licensure Examination for Professional Teachers (BLEPT), formerly known as Licensure Examination for Teachers, is a national examination administered by the Professional Regulation Commission, designed to assess the qualifications, competencies, and readiness of aspiring teachers. The licensure examination covers various subjects including General Education, Professional Education, and a specialization subject for the secondary level. Passing this examination is a good indicator that the competencies and standards reflected in the Philippine Professional Standards for Teachers were acquired by the graduates during their preservice training. This study aimed to analyze the relationship existing between the performance of the teacher-education graduates in their Capstone Education (CapEd) courses and licensure examination, to further strengthen the graduates' chance of passing the BLEPT. Furthermore, it aimed to identify the challenges encountered by the graduates while preparing for the licensure examination, as well as their review strategies. Descriptive-correlational research design was utilized in this study. Results showed that there is a significant relationship that exists between the performances of teacher-education graduates in all of their Capstone Education courses: CapEd 1 (General Education) and CapEd 2 (Professional Education); CapEd 1 and CapEd 3 (Specialization); and CapEd 2 and 3. Additionally, there is a significant relationship that exists between CapEd 1 and LET Subject 1 with a Sig-Value of 0.000 and  $r = 0.690$  which implies high positive correlation, there is also a significant relationship between CapEd 2 and LET Subject 2 with a Sig-Value of 0.000 and  $r=0.691$  which denotes high positive correlation, and a significance of relationship between the average performance of the teacher-education graduates in Capstone Education courses and LET rating with a Sig-Value of 0.004 and  $r=0.586$  which infers moderate positive correlation. The researchers concluded that the performance of a teacher-education student in Capstone Education courses can be a predictor of passing the BLEPT.

**Keywords:** BLEPT Predictors, Correlational Study, Performance, Teacher-Education, Capstone Education Course, Licensure Examination



## MODULAR APPROACH-BASED LANGUAGE TEACHING AT THE TIME OF PANDEMIC: A HERMENEUTIC PHENOMENOLOGY

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### Abstract

To avert the learning loss and to mitigate the education crisis that was worsened by the health emergency, countries ventured into distance learning. In the Philippines, the Complex Adaptive Blended Learning Systems (CABLS) Framework was designed to help teachers shift from face to-face learning to distance learning which has six subsystems: the learner, the teacher, the technology, the content, the learning support, and the institution. In this regard, the study explored the lived experiences of the Oral Communication in Context teachers in the District of Anda, Schools Division Office of Pangasinan I through the modular distance learning during disruptive times in order to generate implications in the development of framework toward improving English teaching delivery in times of emergency and crisis. This employed hermeneutic phenomenology. To obtain the data for the study, a semi-structured interview guide was utilized. The transcribed data were analyzed through interpretive phenomenological analysis and Braun and Clarke method of thematic analysis. After thorough reading of the transcripts and careful determining of the themes, five superordinate themes have been formed from the generated data: *Preparing for Battle, Serving at the Frontline, Teaching Beyond the Four Corners of the Classroom, Living with the Deadly Foe, and Winnings and Silver Lining in the Time of Darkness*. Teaching of English in modular setup was challenging for them as it was their first time. Following the system of implementing modular distance learning made them comfortable about it. The onset of COVID-19 pandemic made the participants value more their health and well-being. Despite the anxiety and stress they had, the pandemic made them discover that they can improve themselves. The findings of the study revealed that the English subject teachers are adaptive to any emergency or crisis. This is what CABLS Framework suggests that the teachers need to be flexible in whatever mode of learning is being implemented.

**Keywords:** *Modular Approach, Language Teaching, Hermeneutic Phenomenology, Pandemic*

## ENHANCING LEARNING OF SCIENTIFIC CONCEPTS THROUGH PROJECT “LENSES”

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### Abstract

Education in this 21st century aims to encourage students to have the support skills to be responsive to changes along with the times. Wijaya, et al. (2016), states that there needs for a change in mindset from humans or students Metiri Group (2006) stated that the skill that must be have by students in the 21st century is literacy skill. Science literacy is the ability to understand the concepts and processes of science and utilize science to solve the problems in everyday life. In response to the problems related to malperformance of learners, this study probed the effectiveness of Project LENSES (Leading to Excellence and Nurturing Students’ Engagement in Science) in improving scientific concepts learning of Grade 7 students in Catablan Integrated School during the first quarter period of the school year 2023-2024. This study used the true experimental research design. The participants of this study were the 41 Grade 7-Gold (Experimental Group) composed of 23 male and 18 female who were exposed Project LENSES and 43 Grade 7-Silver (Control Group) composed of 25 male and 18 female of Catablan Integrated School for the school year 2023-2024. This two established section and grouped heterogeneously based on their academic performance before the start of the school year. The 50-item pre-test and post-test for the Grade 7 science using the learning competencies, to wit: describe the components of a scientific investigation, recognize that substances are classified into elements and compounds, distinguish mixtures from substances based on a set of properties, investigate properties of unsaturated or saturated solutions and express concentrations of solutions quantitatively by preparing different concentrations of mixtures according to uses and availability of materials. Based on the results of the 50-item pre-test, it showed that there is no significant difference between the performance of the experimental group and the control group in the pre-test conducted before the experiment relative to the critical value of 0.894. Further, it showed that there is a significant difference between the performance of the experimental and control group based on the results of the 50-item post-test results based on the critical value of 0.006. This indicates that student’s engagement in every activity provided by the teacher during class discussion of the concepts in science will lead to their better learning experiences and mastery of the content.

**Keywords:** *Scientific Concept Learning, Student Engagement, Action Research*



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## EXPLORING TECHNOLOGY-ENHANCED EDUCATIONAL MANAGEMENT (TEEM) FOR HOLISTIC STUDENT DEVELOPMENT

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### Abstract

This study examines how BPED students use digital learning platforms and evaluates their effectiveness in boosting academic performance, collaboration, and engagement. A survey of 51 students shows that online platforms are extensively used for completing coursework, communicating, and sharing resources. While these platforms provide accessibility and convenience, many students lack familiarity with advanced research software, highlighting a gap in technical skills that needs attention. Digital tools can get students to the right resources and to each other more easily, but they don't quite do enough to get students really engaged with their studies-or to help teachers make the most of the data they collect. That suggests technology is mainly helping with the basics of academic work-and not the deeper stuff like critical thinking and independent research. To bridge that gap, we should be teaching students the right digital skills—particularly in research and data management—through structured training programs and research-focused digital tools. By doing that, we can give them the academic success they need and the skills to succeed in their careers. What these findings really show is that educational institutions need to be ready to adapt to technological change. By teaching students the digital skills they need, we can help them thrive in today's learning environments and meet the demands that come their way in both their studies and their careers. This study aims to explore the integration of technology in the educational management of Bachelor of Physical Education (BPED) students by addressing key research questions. Specifically, it seeks to identify the types of technology utilized in managing educational activities within the BPED program. Additionally, the study examines the extent to which BPED students engage in technology-enhanced education management (TEEM) practices, assessing their frequency and application in academic tasks. Furthermore, it evaluates the level of effectiveness of BPED students in utilizing TEEM, determining how well these technological tools contribute to their learning and overall academic performance. Lastly, the study investigates the relationship between the students' TEEM practices and their effectiveness in using these tools, aiming to provide insights into how digital integration enhances learning outcomes and educational management in the BPED program.

**Keywords :** *technology in education, digital learning platforms, academic performance, higher education, educational management*



## THE EFFECTIVENESS OF DUAL CODING ON ENHANCING MEMORY AND ATTENTION SPAN AMONG GRADE 7 LEARNERS AT PACAC HIGH SCHOOL

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### Abstract

Memory and attention span are essential cognitive skills that influence students' academic performance, particularly in language learning. However, many Grade 7 learners struggle to retain information and stay focused, often due to traditional teaching methods that lack visual and interactive support. This study aimed to assess the effectiveness of the Dual Coding Strategy (DCS)—a method combining visual and verbal elements—in enhancing memory retention and attention span among Grade 7 learners at Pacac High School during the academic year 2024–2025. A quantitative research design with a quasi-experimental method was employed. Forty-six participants from two Grade 7 sections underwent a two-week intervention. The research instruments included validated and reliable pre-test and post-test assessments focused on memory retention and attention span. The results were statistically analyzed using paired sample t-tests. Findings revealed a substantial improvement in both areas after the implementation of DCS. The memory retention mean score increased from 20.24 to 28.37, while attention span rose from 25.72 to 37.76. Both results were statistically significant at the .01 level ( $p = .000$ ), confirming the positive effect of the strategy. The results suggest that the Dual Coding Strategy is an effective tool for improving memory and attention span in early secondary learners. Its use may lead to better cognitive engagement and academic performance. This study supports the inclusion of multimodal strategies like DCS in teaching practices to align with the cognitive needs of 21st-century learners.

**Keywords:** *Dual Coding Strategy; memory retention; attention span; Grade 7 learners; multimodal learning*



## PARENTAL INVOLVEMENT ON ACADEMIC PERFORMANCE OF GRADE 6 PUPILS AT GUIMBA WEST CENTRAL SCHOOL

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### Abstract:

This study determined how parental involvement affects the academic performance of Grade 6 pupils at Guimba West Central School. Using a descriptive-correlational research design, the study included 100 pupils and their parents, examining six areas of involvement: parenting, communication, volunteering, learning at home, decision-making, and community collaboration. Results showed that a majority of students performed well academically, with 51% achieving outstanding grades (90–100) and 42% earning very satisfactory grades (85–90). A significant link was found between the type of gadgets students used and their academic performance ( $p = 0.015$ ), suggesting that technology access may influence learning outcomes. In contrast, demographic factors such as sex, birth order, and hobbies did not show a meaningful impact on academic performance. Regarding parental involvement, characteristics like age, sex, education, and occupation were generally not linked to involvement levels, except for occupation. Parents with flexible jobs were more involved in educational decision-making ( $p = 0.048$ ), likely due to having more time to participate in school-related matters. Interestingly, among the six areas of involvement, only communication between parents and the school had a significant—but negative—correlation with academic performance ( $p = 0.011$ ). This may indicate that such communication often increases when students face academic difficulties, suggesting that timely engagement is crucial. Although parental involvement positively influences academic success, its impact varies across different forms. Communication emerges as the most significant, particularly in recognizing and addressing pupils' academic difficulties. This underscores the importance of building strong, proactive collaboration between parents and teachers.

**Keywords:** *parental involvement; academic performance; grade 6 pupils; communication; descriptive-correlational design.*



## COURSE AUDIT PROGRAM OF WORLD CITI COLLEGES, GUIMBA CAMPUS IN PREPARATION FOR CRIMINOLOGIST LICENSURE EXAMINATION: A COMPREHENSIVE ASSESSMENT

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### Abstract :

This study evaluated the effectiveness of the Course Audit Program implemented at World Citi Colleges (WCC) – Guimba Campus in preparing Criminology students for the Criminologists Licensure Examination (CLE). With the increasing demands for quality education and board examination readiness, the study aimed to assess how well the program supports academic preparedness and competency among graduating students. Specifically, the research focused on 35 Criminology graduates from Batch 2024 who completed the Course Audit Program during the academic year 2023–2024. Using a descriptive-evaluative research design, data were collected through structured questionnaires and analyzed to determine students' perceptions of the program's effectiveness. The findings indicated that the Course Audit Program significantly contributed to enhancing academic knowledge, reinforcing discipline-specific competencies, and boosting students' confidence in tackling licensure exam-related content. Respondents acknowledged that the program helped bridge academic gaps and deepened their understanding of essential criminology subjects. However, the study also uncovered areas that require improvement, including the inconsistent lecture pacing specifically when lecturers speak too fast or too slow and Time management. In response, the researchers developed an action plan focusing on curriculum updates, adjusting lesson pace, clarifying instructions, and using diverse teaching methods to accommodate various learning styles and the application of more targeted instructional strategies. In conclusion, the study affirms the Course Audit Program's critical role in preparing students for the CLE and underscores the need for ongoing program evaluation and enhancement to maintain its relevance and effectiveness. These findings can inform future policy and program development aimed at improving licensure readiness among criminology graduates.

**Keyword:** *Course Audit Program; Criminology Education; Criminologists Licensure Examination; Academic Preparedness Students Performance*



## ADAPTIVE BARRIERS TO BIOFUELS AND ELECTRIC VEHICLE CHARGING STATIONS IN GUIMBA, NUEVA ECIJA

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### Abstract

The global shift towards cleaner and more sustainable energy options has heightened interest in alternative fuels. As the Philippines strives to address climate change and lessen reliance on fossil fuels, the incorporation of biofuels and electric vehicle (EV) charging stations is becoming increasingly significant. This study investigates the perceptions and barriers to adopting these technologies among business operators in Guimba, Nueva Ecija, a rural area that provides valuable insights into the adoption of sustainable energy within agricultural contexts. Specifically, the study aimed to: (1) describe the demographic profile of the respondents; (2) assess their perception of biofuels and EV charging stations in terms of perceived usefulness and ease of use; (3) determine significant relationships between demographics and perception; (4) identify perceived barriers; and (5) offer recommendations based on the findings. Utilizing descriptive correlational design and purposive sampling, data were collected from 50 business operators at 10 gasoline stations using a validated questionnaire. Findings revealed strong agreement on the environmental benefits of biofuels and the future readiness of EV charging stations. However, ease of use was rated moderately, with biofuels and EV charging stations indicating implementation concerns. Correlational analysis showed significant relationships between perception and sex, and nature of business. The most cited barrier was high initial cost. While there is clear interest and awareness of alternative fuels, financial and operational constraints remain key concerns for widespread adoption.

**Keywords:** *alternative fuels; biofuels; business perception; electric vehicle charging stations; sustainable energy adoption*



## COMPARATIVE ANALYSIS BETWEEN INQUIRY-BASED LEARNING AND SELF-AUTONOMY LEARNING APPROACH ON MATHEMATICAL PERFORMANCE AMONG GRADE – 10 STUDENTS IN BARTOLOME SANGALANG NATIONAL HIGH SCHOOL

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### Abstract

Understanding the different approaches in learning is a vital key in determining which strategy best supports learner's mathematical performance in a 21<sup>st</sup> century classroom. Nevertheless, students struggle with the abstract nature of mathematics, considering that it is expected that mathematical problems must be explored through the use of complex mathematical skills. This study aimed to compare the effectiveness of Inquiry-Based Learning (IBL) and Self-Autonomy Learning (SAL) Approach on Mathematical Performance of Grade 10 Students in Bartolome Sangalang National High School during the academic year 2024-2025. The study utilized a quantitative research design and a quasi-experimental approach. Forty-six students from 10 – Aljon and Thirty-four students from 10 – Arjanne participated in this study, amounting to a total of 80 students. An equivalence test was employed for both groups in determining the top 20 scorers that proceeded to the 2-week intervention, wherein 20 students from 10 - Aljon were guided through the use of IBL and 20 students from 10 – Arjanne are instructed to use SAL. The participants are assessed through the use of research instruments involving validated and reliable pre-test and post-test measuring data interpretation, conceptual understanding, procedural fluency, and problem-solving and critical thinking. The results are analyzed using frequency distribution, paired samples t-test and independent samples t-test. The analysis revealed a significant progress for 10 – Aljon and 10 – Arjanne in all domains after the implementation of IBL and SAL. Both groups improved in all areas with notable gains in which from the majority of “Very Poor” performance level the students gained “Good” performance level after the intervention. However, the results showed that students using IBL with a mean score equal to 15.90 performed better than the students who used SAL with the mean score of 14.60. Although both approaches made a drastic improvement to the mathematical performance of the students, the results revealed that IBL is more efficient than SAL. Its ability to promote deeper understanding and higher-order thinking suggests that educators should prioritize IBL in classroom instruction. Although, combining it with SAL can further support student independence and long-term retention, creating a balanced and effective learning environment.

**Keywords:** *Inquiry-Based, Self-Autonomy, Data Interpretation, Conceptual Understanding, Procedural Fluency, Problem-Solving and Critical-Thinking*

## ENGLISH PROFICIENCY LEVEL OF WCC AERONAUTICAL AND TECHNOLOGICAL COLLEGE: BASIS FOR COMPREHENSIVE ENGLISH PROFICIENCY PROGRAM

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### Abstract

This study aimed to develop and validate a standardized English Proficiency Assessment (EPA) tool tailored for students at WCC Aeronautical and Technological College (WCC ATC), guided by the Common European Framework of Reference for Languages (CEFR) B1 proficiency level. A mixed-methods approach was employed, involving 30 randomly selected students from aviation and tourism programs and 5-8 purposively sampled English instructors. Data were collected through surveys, interviews, and focus group discussions, while the EPA tool's validity and reliability were assessed using Principal Component Analysis (PCA) and Cronbach's alpha. Results revealed that current assessment methods at WCC ATC—primarily written exams, oral presentations, and class participation—lack standardization and fail to comprehensively evaluate practical communication skills. The newly developed EPA tool demonstrated strong construct validity (93.2% variance explained) and high reliability across subscales ( $\alpha = 0.79-0.91$ ), except for writing, which showed moderate consistency. The tool was rated highly acceptable (composite mean = 3.75) by instructors for its relevance, clarity, completeness, accuracy, and usefulness in diagnosing language proficiency. The study concludes that the EPA tool addresses critical gaps in English proficiency assessment at WCC ATC, aligning with international standards and aviation industry demands. Recommendations include refining the writing assessment, integrating spontaneous speaking tasks, and conducting longitudinal studies to validate predictive efficacy. This tool offers a robust framework for enhancing language education and preparing students for global aviation careers.

**Keywords:** *English proficiency, CEFR, aviation communication, language assessment, reliability, validity*

## PERFORMANCE EVALUATION OF STUDENT SERVICES IN KEY DEPARTMENTS AT WCC AERONAUTICAL AND TECHNOLOGICAL COLLEGE BINALONAN CAMPUS

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### Abstract

Student service departments play a crucial role in enhancing academic success and personal development by ensuring responsive, professional, and well-equipped support systems. This study aimed to evaluate the performance of student service departments at WCC Aeronautical and Technological College (WCCATC) during the first semester of S.Y. 2024–2025. Specifically, it assessed service quality, personnel effectiveness, and facility adequacy across 12 departments. Using a cross-sectional survey design, 500 students from the Aeronautical Engineering, Aircraft Maintenance Technology, and Avionics Technology programs were randomly selected to participate. Data were collected through a structured questionnaire, validated with a Cronbach's alpha of 0.89, and analyzed using descriptive statistics. Results revealed that the Department of Student Affairs and Library Department outperformed other units, achieving high scores in responsiveness, professionalism, and functionality. Conversely, the Supplies and Housekeeping Departments showed the lowest performance, with significant gaps in time of response, resource availability, and facility adequacy. The study also highlighted significant disparities across departments, emphasizing the need for targeted improvements. Notably, the integration of a proposed mobile application for Supplies Services would enable students to monitor uniform orders, make payments directly to the Accounting Office, and streamline operations, showcasing an innovative solution to operational challenges. The findings underscore the importance of regular evaluations, resource optimization, and cross-departmental collaboration in achieving service excellence. By addressing identified gaps and leveraging strengths, WCCATC can enhance student satisfaction, improve retention, and maintain its standing as a premier institution for aviation education.

**Keywords:** *student services; service quality; personnel effectiveness; facility adequacy; aviation education*



## BEYOND PUNISHMENT: CULTURAL, SOCIAL AND INSTITUTIONAL FACTORS INFLUENCING STUDENTS' VIOLATION TO SCHOOL POLICIES

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### Abstract

This study investigates the factors contributing to policy violations among students at WCC Aeronautical and Technological College (WCC ATC). The findings indicate that the majority of offenders are younger male students, particularly those aged 21 to 23 and enrolled in aviation-related programs. Developmental factors, such as identity formation and peer pressure, appear to contribute to higher violation rates among early college students. Administrative violations, including identification issues and dress code infractions, are the most common, followed by curfew and substance-related offenses. Analysis reveals that institutional factors, including inconsistent rule enforcement and limited awareness, are the primary contributors to policy violations (mean = 3.23), while social factors such as peer influence play a moderate role (mean = 2.89), and cultural factors have minimal impact (mean = 2.11). Age significantly influences perceptions of social pressures ( $p = 0.001$ ), whereas gender and academic program do not significantly affect perceptions of cultural, social, or institutional factors. Furthermore, cultural factors are found to significantly predict policy violations, suggesting that addressing personal beliefs and values is crucial for effective intervention. To mitigate violations, PROJECT ALIGN at WCC ATC seeks to foster a culture of discipline through reflective sessions, peer mentorship, and consistent policy enforcement. Recommendations include targeted support for younger students, enhanced policy communication, and the integration of cultural awareness initiatives. This approach aims to reduce misconduct, strengthen compliance, and align student values with professional aviation standards.

**Keywords:** *policy violation, institutional factors, cultural factors, social factors, aviation education, misconduct*



## EFFICIENCY OF ORANGEAPPS SYSTEM IN THE PERFORMANCE OF SELECTED PERSONNEL AND STUDENTS OF WORLD CITI COLLEGES

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### Abstract

OrangeApps system is a platform that provides all-in-one secured environment to communicate and manage documents and facilitate events among other features. This study was conducted to determine the level of user's assessment using OrangeApps which may affect the efficiency of the OrangeApps system among World Citi Colleges. The study used descriptive research design utilizing survey questionnaire as a research instrument and probability random sampling procedure. Descriptive statistical tools such as frequency counts, percentage, rank and overall weighted mean and correlation analysis was done by using Pearson's Product Moment Correlation, Spearman Rho and Spearman Rank Test were utilized. The respondents of the study were the 160 selected personnel and students of WCC and WCC AC campuses. Demographic profile and the efficiency of OrangeApps system and performance of respondents were utilized. The study found out that personnel-respondents have very good rating on the performance evaluation from first semester A.Y. 2022-2023 and the student-respondents have an average rating through the academic evaluation from first semester A.Y. 2022-2023. Based on the findings, age had a negative significant correlation with the level of efficiency of OrangeApps system in terms of functionality and security. This means that the younger the age the respondents is, they most likely have better assessment on the level of efficiency of OrangeApps system. Civil status was negatively correlated with the level of efficiency of OrangeApps system. This meant that single respondents were most likely having better assessment on the level of efficiency of OrangeApps system. On the other hand, sex, position, highest educational attainment and performance rating of the categories of the socio-demographic profile of selected personnel-respondents are not significantly related to the level of efficiency of OrangeApps system. For the student-respondents, the hypothesis of no significant relationship between the socio-demographic profile of the student-respondents and the level of efficiency of OrangeApps system was rejected. This implies that the demographic profile of the student does not significantly affect the level of assessment using OrangeApps system. The findings call for semestral orientation using OrangeApps system to both personnel and student-respondents which will lead to better performance. Hence, the conduct of a parallel study in a broader parameter is recommended.

**Keywords:** *academic achievement; demographic profile; functionality; OrangeApps system and performance rating*



## DEVELOPMENT OF SURVIVAL AND RESCUE TRAINING MANUAL

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### Abstract

This study evaluated the validity of a newly developed Survival and Rescue Training (SRT) manual for WCC Aeronautical & Technological College through a mixed-methods approach. The research assessed (1) current training material deficiencies, (2) essential manual features, and (3) the manual's validity and acceptability. Data from five SRT instructors revealed significant gaps in existing resources, including inconsistent material availability (M=2.80), limited student access to equipment, and lack of standardized updates. The proposed manual demonstrated strong validity across five dimensions, scoring highest in usefulness (M=3.67) and relevance (M=3.33), though clarity required improvement (M=2.80). All sections received "Highly Needed" ratings (Composite M=3.35-3.65), particularly for CPR procedures (M=4.00) and fire safety protocols (M=4.00). Acceptability testing yielded "Highly Acceptable" scores (M=3.73-3.93), confirming its alignment with training objectives. The study concludes that while the manual effectively addresses current program limitations, implementation should incorporate enhanced visual aids, simplified technical language, and regular content updates to maintain compliance with evolving aviation safety standards. These findings contribute to improved survival training methodologies in aeronautical education and warrant further research on technology-enhanced training applications.

**Keywords:** *survival training, rescue manual validation, aviation safety education, training material development, mixed-methods evaluation*



## DEVELOPMENT OF DIGITAL MOCK EXAMINATION SYSTEM FOR AERONAUTICAL ENGINEERING PROGRAM IN WCC-ATC BINALONAN

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### Abstract

This study designed and evaluated a Digital Mock Examination System tailored for Aeronautical Engineering students at WCC Aeronautical Technological College (WCC-ATC), Philippines, to address inefficiencies in traditional paper-based exams, including manual grading, administrative burdens, and delayed feedback. Employing a descriptive-developmental methodology guided by the Input-Process-Output (IPO) model, the research developed a validated question databank aligned with licensure standards, reviewed by faculty and industry experts. Usability was assessed using the Software Usability Measurement Inventory (SUMI) framework, with data collected from 46 students and analyzed via weighted mean, frequency, and percentage. Results indicated robust content validity for the question databank (mean rating: 4.86, Very Highly Validated). Usability testing revealed high scores across SUMI dimensions: Learnability (mean=4.63, Very Highly Usable), followed by Helpfulness (4.45), Control (4.42), Efficiency (4.39), and Affect (4.33), all rated Highly Usable. The system's automated grading, anti-cheating protocols, and real-time feedback reduced faculty workload and improved student engagement. However, minor refinements in system speed and error prevention mechanisms were suggested. The findings highlight the system's potential to enhance licensure exam readiness and modernize aviation education. By aligning with national agendas like the Philippine Development Plan and global goals such as SDG 4 (Quality Education), this study offers a scalable, user-centric model for institutions transitioning to digital assessments. Future work should prioritize technical optimizations and expanded accessibility features.

**Keywords:** *Aeronautical Engineering; Digital mock examination; system development; SUMI framework; usability evaluation.*



## CHARCOOL PROJECT: ASSESSING MARKET VIABILITY AND COMMUNITY SUPPORT ON SUSTAINABLE AGRICULTURAL WASTE MANAGEMENT AND UTILIZATION

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### Abstract

The CHARCOOL initiative exemplifies the evolution of a student-initiated project into a faculty-led research endeavor aimed at addressing climate change through innovative and sustainable solutions. The project focuses on transforming agricultural waste, particularly dried sugarcane leaves, into charcoal briquettes, presenting a viable alternative to traditional charcoal. This study evaluates the initiative's impact on production efficiency, environmental sustainability, and market viability while emphasizing its role in promoting sustainable waste management practices and carbon reduction. Experimental results demonstrate that CHARCOOL briquettes outperform conventional charcoal in key parameters, including ash content (3.5–5.0% vs. 4.0–6.5%), fixed carbon content (72–78% vs. 65–75%), and calorific value (28–32 MJ/kg vs. 24–27 MJ/kg). Additionally, they exhibit shorter ignition times, lower smoke emissions, and a reduced carbon footprint, underscoring their suitability for domestic and industrial applications. Market analysis reveals strong potential, with 72% of respondents willing to purchase briquettes at a preferred price range of PHP 60–80 and 81% open to adopting the product. The initiative's focus on sustainability, resource efficiency, and equitable labor practices positions CHARCOOL as an environmentally responsible solution addressing deforestation and climate change. Stakeholder engagement played a critical role in the project's success, fostering community involvement and promoting sustainable practices. The initiative has proven highly influential in improving waste management strategies, with an overall rating of 4.62 (Highly Influenced). It encouraged the repurposing of agricultural residues and demonstrated the practical application of academic research to real-world environmental challenges. The CHARCOOL initiative offers a replicable model for sustainable development by integrating environmental conservation, economic sustainability, and social responsibility. Recommendations include enhancing production efficiency, expanding market outreach, and fostering collaborations to scale the initiative, ensuring broader adoption and impactful contributions to climate change mitigation.

**Keywords:** charcoal briquettes, agricultural waste management, sustainable energy, climate change mitigation, research, innovation



## EDUTOURISM-FOCUSED MARKETING STRATEGIES AND CORPORATE SOCIAL RESPONSIBILITY INITIATIVES AMONG STANDARD HOTELS AND LODGINGS IN PANGASINAN

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### Abstract

This study investigates the marketing strategies employed by Department of Tourism (DOT)-accredited standard hotels and lodgings in Pangasinan to promote edutourism and corporate social responsibility (CSR) initiatives. Utilizing a convergent parallel mixed-methods approach, quantitative surveys and qualitative interviews were conducted to assess the effectiveness, challenges, and outcomes of these initiatives. Results show that social media, video marketing, and institutional partnerships are among the most effective channels for promoting edutourism and CSR, positively influencing guest perceptions and community engagement. However, the study also identifies barriers including limited funding, staffing constraints, and inadequate message customization. Despite these challenges, CSR and edutourism activities generate significant value in brand differentiation, stakeholder loyalty, and community partnerships. The findings support the need for enhanced communication strategies, targeted staff training, and collaborative program design to ensure long-term impact and sustainability within the hospitality sector.

**Keywords:** *edutourism; corporate social responsibility; hospitality marketing; mixed-methods; Pangasinan*

# **HOSPITALITY AND TOURISM MANAGEMENT**

## **HOSPITALITY AND TOURISM MANAGEMENT**

### **TABLE OF CONTENTS**

Title	Page No.
The Building Blocks of a Walkable Cordillera Mountains: Analyzing the Effectiveness of Accessibility for Tourist Satisfaction in Sagada <span style="float: right;"><b><i>Arga, et.al</i></b></span>	134
Hospitality Management-Related Skills Development in Working for a Multinational Fast-Food Chain Among University Students <span style="float: right;"><b><i>Mejia, et.al</i></b></span>	135
Satisfying Palates: The Sustainable Customer Satisfaction Effects of Ghost Kitchen to the Food Service Industry <span style="float: right;"><b><i>Condino, et.al</i></b></span>	136
Heritage Preservation and Cultural Mapping “E-Palabas” System <span style="float: right;"><b><i>Cabiles, et.al</i></b></span>	137
Tanaw: Augmented Reality Exploration For The National Museum Of Anthropology With Ai-Powered Interactive Guides <span style="float: right;"><b><i>Elfa, N.F.J., et.al</i></b></span>	138



## THE BUILDING BLOCKS OF A WALKABLE CORDILLERA MOUNTAINS: ANALYZING THE EFFECTIVENESS OF ACCESSIBILITY FOR TOURIST SATISFACTION IN SAGADA

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### Abstract

This research analyzes the effectiveness of accessibility in promoting tourist satisfaction in Sagada, a cultural and natural heritage site in the Cordillera Mountains of the Philippines. With a focus on major sites like the Hanging Coffins, Echo Valley, Baw-eng Coffee Shop, Sagada Public Campsite, and St. Mary's Episcopal Church, the study explores how walkability elements, such as trail conditions, signage, and safety, impact visitor experiences. Based on Disconfirmation Theory, a quantitative method was employed, surveying 100 tourists using structured questionnaires and field observations. Results show a strong correlation between walkability and tourist satisfaction, with accessibility issues frequently attributed to Sagada's rugged landscape and lack of infrastructure. The research stresses the need to incorporate indigenous knowledge and local participation in tourism planning to guarantee culturally appropriate and sustainable answers. The study suggests strengthening pedestrian infrastructure and visitor expectation management. Overall, the research demonstrates how careful accessibility planning can help both sustain tourist satisfaction and preserve Sagada's natural and cultural heritage.

**Keyword:** *walkability, accessibility, tourist satisfaction, Sagada, cultural heritage, sustainable tourism, Disconfirmation Theory*



## HOSPITALITY MANAGEMENT-RELATED SKILLS DEVELOPMENT IN WORKING FOR A MULTINATIONAL FAST-FOOD CHAIN AMONG UNIVERSITY STUDENTS

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### Abstract

Multinational fast-food chains represent a significant sector within the broader hospitality industry, offering unique opportunities for skill development among students. These globally recognized companies operate standardized food service systems across multiple countries, delivering fast and consistent customer experiences. In the Philippine context, numerous university students engage in part-time employment within these establishments, gaining workplace competencies that support their future careers in hospitality industry. In line with this, this study examines the development of hospitality management-related skills among university students working in multinational fast-food chains in Pangasinan. This study aims to assess the extent of skill development, identify challenges encountered, and propose interventions to enhance opportunities for students in hospitality management. A mixed-method approach was utilized, incorporating both quantitative and qualitative data. Primary data were collected through survey questionnaires and structured interviews with working students. The investigation centered on three core competencies: customer service, time management, and communication skills. The findings revealed that employment in fast food establishments provides students with opportunities to develop relevant professional skills. Respondents indicated moderate proficiency in customer service and communication, while time management emerged as a relative strength due to the need to balance academic and work-related responsibilities. The workplace environment, characterized by high-pressure and fast paced service demands, was found to play a critical role in reinforcing these competencies. However, several challenges were also reported, including frequent customer complaints, language barriers, inadequate training, and difficulties in maintaining work-life balance. In response to these findings, the study proposes interventions aimed at enhancing workplace learning, such as improved training programs, continuous skill development opportunities, and stronger support systems for student workers. These measures are intended to strengthen the professional growth of hospitality students and better align academic preparation with industry expectations. The outcomes of this study are relevant to hospitality educators, industry practitioners, and academic institutions, as they highlight the importance of experiential learning in shaping future professionals.

**Keywords:** *Hospitality Management Skills; Working Students; Skill Development; Multinational Fast-Food Chains*



## **SATISFYING PALATES: THE SUSTAINABLE CUSTOMER SATISFACTION EFFECTS OF GHOST KITCHEN TO THE FOOD SERVICE INDUSTRY**

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### **Abstract**

Delivery only food establishment, also known as Ghost Kitchens, have transformed the global food service industry dramatically, especially during the COVID-19 pandemic. Ghost kitchens are a new approach in the food service sector that maximizes space and resources in accordance with Sustainable Development Goals (SDG) number 9, Industry, Innovation, and Infrastructure. Additionally, this model is also aligned with SDG 11, Sustainable Cities and Communities, by becoming a model that does not need physical dining establishments, hence possible reduction of carbon footprints and diminishing physical sprawl. This descriptive study explores how Ghost Kitchens, particularly Papa's Choww Food Station in Fairview, Quezon City, are redefining customer satisfaction through a delivery-only business model. This study is based on assessing customer satisfaction through quantitative survey of 100 respondents using 7Ps of Marketing Mix; Product, Price, Place, Promotion, People, Process, and Physical Evidence. Furthermore, the study utilized a mall intercept method to effectively gather immediate feedbacks from diverse group of respondents considering their natural shopping environment. The results revealed that respondents were highly satisfied, especially with the Product, People, and Process criteria. However, components such as Price and Promotion were rated lower indicating that there was an opportunity for improvement. The study concludes that based on operational advantages and convenience, Ghost Kitchens are successful only if consistency, packaging, pricing strategies and digital engagement are effective. The suggested strategies for surviving competition include dynamic pricing, promotional efforts, and feedback cycle to keep the business sustainable in a changing market.

**Keyword:** *Ghost Kitchen; Model; Food Service Industry; Marketing Mix; Sustainable Business*



## Heritage Preservation And Cultural Mapping “E-Palabas” System

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### Abstract:

The e-Palabas system is a digital platform designed to preserve and showcase Dagupan City's cultural heritage. It addresses challenges such as limited access to historical artifacts, the absence of a physical museum, and the risk of deterioration of valuable records. By creating a comprehensive digital repository, the system ensures that the city's history is accessible to a broader audience. Developed using the Scrum methodology and a descriptive developmental research approach, the E-Palabas system continuously improves through feedback from users. The platform offers interactive maps, detailed timelines, and rich multimedia content that enhance tourism, education, and community involvement. User surveys indicate high satisfaction levels, particularly with the system's ease of use, design, and navigation, underscoring its positive impact and potential for wider adoption. The E-Palabas system plays a crucial role in supporting the City Tourism Office (CTO) in its efforts to document, preserve, and promote Dagupan City's cultural assets. Key recommendations for future development include the creation of a mobile application to improve accessibility, the integration of video upload features to enrich content, and the addition of user feedback options to ensure continuous improvement. By providing a user-friendly and accessible digital repository, the e-Palabas system ensures that Dagupan City's cultural heritage is preserved for future generations. Through the use of modern technology, it offers a sustainable solution to protect and celebrate the city's rich history and traditions, ensuring that they remain a vital part of the community for years to come.

**Keyword:** *e-Palabas, Cultural Mapping, Heritage Preservation, History, and Archiving*

## **TANAW: AUGMENTED REALITY EXPLORATION FOR THE NATIONAL MUSEUM OF ANTHROPOLOGY WITH AI-POWERED INTERACTIVE GUIDES**

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### **Abstract**

TANAW is a transformative capstone project designed to elevate visitor engagement and enrich educational experiences at the National Museum of the Philippines through an Android-based augmented reality (AR) application. Bridging technology and culture, TANAW offers an immersive, interactive platform that redefines museum exploration. At its core, the application integrates Artificial Intelligence (AI)-powered interactive guides, providing contextual storytelling, artifact-based mini-games, and novel interaction methods that vividly bring historical and cultural exhibits to life. TANAW enhances the museum's varied collection by integrating interactive 3D models and comprehensive educational narratives, so rendering it more accessible, engaging, and relatable, especially for digital-native audiences. The project aims to transform conventional passive museum visits into engaging, participatory learning experiences, enhancing comprehension and enjoyment of Filipino heritage. Employing a mixed-methods research approach—including surveys, usability testing, and semi-structured interviews—the project gathered critical insights from museum visitors and IT experts. Results indicate overwhelmingly positive feedback, citing the application's user-friendly interface, educational value, and significant impact in enhancing the museum experience. These findings affirm TANAW's success in delivering an engaging, informative, and technologically advanced platform for cultural education. Cultural heritage and modern technologies come together in TANAW, which is a great example. It provides a groundbreaking example of how museums may employ augmented and virtual reality to update their educational outreach, maintain cultural narratives, and encourage meaningful engagement with historical objects. The success of the project highlights its ability to be a pioneering innovation in the field of digital heritage education.

**Keywords:** *Augmented Reality, Machine Vision, Mobile Technology, Tourism Promotion*

# **SOCIAL STUDIES, ARTS, AND HUMANITIES**

## **SOCIAL STUDIES, ARTS, AND HUMANITIES**

### **TABLE OF CONTENTS**

<b>Title</b>	<b>Page No.</b>
Leadership And Peacebuilding: Insights From The 2024 Exceptional Women Of Peace Awardees <b>Genevieve Balance Kupang</b>	143
Storytelling, Truth, And Peacebuilding: A Literary Critique Of Maria Ressa And Colum Mccann’s Vatican Speeches <b>Genevieve Balance Kupang</b>	144
Exploring The Experiences And Parenting Styles Of Solo Parents In Rosales, Pangasinan: Challenges And Relationships <b>Maria Leonora O. Bustria-Muhammad</b>	145
Social And Ecological Approach To The Resilience Of Children In Pantal, Dagupan Experience Floods <b>John David D. Docil, Et.Al</b>	146
Self-Efficacy and Its Influence on the Perceived Academic Success of the Third Year College Students in the University of Luzon <b>Christian D. Andaya</b>	147

## **Leadership and Peacebuilding: Insights from the 2024 Exceptional Women of Peace Awardees**

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### **Abstract**

This study explored the inspiring leadership journeys of women recognized by Pathways to Peace through its 2024 Exceptional Women of Peace Awards. Driven by a deep commitment to social justice, these women dedicated their lives to building bridges and fostering peace. Using a qualitative, narrative inquiry design, this research drew on their in-depth video interviews and award nomination responses, capturing their powerful voices and lived experiences. Thematic analysis revealed that these peacebuilders relied on community empowerment, inclusive programs and projects, interfaith dialogue, and solution-oriented strategies to address complex challenges and promote lasting peace. This research and their work aligned with UN Sustainable Development Goal (SDG) 16 – promoting peaceful and inclusive societies, providing access to justice, and building effective, accountable, and inclusive institutions. It specifically supported Target 16.7, which called for inclusive, participatory, and representative decision-making at all levels, and Target 16.1, which aimed to reduce all forms of violence. Additionally, it underscored the critical role of empowering women leaders, as emphasized in SDG 5 – achieving gender equality and empowering all women and girls, particularly Target 5.5, which focused on ensuring women's full and effective participation and leadership. Despite the challenges, these women led with courage, resilience, and compassion, finding strength in collaboration, mutual support, and a shared commitment to a just and inclusive world. Their stories highlighted the transformative power of collective action and the vital role of women in peacebuilding.

**Keywords:** *exceptional women of peace, inspiring leaders, pathways to peace, social justice, community impact*

## STORYTELLING, TRUTH, AND PEACEBUILDING: A LITERARY CRITIQUE OF MARIA RESSA AND COLUM MCCANN'S VATICAN SPEECHES

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### Abstract

Amid proliferating disinformation that fractures societies and destabilizes community solidarity, storytelling emerges as a critical mechanism, shield, bridge defend truth and catalyze collective peacebuilding efforts. This literary critique analyzed Maria Ressa and Colum McCann's 2025 Vatican speeches through feminist criticism, reader-response theory, and the Everyday Peacebuilder Learning Framework, aligning with SDG 16's Target 16.10 to safeguard information access and fundamental freedoms. The study aimed to (1) assess how Ressa's and McCann's narrative strategies promoted truth, peace, and justice via feminist theory; (2) explore how their speeches cultivated peacebuilding skills through reader-response theory; and (3) analyze their use of personal narratives to combat oppression and foster intercultural understanding. Using qualitative discourse analysis, the study dissected Ressa's focus on digital authoritarianism and gendered oppression, which revealed systemic information manipulation through a feminist lens, while McCann's "storylistening" rhetoric was interrogated via reader-response theory to highlight audience-driven meaning-making. Results demonstrated that Ressa's narratives challenged patriarchal power structures, exposing threats to justice, whereas McCann's empathy-centered storytelling dismantled divisive narratives and bridged cultural divides. The Everyday Peacebuilder Framework underscored their speeches' role in nurturing critical thinking, ethical communication, and collaborative problem-solving. These findings affirmed storytelling's capacity to reframe conflict, amplify marginalized voices, and advance equitable peacebuilding. The study concluded with implications for integrating narrative-based interventions into peace education, enhancing digital literacy, and prioritizing intersectional analyses of disinformation. By merging literary critique with peacebuilding praxis, this research illuminates how truth-driven storytelling fosters resilience and collective healing in divided societies.

**Keywords:** *storytelling, reader-response theory, peacebuilding, intersectionality, feminist criticism, disinformation resistance.*



## **EXPLORING THE EXPERIENCES AND PARENTING STYLES OF SOLO PARENTS IN ROSALES, PANGASINAN: CHALLENGES AND RELATIONSHIPS**

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### **Abstract**

This study explores the lived experiences of solo parents in Rosales, Pangasinan, with a focus on their parenting styles, challenges, and parent-child relationships. Guided by Baumrind's Pillar Theory and Erikson's Psychosocial Development Theory, the research employed a mixed-methods approach, integrating both quantitative surveys and qualitative interviews to gather comprehensive data from 173 solo parents. The findings revealed that most respondents were widowed mothers, high school graduates employed in the service or sales sectors. Financial hardship, psychological distress, and limited access to government benefits were the most prevalent challenges, significantly affecting their well-being and parenting capacity. The study found that authoritative parenting styles were linked to more favorable developmental outcomes in children, while permissive and neglectful approaches correlated with increased behavioral issues. The reliance on extended family networks played a dual role, offering emotional support but sometimes adding financial and caregiving pressures. The research highlights a significant relationship between socio-demographic factors—such as age, education, and occupation—and the nature of parenting challenges faced. Aligned with multiple United Nations Sustainable Development Goals (SDGs), including No Poverty, Gender Equality, and Good Health and Well-Being, the study underscores the need for inclusive policies and support systems tailored to solo parents. It recommends the expansion of mental health services, livelihood programs, and community education initiatives to empower solo parents and enhance child development. Ultimately, this research contributes to a more inclusive understanding of family structures and advocates for targeted interventions to improve the quality of life for solo-parent families.

**Keywords:** *solo parenting, parenting styles, psychosocial challenges, pillar theory and psychosocial development, SDG*

## **SOCIAL AND ECOLOGICAL APPROACH TO THE RESILIENCE OF CHILDREN IN PANTAL, DAGUPAN EXPERIENCE FLOODS**

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### **Abstract:**

Natural disasters are indiscriminatory events. As a country regularly visited by typhoons and the southwest monsoon, rain-induced floods in the Philippines are common occurrences. Besides the adults, the younger populace is also vulnerable to these challenges. This study investigated the psychological resilience of young children living in the flood-prone community of Pantal, Dagupan City through their lived experiences. The paper provided insights supporting existing literature on this still-expanding area of study. This research used a phenomenological design and selected eight participants through purposive sampling. Using the theories of Albert Bandura and Urie Bronfenbrenner as frameworks, resilience was explored through the social-cognitive and ecological perspectives. The findings reveal that the resilience developed by the children in response to rain-induced flooding is influenced by six main contributing elements: their emotional experiences, faith in God, accustomedness, social support, local traits and values, and practical measures learned after previous exposure. The participants' narratives indicated the strong influence of their microsystems (primarily family members), accompanied by the exosystem (mass media), macrosystem (religious or spiritual beliefs and values known to the Filipino culture such as Bayanihan and lakas ng loob), and chronosystem (environmental changes) while hinting at observational learning as their internal mechanism to acquire adaptive responses with the aid of other individuals. The paper recommends capitalizing on these systems and mechanisms by allowing those in close social proximity to the children (such as the family and school) to nurture their psychological resilience and encourage authorities to expand existing intervention programs by integrating or enhancing resilience-building to disaster response while the issue of flooding in the city is simultaneously addressed.

**Keyword:** *resilience, values, rain-induced flooding, exosystem*



## SELF-EFFICACY AND ITS INFLUENCE ON THE PERCEIVED ACADEMIC SUCCESS OF THE THIRD YEAR COLLEGE STUDENTS IN THE UNIVERSITY OF LUZON

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### Abstract

Many students today are often distracted by various factors, leading to confusion and difficulties in understanding their lessons. Additionally, students who exert considerable effort in studying tend to sacrifice rest, resulting in fatigue that negatively impacts their academic performance. Some students also exhibit irregular attendance, which may hinder their academic self-efficacy. In certain instances, students prioritize socializing with friends over attending classes, further affecting their confidence and academic success. This study aimed to assess the level of self-efficacy among college students and examine how it influenced their perceived academic success. It explored the development of characteristics essential to goal achievement, academic progress, and skill enhancement. The research also investigated the relationship between self-efficacy and perceived academic success, providing insights into how students managed their daily learning experiences and the outcomes they achieved. A quantitative approach was employed using a correlational research design. A total of 414 third-year college students participated as respondents. The study utilized the General Self-Efficacy Scale to measure students' self-efficacy levels and the Perceived Academic Success Inventory for College Students to assess their academic success. Data were analyzed using statistical tools such as percentage, weighted mean, and Pearson's  $r$  coefficient. Findings revealed that the students demonstrated a high level of self-efficacy, with an average mean score of 2.84. Additionally, the domain of External Motivation – Future showed a mean of 3.26, indicating a very high level of perceived academic success. The analysis showed a moderately positive and statistically significant relationship between self-efficacy and perceived academic success ( $r = .517$ ,  $p = .001$ ), tested at a 0.05 alpha level. Based on these results, the researchers recommended the implementation of a program titled "Mental Wellness Roadmap: An Educational Toolkit for Mental Health Support." This initiative aims to enhance students' self-efficacy and support their academic success through comprehensive services in education, health, and personal development.

**Keywords:** *Self-efficacy, Academic Performance, Influence, University of Luzon, Educational Tool Kit*

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