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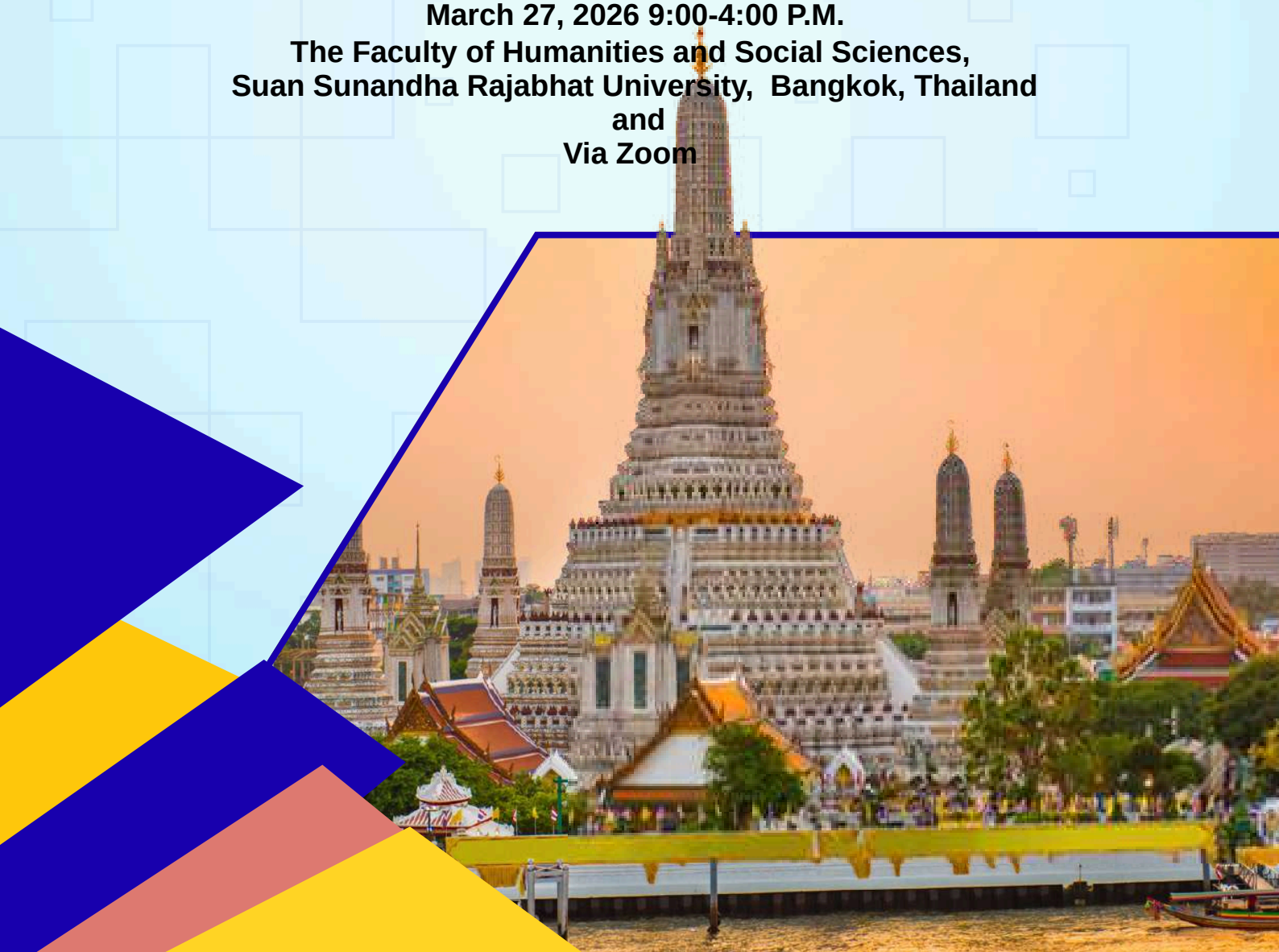
INTERNATIONAL INTERDISCIPLINARY RESEARCH CONFERENCE (IIRC) 2026

PROCEEDINGS

"Transforming Ideas Into Impact: Interdisciplinary Research for Global Progress and Human Development"

March 27, 2026 9:00-4:00 P.M.
The Faculty of Humanities and Social Sciences,
Suan Sunandha Rajabhat University, Bangkok, Thailand
and
Via Zoom



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INTERNATIONAL INTERDISCIPLINARY RESEARCH CONFERENCE (IIRC) 2026

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Lecturer, Faculty of Humanities and Social Sciences
Suan Sunandha Rajabhat University
Bangkok, Thailand

THE CO-HOST INSTITUTIONS

Name	Country	Role/s in the event	Institution
Prof. Mario Pace	Malta	Co-Host & Plenary Speaker	Faculty of Education University of Malta, Malta
Dr. Sun Yu	People's Republic of China	Co-Host & Plenary Speaker	School of Foreign Studies, Northwestern Polytechnical University
Dr. Bongchul Kim	South Korea	Co-Host & Plenary Speaker	Korean Association of Thai Studies
Assoc. Prof. Artit Chutchaipolrut	Thailand	Co-Host & Session Chair (Onsite)	College of Asian Scholars
Dr. Rebecca D. Miranda	Philippines	Co-Host, Plenary Speaker, & Session Chair (Onsite)	Emilio Aguinaldo College – Cavite
Dr. Elbert M. Galas	Philippines	Co-Host & Plenary Speaker	Pangasinan State University, Pangasinan
Dr. Renato E. Salcedo	Philippines	Co-Host & Vice Chair for Linkages	Pangasinan State University – Urdaneta Campus
Dr. Razeale G. Resultay	Philippines	Co-Host & Vice Chair for Paper Presentation	Pangasinan State University, Pangasinan
Dr. Roland D. Villegas	Philippines	Co-Host	St. Bernadette of Lourdes College
Dr. Rosalinda G. Cochico	Philippines	Session Cluster Speaker & Moderator (Onsite)	Pangasinan State University – Lingayen Campus

THE CO-HOST INSTITUTIONS

Name	Country	Role/s in the event	Institution
Dr. Joel John Dela Merced	Philippines	Co-Host & Session Chair (Onsite)	Saint Bernadette of Lourdes College
Prof. Francia Formalejo Murao ,LPT, Ed.D	Philippines	Member, Scientific Committee & Session Chair (Online)	Public School Teacher Part-Time Professor EAC-Cavite Part-Time GSE Professor PCU-Cavite
Dr. Alfe M. Solina	Philippines	Member, Scientific Committee & Session Chair (Online)	Cavite State University – Imus Campus, Imus, Cavite
Dr. Loc Nguyen	Vietnam	Member, Scientific Committee & Session Chair (Online)	Loc Nguyen's Academic Network, Vietnam
Dr. Victor Tantoco Bernal	Philippines	Session Chair (Online)	Pangasinan State University – Lingayen Campus
Mr. Ariel Sarbues	Philippines	Session Chair (Onsite)	DEPED-Panay
Dr. Liane Vina G. Ocampo	Philippines	Member, Scientific Committee & Session Chair (Online)	Cavite State University – Imus Campus
Dr. Christian A. Gamo	Philippines	Member, Scientific Committee & Session Chair (Online)	Pangasinan State University – Alaminos Campus
Assoc. Prof. Mary Ann F. Aballiar-Vista	Philippines	Session Chair (Online)	National Aviation Academy of the Philippines
Dr. Vladimir Marie E. Cabutotan	Philippines	Head, Scientific Committee	Pangasinan State University
Ms. Joana Yasol-Vicente	Philippines	Cluster Session Speaker & Moderator (Online)	University of the Philippines -Los Banos

THE CO-HOST INSTITUTIONS

Name	Country	Role/s in the event	Institution
Dr. Santa M. Faltado	Philippines	Moderator (Online)	Batangas State University Pablo Borbon Campus Rizal Avenue, Batangas City
Dr. Armi Grace B. Desingaño	Philippines	Session Chair/Judge	Cavite State University – Imus Campus Imus, Cavite
Dr. Erwin Olivar Estrella	Philippines	Member, Scientific Committee/ Research Evaluator	Pangasinan State University – Urdaneta Campus
Dr. John Paul Flores	Philippines	Member, Scientific Committee/ Research Evaluator	Pangasinan State University – Urdaneta Campus
Mr. Sydney Joi R. Agcaoili	Philippines	Co-Host & Plenary Speaker	MEDEE, INC.
Ms. Elaine Jairusse R. Capellan	Philippines	Cluster Session Speaker & Moderator (Onsite)	Emilio Aguinaldo College - Cavite
Dr. Grace Gamanos-De Vera	Philippines	Moderator (Online)	Pangasinan State University - Lingayen Campus
Ms. Sarah Jane S. Jucal	Philippines	Session Chair (Onsite) & Host	Iloilo Science and Technology University - Leon Campus
Mr. John Philip M. Alexander	Philippines	Cluster Session Speaker & Moderator (Onsite)	Immaculate Conception Academy - Dasmarinas, Cavite
Dr. Montarat Rungruangthum	Thailand	Plenary Speaker & Co-Host	*, Rajamangala University of Technology Phra Nakhon, Thailand*

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MESSAGE FROM THE ORGANIZER



DR. NAPASRI SUWANAJOTE

Dean, Faculty of Humanities and Social Sciences, Suan Sunandha Rajabhat University, Bangkok, Thailand

Thank you for attending IIRC 2026, the International Interdisciplinary Research Conference at Suan Sunandha Rajabhat University! This year's theme is “Transforming Ideas Into Impact: Interdisciplinary Research for Global Progress and Human Development.”

All of us, scholars, educators, and research faculty, have an obligation to share our expertise across disciplinary boundaries, leading to the creation of impactful, real-world products that solve the myriad challenges we face in society today. IIRC 2026 is an opportunity for collaboration and development through multiple disciplines. This is possible because of the diversity of our ideas and perspectives represented at the conference. With a high level of interdisciplinary dialogue and collaboration, IIRC 2026 is exemplifying how important research can be in advancing Sustainable Development, Enhancing Well-Being, and developing Human-Centered Development. I would like to offer my heartfelt thanks to our co-organizer, EduHeart Knowledge Network and Publishing, Inc., as well as to our co-hosts, collaborating organizations, and institutions that participated in this event. The unification of so many organizations to collaborate demonstrates a strong vision to establish an International academic community that will enable researchers to create value through their efforts. As we gather together to share our ideas, I hope that this conference will lead to great conversations, innovation, and long-lasting partnerships. The results of this event will have a significant impact on future research efforts to improve Human Development and Global Progress for all generations.

MESSAGE FROM THE ORGANIZER



DR. ETHEL REYES-CHUA

President, EduHeart Knowledge Network and Publishing, Inc., Philippines

We are grateful to Suan Sunandha Rajabhat University for the opportunity to co-organize the **International Interdisciplinary Research Conference (IIRC 2026).** They foster international collaboration, academic achievement, and multidisciplinary research with unwavering dedication. This year's theme, "Transformation of Ideas Through Impact," highlights the necessity of interdisciplinary, collaborative research to address the increasing complexity of issues facing our society today as a Global Community; professors, researchers, and practitioners from multiple fields will come together to provide insights into their areas of expertise, develop new knowledge through their research, and provide the opportunity to creatively transform research-based ideas into impactful outcomes that benefit both the Local Community/Nation and the Global Community.

This conference provides a platform for interaction among diverse cross-disciplinary and cross-cultural practices/perspectives. Through the interaction of diverse ideas and perspectives at the conference, a creative methodology for research on sustainable development, social equality, and human-centered development will be established. We hope the information shared at this conference inspires participants to conduct high-quality, socially oriented, and impactful research.

I would like to express my appreciation to Suan Sunandha Rajabhat University, our co-organizer, and to all co-host institutions, participating institutions, and the academic community for their ongoing support of this event. Your commitment and collaboration have made this event possible and fostered valuable relationships among institutions and across disciplines.

The IIRC 2026 Conference is an exciting opportunity for meaningful dialogue, collaboration, and ongoing research. The connections and ideas created at this conference should result in global progress and human development.

MESSAGE FROM THE CONFERENCE CHAIR



DR. SIRIMAN WATTANA

Suan Sunandha Rajabhat University
Bangkok, Thailand

I am pleased to welcome everyone to IIRC 2026. This conference brings together scholars, researchers, and educators from various fields to discuss and share research on global and societal issues.

IIRC 2026 fosters creativity, critical thinking, and academic collaboration through interdisciplinary collaboration. Our co-organizers, co-hosts, partner institutions, and participating institutions deserve my gratitude for their support and dedication to scholarship.

May this conference generate meaningful discussions, lasting relationships, and research that advance global growth and human development.

As the conference chair, I welcome you to this significant and beneficial activity that will help us better understand research and enhance our lives. Hope you enjoy your time at Suan Sunandha Rajabhat University!

MESSAGE FROM THE CO-CHAIRPERSON



DR. ANGVARRAH LIEUNGNAPAR

Asst. Dean, FSH, SSRU
Bangkok, Thailand

I welcome all IIRC 2026 participants! I am excited to listen to scholars, researchers, and educators from diverse fields sharing information, ideas, and research that advance humanity.

IIRC 2026 emphasizes interdisciplinary collaboration to solve challenging problems and make research relevant. I thank our co-organizers, co-hosts, partner institutions, and participating institutions for their dedication and support. May this conference spark insightful discussions, new research, and lasting academic collaborations that advance scholarship and improve our communities and beyond. Enjoy your stay at SSRU, Bangkok, Thailand!

DR. CHARLOTTE AMALIE YUSON

Faculty Member, FSH, SSRU
Bangkok, Thailand



I welcome everyone to IIRC 2026! I also invite all international participants who will present their research in this forum. In our second partnership with EduHeart Knowledge Network and Publishing, Inc., I believe more research will improve our skills and knowledge.

I thank the SSRU and the Faculty of Humanities and Social Sciences personally for the opportunity to co-chair the conference again. This time, an International Conference brings scholars and researchers together for more relevant interdisciplinary and global studies.

This event should promote constructive dialogue, academic relationships, and community-changing research. I am excited to listen to your paper presentations.

Once again, thank you for joining IIRC 2026! Mabuhay!

MESSAGE FROM THE VICE CHAIRPERSON FOR LINKAGES



DR. RENATO E. SALCEDO

Acting Vice President for Local and International Affairs
Pangasinan State University
Pangasinan

Mabuhay! It is my pleasure to serve as the Vice Chairperson for Linkages in the International Interdisciplinary Research Conference 2026, organized by the EduHeart Knowledge Network and Publishing and by Suan Sunandha Rajabhat University, Thailand. I am honored to be part of this meaningful gathering of scholars, educators, and practitioners from diverse disciplines and countries.

This conference reflects the spirit of collaboration, innovation, and shared responsibility in advancing research that responds to the complex challenges of our time. As Co-Chairperson for Linkages, I look forward to strengthening academic partnerships, fostering interdisciplinary dialogue, and building networks that create lasting impact across institutions and communities. May this conference inspire new ideas, meaningful collaborations, and research that contribute to sustainable and inclusive development. Thank you, and I wish everyone a productive and enriching conference experience.

MESSAGE FROM THE VICE CHAIRPERSON FOR PAPER PRESENTATION



DR. RAZEALE G. RESULTAY

Vice President for Research, Extension, and Innovation
Pangasinan State University

My warmest congratulations and heartfelt appreciation to EduHeart Knowledge Network and Publishing, Inc. for successfully organizing this International Interdisciplinary Research Conference (IIRC) 2026 and for extending to Pangasinan State University the opportunity to serve as a co-host. This spirit of collaboration and steadfast commitment to excellence has fostered a dynamic platform for scholarly exchange and meaningful dialogue. The success of this conference is a true testament to your dedication, hard work, and shared vision.

In an era defined by rapid technological advancement, complex global interdependencies, and evolving societal needs, no single discipline can adequately address the multifaceted issues before us. From climate resilience and public health to digital transformation, social equity, and sustainable development, today's most pressing challenges demand integrated perspectives and cooperative inquiry. Interdisciplinary research serves as a bridge—connecting methodologies, uniting expertise, and fostering innovation that transcends traditional academic boundaries.

The theme ***"Transforming Ideas into Impact: Interdisciplinary Research for Global Progress and Human Development"*** reflects not only the urgency of the challenges facing the world but also the extraordinary potential of collaborative scholarship to generate meaningful, measurable change. The contributions compiled in these proceedings exemplify the power of ideas translated into action. Each paper represents a commitment not only to intellectual rigor but also to practical relevance and societal impact. The research presented here demonstrates how theory, when combined with collaboration and purpose, can influence policy, improve communities, advance technologies, and enrich human understanding.

May these proceedings inspire continued dialogue, foster new partnerships, and catalyze research that advances human development across disciplines and borders. Together, by transforming ideas into impact, we contribute meaningfully to a more equitable, sustainable, and prosperous world.

WELCOME MESSAGE



MR. JEROME N. CHUA

CEO, EduHeart Knowledge Network and Publishing, Inc.

We are proud to provide a platform for our World-Class Scholars, Researchers, Educators, and Business Partners.

On behalf of EduHeart Knowledge Network and Publishing, Inc., I would like to welcome you to the International Interdisciplinary Research Conference (IIRC) 2026. This year's theme exemplifies our unified commitment to supporting Interdisciplinary Research in response to Global Challenges.

The Joint Organizing Committee of the IIRC 2026 is focused on providing an environment that facilitates the exchange of ideas, orientation, and synergy to support the equitable growth, sustainable development, and people-centered progress of the world. The Joint Organizing Committee believes that interdisciplinary research will solve complex issues and make a difference.

I wish to express my gratitude to our Co-Organizers, Co-Hosts, partner institutions, and the scholarly community for their support of this project. Dedication and teamwork will give this conference real meaning.

May IIRC 2026 promote meaningful conversations, partnerships between institutions of higher learning, and advance research for humanity. I hope all participants will have an inspiring and productive conference.

THE KEYNOTE SPEAKER'S PROFILE



PROFESSOR BUDSABA KANOKSILAPATHAM

Distinguished professor of English at Silpakorn University and an internationally recognized scholar in genre analysis and English for Specific Purposes (ESP)

Professor Budsaba Kanoksilapatham, a Ph.D. graduate in Linguistics from Georgetown University, is a full-time professor of English at Silpakorn University. A fellow of the Royal Society of Thailand's Academy of Arts and a 'Distinguished Researcher,' she specializes in genre analysis within English for Specific Purposes (ESP). Her work advances English-language education in Thailand, focusing on teacher development, curriculum design, integration of language skills, and materials development. Professor Budsaba Kanoksilapatham attained her Ph.D. in Linguistics at Georgetown University in the United States.

She is currently a full-time professor of English at the Faculty of Management Science at Silpakorn University. She is a fellow at the prestigious Academy of Arts, the Royal Society of Thailand, and is recognized as a 'Distinguished Researcher' at Silpakorn University and 'TRF Senior Research Scholar in English'. Her research interests center on genre analysis, a specialized analytical approach to discourse, particularly in English for Specific Purposes (ESP), spanning both academic and professional contexts. Additionally, she has demonstrated a strong commitment to advancing English language education in Thailand, with a focus on enhancing teacher development, improving student learning outcomes, strengthening curriculum design, and integrating language skills across the entire educational spectrum.

THE PLENARY SPEAKERS' PROFILE (INSPIRATIONAL MESSAGE)



DR. ELBERT MANANGAN GALAS

University President
Pangasinan State University
Pangasinan, Philippines

Dr. Elbert Manangan Galas is currently serving as the 7th President of Pangasinan State University. His areas of specialization include information technology, information systems, quality assurance, quality management systems, and educational leadership. Prior to his election as University President, he held several positions at PSU, including IT Program Chairperson, Director for Quality Assurance, Vice President for Quality Assurance, and Vice President for Administration and Linkages. Dr. Galas earned his Bachelor of Science in Information Technology (BSIT) in 2003 from the PSU-Urdaneta Campus, where he was a consistent CHED scholar. He finished his Master of Information Systems (MIS) in 2010 at the University of the Philippines-Open University, Los Baños, Laguna, and his Doctor of Information Technology (DIT) in 2020 at the Technological Institute of the Philippines as a CHED K to 12 scholar. Dr. Galas is a researcher, author, editor, subject-matter expert, instructional designer, and publishing specialist, in addition to being an educator.

DR. REBECCA D. MIRANDA

Vice President for Academic Affairs
Emilio Aguinaldo College – Cavite
Dasmarinas, Cavite, Philippines



Rebecca dela Cruz-Miranda, CPA, DBA, is currently engaged with Emilio Aguinaldo College, Cavite, and serves as the Vice President for Academic Affairs and the Quality Management Representative. She has been actively involved in the Philippine higher education sector, with 25 years of administrative leadership experience, including service as Vice President for Academic Affairs at the University of Baguio.

As an educator and scholar, Miranda has taught undergraduate and graduate courses in Accountancy and Business Administration and has mentored numerous research projects that contribute to evidence-based practices and local development.

Currently, she is involved in projects aligned with CHED's thrusts on internationalization and quality assurance. She serves as an Accreditor of the Philippe Association and the Universities Commission on Accreditation. She is also a member of the Philippine Institute of Certified Public Accountants and the Association of Certified Public Accountants in Education, contributing to policy and advocacy initiatives in Philippine education.

THE PLENARY SPEAKERS' PROFILE (INSPIRATIONAL MESSAGE)



PROFESSOR SUN YU

Dean, School of Foreign Studies
School of Foreign Studies, Northwestern Polytechnical University,
People's Republic of China.

Professor, PhD Supervisor, Dean of the School of Foreign Studies at Northwestern Polytechnical University; Member of the First National Steering Committee for Aesthetic Education in Higher Education of the Ministry of Education, Vice Chairman of the Aesthetic Education Professional Committee of the Chinese Society of Higher Education; Recipient of the "Six Top Talents" title in Shaanxi Provincial Publicity, Ideological and Cultural System, Leading Talent in Philosophy and Social Sciences of the Shaanxi Provincial Special Support Program, Shaanxi Provincial Distinguished Teacher; Principal Investigator of National Social Science Fund Projects, Host of National First-Class Courses.

Her primary research focuses on English language and culture, covering such fields as English education, comparative literature, Western cultural studies and aesthetic education. In the past five years, she has presided over 3 national and provincial-level projects, won 1 Special Prize and 1 First Prize for Shaanxi Provincial Teaching Achievements, and published dozens of high-quality academic papers on teaching and research.

PROF. BONGCHUL KIM

President, Korean Association of Thai Studies

Bongchul Kim is Professor at the Division of International Studies and Director at the HUFS-Jean Monnet EU Centre in Hankuk University of Foreign Studies, Seoul, Korea. Prof. Kim is Ph.D in Law (King's College London) and does teach and research various legal subjects in the fields of International Economy and Trade, International Relation and Cooperation, Development and Polar Areas.



THE PLENARY SPEAKER'S PROFILE



PROF. MARIO PACE

Prof Mario Pace | Resident Associate Professor
B.Ed. (Hons) (Melit.) M.A. (Melit). Ph.D. (Melit).
Head of Department
Languages & Humanities in Education (DLHE)
Faculty of Education
Office 223, Old Humanities Building

TOPIC: INTERDISCIPLINARY RESEARCH: A CATALYST FOR GLOBAL SOLUTIONS

Prof. Mario Pace is a Professor and Head of the Department of Languages and Humanities Education within the Faculty of Education of the University of Malta. His achievements at the University of Malta have been exceptional. His role in the pedagogical formation of aspiring teachers of Italian and foreign languages has been instrumental in shaping the next generation of language educators. He is also Chair of the Master in Education Board of Studies and coordinates multiple postgraduate programs within his faculty.

On a national level, Prof. Pace's impact has been profound. He served as Advisor to the Minister of Education in the field of Foreign Language Teaching and Learning for a number of years, where he spearheaded several transformative initiatives. These included the design and implementation of the Subject Proficiency Assessment (SPA) programme for secondary schools and the introduction of the Learning Outcomes Framework. His chairmanship of the National Working Group for the promotion of foreign languages in Malta has been pivotal in advancing language education across the country.

Internationally, Prof. Pace has established himself as a distinguished scholar in foreign language teaching and intercultural communication. His visiting professorships at prestigious institutions across Europe reflect his international recognition. His receipt of the prestigious title of "Cavaliere dell'Ordine della Stella d'Italia" from the President of the Italian Republic in 2018 underscores his significant contributions to promoting Italian culture and strengthening international academic relations.

His publication record is equally impressive. Prof. Pace has authored numerous peer-reviewed articles, books, and book chapters in prestigious outlets. His 2018 book

"Marco Largi ovvero Carlo Magri, drammaturgo maltese (1617 - 1693). Vita e Opere" was shortlisted for the National Book Prize, demonstrating the high quality and impact of his research. His upcoming publications further attest to his continued scholarly productivity and international recognition.

Prof. Pace's service to the academic community has been exemplary. He serves on multiple editorial boards and as a peer reviewer for several international journals. His role as an Honorary Fellow of the Teaching & Education Research Association (TERA) and his frequent invitations as a keynote speaker at international conferences demonstrate his standing in the global academic community.

Beyond his academic achievements, Prof. Pace has shown an extraordinary commitment to community engagement and professional development. His organization of numerous workshops, seminars, and training programs for language teachers has had a lasting impact on pedagogical practices in Malta and beyond. His positive attitude and dedication to promoting language education and cultural understanding have made him a respected figure among colleagues and students alike.

THE PLENARY SPEAKER'S PROFILE



MONTARAT RUNGRUANGTHUM

English lecturer and research consultant
General Education, Faculty of Liberal Arts,
Rajamangala University of Technology Phra Nakhon, Bangkok, Thailand

TOPIC: BEYOND ONE-SIZE-FITS-ALL: AI-POWERED PERSONALIZATION FOR DIVERSE ENGLISH LANGUAGE LEARNERS

Montarat Rungruangthum (Ph.D. in Applied Linguistics) is an English lecturer and a research consultant at the Faculty of Liberal Arts, Rajamangala University of Technology Phra Nakhon, Thailand. Her scholarly work centers on English language education, educational technology integration, textual analysis, and innovative pedagogies. Her research contributions have earned her recognition as an Outstanding Researcher in Humanities and Social Sciences, an honor conferred by both internal and external academic institutions from 2020 to the present. Her research interests have recently expanded to artificial intelligence, reflecting her commitment to exploring emerging technologies in language learning contexts. She has recently been selected for the competitive Z.AIxBuilder workshop to advance applications of AI in educational contexts.

THE PLENARY SPEAKERS' PROFILE



ASST. PROF. DR. ARTIT CHUTCHAIPOLRUT

Vice President for Academic Affairs, Research and Quality Assurance
CASNIC, Khonkaen, Thailand
Topic: Future of Education: Remagining Learning in a Technology-Driven world

TOPIC: FUTURE OF EDUCATION: REMAGINING LEARNING IN A TECHNOLOGY-DRIVEN WORLD

Asst. Prof. .Dr.Artit Chutchaipolrut Vice president for Academic Affairs, Research and Quality Assurance, College of Asian Scholars 13 October 1974 Educational background 1997 Bachelor of Business Administration, University of Massachusetts, USA 2001 Master of Business Administration, Major in General Management, Khon Kaen University, Thailand 2011 Doctor of Education Administration Faculty of Education, Khon Kaen University, Thailand Work Experience 1998-2004 Lecturer, Phon Technology Commercial School 2001-2002 Exchange Teacher, Nagasaki College, Japan. and Lecturer, Seahat Community, Japan 2005 - 2012 Deputy Mayor of Ban Phai Municipality (Education Department) 2007-2011 Deputy Dean of graduate school 2012-2020 Dean of graduate school 2017- present Council Member 2020 Acting Dean of Science and Technology 2020 -present Dean of Education and Liberal Arts 2021-present Director of Krasaepiwat Institute 2023-2024 Working Group of the Minister of Higher Education, Science, Research and Innovation. 2025-present Committee for Promotion and Development of Professional Ethics for Educators of the Teachers' Council of Thailand 2025 -present Vice president for Academic Affairs, Research and Quality Assurance.

MR. SYDNEY JOI R. AGCAOILI

CEO, Medee Inc.
A HealthTech engineering leader specializing in scalable, secure, and globally compliant software systems.



TOPIC: USING ARTIFICIAL INTELLIGENCE TO PROMOTE INCLUSIVE AND SUSTAINABLE HUMAN DEVELOPMENT

Sydney Agcaoili is a distinguished Engineering Leader with a career-long dedication to architecting high-impact software systems within the HealthTech sector. Known for bridging the gap between sophisticated technical infrastructure and patient-centric design, Sydney specializes in developing international-standard platforms that prioritize scalability, security, and global compliance.

THE IIRC 2026

INTERNATIONAL INTERDISCIPLINARY RESEARCH CONFERENCE (IIRC) 2026

March 27, 2026 (Friday)
9:00-4:00 P.M.

"Transforming Ideas Into Impact: Interdisciplinary Research for Global Progress and Human Development"

1. **Description:** The conference will bring together participants from many fields of study to present their perspectives on how interdisciplinary research might help address concerns. Researchers and innovators will conduct multidisciplinary studies and practices. The conference aims to expedite progress toward long-term humanitarian goals through discussions, presentations, plenary sessions, and exchanges of ideas among researchers and practitioners across all fields. At IIRC 2026, we will endeavor to create a brighter future by promoting quality and inclusive progress.
2. **Organizers:** The EduHeart Knowledge Network and Publishing, Inc., and The Faculty of Humanities and Social Sciences, Suan Sunandha Rajabhat University in Bangkok are the conference organizers, and the conference will be held at SSRU, Bangkok, Thailand, on Friday, March 27, 2026.
3. **The Co-Hosts and Partner Institutions:** These institutions have volunteered to be part of this event. Their roles range from committee member or reviewer to member of the Technical Working Group, etc.
4. The Clusters:

CLUSTER 1: Science, Technology, Sustainable Development, Environmental Awareness, AI, and Gender & Development
CLUSTER 2: Education, Humanities, and Social Sciences
CLUSTER 3: Health, Well-Being, and Quality of Life
CLUSTER 4: Business, Governance, Economic Advancement, Aviation, Quality Assurance, and Leadership

5. **Objectives:**

a. To create a worldwide forum for exchanging and discussing multidisciplinary research focused on current concerns in science and technology, global society, health care, education, business, and the arts and humanities.
b. To establish a platform for collaboration among academics, educators, practitioners, and institutions through discourse, partnerships, and the sharing of inventions across multiple discipline areas.
c. To highlight research-based solutions and best practice examples for promoting sustainable development, increasing human health, and advancing global development.
d. To encourage the integration of knowledge and methodologies from other domains to produce comprehensive responses to emerging issues and opportunities.
e. To foster a culture of research productivity and academic quality by allowing scholars to present investigations, publish results, and engage in scholarly discourse.

6. **. The Program: The IIRC 2026 will be conducted via F2F and online:**

a. The Preliminary program and the plenary speakers will be held at the Suan Sunandha Rajabhat University, Bangkok, Thailand.

b.Breakout Sessions/parallel sessions will be done onsite and via Zoom.

THE PROGRAM

Time Duration	Activity	In-Charge
8:00-9:00	Registration AVPs	Committee on Registration By Dr. Rosalinda G. Cochico
9:00-9:30	Welcome Remarks Awarding of Certificate of Collaboration & Photo Opportunity	*Assoc. Prof. Dr. Chutikarn Sriviboon* Suan Sunandha Rajabhat University
9:30-9:40	Opening Remarks	*Dr. Ethel Reyes-Chua* President EduHeart Knowledge Network and Publishing, Inc.
	Opening Cultural Numbers	SSRU Students – video Selected Filipino Students (AVP)
9:40-10:00	**Keynote Speech** *"English as a Catalyst for Thailand's Sustainable Development: Three Hurdles along the Development Pathway"*	*Professor Budsaba Kanoksilapatham* Full-Time Professor of English Silpakorn University
	Awarding of the Certificate to Keynote Speaker Photo documentation	Host TWG
	Inspirational Messages from Co-Host Institutions	*Dr. Elbert M. Galas* University President, Pangasinan State University Lingayen, Pangasinan, Philippines *Dr. Rebecca D. Miranda* Vice President for Academic Affairs Emilio Aguinaldo College – Cavite Dasmarinas, Cavite, Philippines *Prof. Sun Yu* Dean, School of Foreign Studies Northwestern Polytechnical University People's Republic of China *Prof. Bonchul Kim* President, Korean Association of Thai Studies
	Awarding of Certificates to Inspirational Speakers	Host TWG
10:00-10:30	**Plenary 1:** Interdisciplinary Research: A Catalyst for Global Solutions	*Prof. Mario Pace* Plenary Speaker Professor and Head of the Department of Languages and Humanities Education within the Faculty of Education of the University of Malta.
	Awarding of Certificate to Plenary Speaker	Organizers and Co-Host Institutions

THE PROGRAM

Time Duration	Activity	In-Charge
10:30-11:00	**Plenary 2:** Beyond One-Size-Fits-All: AI-Powered Personalization for Diverse English Language Learners	*Dr. Montarat Rungruangthum* Plenary Speaker *Research Consultant, Faculty of Liberal Arts, Rajamangala University of Technology Phra Nakhon, Thailand*
	Awarding of Certificate to Plenary Speaker	Organizers and Co-Host Institutions
11:00-11:30	**Plenary 3:** Future of Education: reimagining learning in a technology-driven world.	*Dr. Artit Chutchaipolrut* Plenary Speaker Vice President for Academic Affairs, Research, and Quality Assurance, College of Asian Scholars, Khonkaen, Thailand
	Awarding of Certificate to Plenary Speaker	Organizers and Co-Host Institutions
11:30-12:00	**Plenary 4:** Using Artificial Intelligence to Promote Inclusive and Sustainable Human Development	*Mr. Sydney Joi R. Agcaoili* Plenary Speaker CEO, Medee IT Software Engineer
	Awarding of Certificate to Plenary Speaker	Organizers and Co-Host Institutions
12:00-1:15	Conference Reminders/Mechanics/etc. LUNCH BREAK INTERMISSION NUMBERS (AVP)	The Masters of Ceremonies The EAC Chorale
1:15-3:15	**PARALLEL SESSIONS**	**SESSION CHAIR/MODERATOR FOR ONSITE/ONLINE**
	CLUSTER 1: Science, Technology, Sustainable Development, Environmental Awareness, AI, and Gender & Development	**ONSITE:** **Session Chair/Judge:** Dr. Artit Chutchaipolrut Mr. Ariel Sarbues **Cluster Session Speaker/Moderator:** John Philip M. Alexander **Technical Support:** Mr. Wilson C. Bonifacio **ONLINE:** **Session Chairs/Judges:** Dr. Christian A. Gamo Dr. Victor Tantoco Bernal **Moderator:** Asst. Prof. Mary Ann F. Aballiar-Vista **Technical Support:** Mr. Albert Ragasa

THE PROGRAM

Time Duration	Activity	In-Charge
	CLUSTER 2: Education, Humanities, and Social Sciences	**ONSITE:** **Session Chairs/Judges:** Dr. Montarat Rungruangthum Ms. Sarah Jane S. Jucal **Cluster Session Speaker/Moderator:** Dr. Analyn I. Diola **Technical Support: Ms. April Joy Bonifacio** **ONLINE:** **Session Chairs/Judges:** Dr. Armi Grace B. Desingano Dr. Francia Formalejo Murao, LPT, Ed.D. Dr. Loc Nguyen **Moderator:** Dr. Grace Gamanos-De Vera **Technical Support:** Mr. Christian Jay Miranda
	CLUSTER 3: Health, Well-Being, and Quality of Life	**ONSITE:** **Session Chair/Judge:** Dr. Joel John A. Dela Merced **Cluster Session Speaker/Moderator:** Elaine Jairusse R. Capellan **Technical Support:** Macey Jade R. Capellan **ONLINE:** **Session Chair/Judge:** Dr. Evelyn M. Del Mundo **Cluster Session Speaker/Moderator:** Asst. Prof. Joana L. Yasol-Vicente **Technical Support:** Mr. Ferdinand Dalisay
	CLUSTER 4: Business, Governance, Economic Advancement, Aviation, Quality Assurance, and Leadership	**ONSITE:** **Session Chair/Judge:** Dr. Rebecca D. Miranda **Cluster Session Speaker/Moderator:** Dr. Rosalinda G. Cochico Technical Support: 1 from Thailand **ONLINE:** **Session Chairs/Judges:** Dr. Alfe M. Solina Dr. Liane Vina G. Ocampo **Moderator:** Dr. Santa M. Faltado **Technical Support:** Ms. Ronalyn I. Garcia
3:00-3:15 P.M.	Finalize the results for Best Presenters Intermission Numbers	VIDEO PRESENTATIONS

THE PROGRAM

Time Duration	Activity	In-Charge
3:15-3:45 P.M.	Distribution of Certificates to co-organizers, co-host institutions, TWG, and the Participants Announcement of Winners for Best Abstract, Best Paper, and Best Presenters Oral Presentations Certificate of Recognition Innovation Awards	Organizers and Co-host institutions
3:45-4:00 P.M.	Closing Remarks	*Dr. Napasri Suwanajote* Suan Sunandha Rajabhat University (Organizer) *Mr. Jerome N. Chua* CEO, EduHeart Knowledge Network and Publishing, Inc.
	Photo documentation Evaluation	All Participants Organizers/Session Chairs/Judges/Session Cluster Speakers & Moderators/TWG Multimedia, Technical Support Team
EduHeart Technical Working Group **Program Hosts** **Onsite:** Sarah Jane S. Jucal Mr. John Philip M. Alexander Dr. Charlotte Amalie Yuson **Online:** Dr. Charles Dustein Soriano		

THE GUIDELINES

Mechanics of the Event

1. The participants in this conference may join onsite or online. They can be graduate or undergraduate students, teachers, industry partners, administrators, or professionals from various fields.

2. The conference fees:

TYPE OF ATTENDEE	ONLINE	ONSITE
RESEARCH PRESENTER (PROFESSIONALS & GRADUATE STUDENTS)	USD 85 THB 2,600 PHP 5,000	USD 170 THB 5,400 PHP 10,000
RESEARCH PRESENTERS (UNDERGRADUATE STUDENTS)	USD 50 THB 1,600 PHP 3,000	USD 100 THB 3,200 PHP 6,000
CO-AUTHOR PROFESSIONALS/UNDERGRADUATE STUDENTS	USD 30 THB 1,000 PHP 1,800	USD 50 THB 1,600 PHP 3,000
OBSERVER/ATTENDEE PROFESSIONALS/UNDERGRADUATE	USD 30 THB 1,000 PHP 1,800	USD 50 THB 1,600 PHP 3,000

3. **The conference fee is inclusive of the following:**
   a.Conference Proceedings (abstracts or full papers)
   b.Certificate of Recognition as presenter
   c.Certificate of Publication
   d.Certificate of Participation and Attendance
   e.Certificate of Awards

   Note: All certificates will be printed for onsite participants only, and e-certificates will be provided to online participants.

4. **Publication:** The EduHeart Knowledge Network and Publishing, Inc. will publish the Conference Proceedings. Participants can submit their abstracts or full papers for free. The Scientific Committee will select the best five (5) full papers to be published in the journal of the Faculty of Humanities and Social Sciences, indexed by Thai Citation Index (TCI). For Scopus-indexed journal submissions, participants may submit their research to journals suggested by the organizers (FOR A FEE).

5. **The Technical Working Group**

CONFERENCE CHAIRPERSONS:
DR. ETHEL REYES-CHUA & DR. SIRIMAN WATTANA

CONFERENCE CO-CHAIRPERSONS:

Dr. Angvarrah Lieungnapar
Asst. Dean, FHS
SSRU
Bangkok, Thailand

Dr. Charlotte Amalie Yuson
Faculty Member, FHS
SSRU
Bangkok, Thailand

THE GUIDELINES

COMMITTEE	ROLE	IN-CHARGE
Program and Invitation	To invite participants from various colleges and universities	Dr. Charlotte Amalie Yuson
Proceedings	To provide e-proceedings to all participants. To compile all abstracts/full papers into one.	Dr. Jeth Chua & Ms. Marie Christine S. Pasco
Physical Arrangements/Intermission numbers/pub mats, etc.	To ensure the venue is equipped with conference materials/equipment. To provide two intermissions or cultural numbers for this event. To provide all the necessary publication materials for this event. To prepare one Big Room for Plenary Sessions and two for Breakout sessions for both online and onsite	SSRU AND EDUHEART
Scientific Committee	To review and accept papers. To provide Notice of Acceptance and other communications. To send e-certificates to all participants.	Members of the Scientific Committee, SSRU, and the EduHeart Technical Working Group, led by Ms. Joice Pamela R. Zorca, Ms. Christine S. Pasco, and Dr. Charlotte A. Yuson
Paper Presentation Committee	To make sure that all clusters have been appropriately assigned. To ensure that the online and onsite presenters have been notified and prepared for their presentations. To make sure that the papers are judged correctly.	Dr. Razeale G. Resultay Ms. Marie Christine S. Pasco Ms. Joice Pamela R. Zorca Dr. Vladimir Marie E. Cabutotan and all the Session Chairs, Cluster Session Speakers & Moderators, and Technical Support
Technical Support	To take charge of technical aspects and assist the participants with their technical needs. To assist during the event.	All Technical Support Team led by Mr. Wilson C. Bonifacio (onsite) and Mr. Albert Ragasa (online)
Registration and Evaluation Committee	To take charge of the online and onsite registration. To conduct post-evaluation activity to all participants.	Mr. Albert Ragasa and Mr. Charles Dustein Soriano Mr. Wilson C. Bonifacio
Breakout Sessions	To monitor the conduct of the breakout sessions online.	Ms. Joice Pamela R. Zorca
	To monitor the conduct of breakout sessions onsite.	Ms. Marie Christine S. Pasco
	To validate the results and concur with the final results.	Dr. Razeale G. Resultay

THE GUIDELINES

6. **Script of the Event:** This will be taken care of by the assigned hosts.

7. **Attire of the Technical Working Group:** Opening: Filipiniana/Cultural
   Closing: Corporate Attire
   Attire of the Participants: Corporate

8. **All Expenses** incurred will come from the conference fees.

9. **Dry run:** Dry run will be conducted a week before the event, online, and a day before the event, F2F.

10. **Specific Tasks and Timeline**

#	Task	DATE	SSRU	EDUHEART
1	Create e-poster	Dec. 10, 2025		X
2	Create post on FB	Dec. 10, 2025		X
3	Share post on FB on CALL FOR PAPERS TO BE SENT VIA EMAIL OR GOOGLE FORM Call for attendees	Dec. 11, 2025	X	X
4	Review all papers	January 15, 2026 onwards	X	X and others
5	Send Notice of Acceptance	January 16 2026 onwards	X	X
6	Create the proceedings with ISSN. Meeting with organizers	4th week of January 2026	 X	X X
7	Finalize papers for THE CONFERENCE PROCEEDINGS (for those who are willing to submit their papers in the conference proceedings) Meeting with organizers (SSRU & EduHeart)	February 2026 to 1st Week of March 2026	X	X
	Meeting with organizers (SSRU & EduHeart) Meeting with co-hosts and partners	February 23, 2026 7 PM Philippine Time February 26, 2026 7 PM Philippine Time	X	X

THE GUIDELINES

#	Task	DATE	SSRU	EDUHEART
8	Create all certificates Certificate of Participation Certificate of Recognition Certificate of Oral Presentation Best Paper and Best Abstract Awards Meetings online, etc.	2nd Week of March 2026		X
9	Finalize all tasks and activities. Dry Run	3rd Week of March 2026	X X	X X
	Meeting with organizers	March 15, 2026 7 PM Philippine Time	X	X
10	Travel to Thailand Meeting with co-host institutions in Thailand Dry Run & Technical Support Team Meeting	March 25, 2026 March 26, 2026	X	X
11	The Conference Awarding of Certificates to All	Mar 27, 2026	X	X
12	Post Evaluation	Mar 27, 2026	X	X
13	Sending of e-Certificates to all online and onsite participants (By the Technical Support Team)	Mar 31, 2026		X

THE GUIDELINES

Role of Co-Hosts and Partner Institutions

Aspect	Co-Host Institution	Partner Institution
Invitation to Present/Papers or to attend Conference Role	Required to invite Co-organizer	Required to invite Supporting Institution
Decision-Making	Shared with Host	Advisory only
Paper Review	Active, lead role	Optional, limited
Logistics	Direct involvement	NA
Financial Role	NA	NA
Certificate Authority	Co-signatory	Not a signatory
Visibility that includes the logo Recognition	High High	High High
Presenters	2 FREE	2 FREE
Organizers	5 FREE	5 FREE

The Papers

I. Abstract Format:

(1) Research Title
(2) Name of researcher/affiliation, email address, mobile number
(3) Abstract in IMRAD format
(4) Five (5) Keywords

II. Full Paper Format:

The paper format includes the following:
✔️Abstract of 250-300 words
✔️Keywords (3-5 words only)
✔️Introduction
✔️Methods
✔️Results and Discussion
✔️Conclusion/Recommendation
References (APA, 7th edition format)

III. PowerPoint Presentations

SLIDES 1-2
- TITLE OF RESEARCH
- NAME
- AFFILIATION
- EMAIL ADDRESSES
- MOBILE NUMBER

SLIDES 3-4
- INTRODUCTION
- BACKGROUND
- PROBLEM AREA/NEED OF RESEARCH
- RESEARCH METHODOLOGY

SLIDES 5-12
- RESULTS AND DISCUSSION
- INTEGRATE CONCLUSIONS/ RECOMMENDATIONS

THE GUIDELINES

IV. Abstract Guidelines

INTRODUCTION AND IMPORTANCE

What is the problem that you are researching, and why is this research necessary? Convince readers that your research is significant and worth reading. State a problem or explain why your present research is a time-effective solution to the gap.

METHODS

What did you do to conduct your study? Explain what you did. Your intervention and how you did it!

RESULTS

The essence of your paper. How did you arrive at your results (methods) and their significance (introduction)? Explain and interpret your findings. Assess or evaluate the outcomes.

DISCUSSION

Summarize the main findings of the study. Connect these findings to other results. They discuss the flaws in the current analysis and use them to suggest additional information, future research, recommendations, etc.

V. Criteria

A. BEST ABSTRACT

Significance of the Topic/Issue to the field of Research	60%
A. Importance of the Issue to the field of research	20%
B. Value of writing and other elements	20%
C. Conceptual Consistency of writing (objectives/argument)	20%
Methods Used	10%
Relevance and Practicality of results/discussion/conclusion	20%
Paper's Contribution to research/institution/community	10%
TOTAL	**100%**

B. BEST PRESENTER

Presentation Strategy	30%
Delivery and Confidence	30%
Materials to capture the audience attention	20%
Ability to Answer Questions	20%
TOTAL	**100%**

C. BEST PAPER

Significance of the Topic/Issue to the field of Research	60%
A. Importance of the Issue to the field of research	10%
B. Value of writing and other elements	10%
C. Conceptual Consistency of writing (objectives/argument)	10%
D. Methodological Consistency (design/sampling/data collection)	10%
E. General discussion and Conclusion	10%
F. Paper's Contribution to research/institution	10%
Manuscript (Creativity/Originality/Quality of Work)	40%
TOTAL	**100%**

CLUSTER 1: SCIENCE, TECHNOLOGY, SUSTAINABLE DEVELOPMENT, ENVIRONMENTAL AWARENESS, AI, AND GENDER & DEVELOPMENT

RESEARCH TITLE: Exploring End-Users' Experiences as a Basis for Designing a Biomics Learning Tool in Teaching and Learning Human Systems

CODE: IIRC- C1-P001 ONSITE

Angilleca C. Tolones, LPT, MAEd
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Adviser: Dr. Jed Henry S. Lacorte

Abstract

For science students, understanding complex biological concepts, especially those related to human systems, remains a major challenge. This study explores Biomics, an educational tool that uses comics with text and images to improve students' understanding of human systems. This study explores the experiences of science teachers and learners in teaching and learning human systems. Thematic analysis of interviews with end-users revealed three key themes: (1) Overcoming the Challenges of Teaching Complex Human Systems, (2) Beyond the Model: Addressing Functional Limitations, and (3) Bringing Human Systems to Life. Findings highlighted that Biomics must be presented as a solution that provides the integration of subtheme 1: user-friendly, subtheme 2: engaging visuals and storytelling, subtheme 3: student-centered content design, and subtheme 4: culturally relevant content. It illustrates how learning resources like Biomics can be used to solve problems in education and enhance science instruction in underprivileged settings. The study emphasizes the importance of learner-centered, adaptable materials that simplify and make complex and abstract scientific ideas understandable for all learners.

Keywords: human systems, Biomics, comics, end-users, qualitative exploratory design

RESEARCH TITLE: Gender Disparity of Women in Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA)

CODE: IIRC- C1-P002 ONLINE

Assoc. Prof. Mercy P. Guinto
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Adviser: Che P. Guinto

Abstract

The Philippine Atmospheric, Geophysical, and Astronomical Services Administration PAGASA plays a crucial role in providing meteorological services to support aviation safety and efficiency in the Philippines.
This study examined the gender disparity experienced by women working in the Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA). Despite significant advancements in gender equality globally, women in scientific and technical fields, including meteorology, often face systemic barriers to career progression and equitable treatment. This research aims to explore the extent of gender disparity, identify contributing factors, and propose strategies to foster a more inclusive work environment, including targeted involvement to address these disparities, such as implementing mentorship programs, promoting gender-sensitive policies, and fostering a supportive workplace culture. By shedding light on the challenges faced by women at the Philippine Atmospheric, Geophysical, and Astronomical Services Administration (PAGASA), this research contributes to the broader discussion on gender equality in the scientific community and underscores the importance of institutional commitment to advancing diversity and inclusion. Applying a mixed-methods approach, the study combines quantitative analysis of employment and salary data with qualitative insights gathered through interviews and surveys of female employees.
Recommendations are provided to strengthen its commitment to gender equality.

Keywords: PAGASA, Gender disparity, Perspective of women, Women in PAGASA

RESEARCH TITLE: The Development of an Authentication System with Multiple Factors for an Internet of Things-Based Customer Satisfaction Survey System Employing Software Engineering

CODE: IIRC- C1-P003
ONSITE

Dr. Brandon G. Sibbaluca
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Co-Authors: Jessie F. Sergote, Poinsettia A. Vida, Sammy V. Militante, Dennis A. Nava, Rb C. Batiancila, Rico Gabriel A. Ramos, Rebecca D. Miranda, E.R. Chua

Abstract

The initial goal of the study is to develop a system for IoT-based customer satisfaction surveys (CSS) that will yield valid and reliable findings to assist both academic and non-academic departments or support institutions in identifying areas for improvement. The study's specific objectives were formulated to implement various authentication strategies, including passcodes, quick response codes, and fingerprint biometrics, to secure survey responses from users. This system will automatically generate reports reflecting the institution's satisfaction levels for each department and the organization as a whole. This project assesses customer satisfaction perceptions regarding the developed system and identifies its advantages, along with an evaluation of the system's cost through benefit-cost analysis. The primary mechanism for the institution's IoT-based CSS is an Android-based mobile application designed to meet these objectives. The system will provide a summary report of each department's performance and the institution's overall performance on a monthly basis, allowing for convenient tracking of stakeholders' satisfaction levels with the provided services. A researcher-created evaluation form was distributed to participants to assess the application's qualities and their perceived CSS based on the generated report, employing the ISO-25010 standards for software quality. While the security features received a satisfactory rating, the portability features were rated as "very satisfactory." Overall, the grand mean rating for the project's perceived CSS achieved an "extremely satisfactory" evaluation. To enhance security features, the researcher recommended implementing the developed system and suggested adopting twenty-first-century mobile devices to remain aligned with rapidly evolving technologies.

Keywords: Customer satisfaction survey system, IoT based, Multi-factor authentication

RESEARCH TITLE: From Exploration of Filipino Learners' Environmental Awareness, Attitude and Practices to Formulation of a Policy Brief

CODE: IIRC- C1-P004
ONSITE

Carmel J. Pacificar, LPT, MAEd
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Adviser / Co-Author: Ma. Elena Bernadette P. Hojilla

Abstract

Environmental awareness, attitude and practices of learners refers to how learners understand environmental issues, feel about them and act in relation to them. However, despite continuous efforts to influence environmentally-driven learners, there is a lack of strong environmental policy to encourage sustainable practices. To address this gap, every learner should have these to develop into an environmentally aware and responsible citizen.This study determined the learners' environmental awareness, attitude, and practices as well as their significant relationships. A quantitative descriptive-correlational methodology through survey questionnaire was utilized. Seventy-three learners from a public high school in Iloilo, Philippines responded from two survey instruments used to collect data. Test for descriptive and correlational analyses were performed. Findings revealed that learners have high level of environmental awareness (M=3.45, SD=0.98) and environmental attitude (M=3.74, SD=0.93) and fair level of environmental practices (M=3.11, SD=1.05). There is a weak negative correlation between environmental awareness and attitude (r= -.121, p=.308); a significant moderate positive correlation between environmental awareness and practices (r= .465, p=.000); and a very weak positive correlation between environmental attitude and practices (r=.150, p=.207). Learners were much aware of all the indicators for environmental awareness and were generally passionate about the environment and are highly aware and knowledgeable about the environmental issues and concerns but lacks commitment in helping protect the environment. The policy brief formulated based from the findings recommended specifically on the integration of learning skills especially in Science teaching as it supports the DepEd Order no. 52, series of 2011 entitled, "Strengthening Environmental Education in Public and Private Schools", mandating all schools to intensify lessons regarding the environment on all Science subjects, use environmental concerns as tools for classroom drills, discussions and activities, and integrate these concerns in related learning areas.

Keywords: Environmental awareness; Environmental attitude; Environmental practices; policy brief

RESEARCH TITLE: **Utilization And Challenges of Artificial Intelligence (AI) In Selected Higher Educational Institutions (HEIS) In Thailand: Basis for the Development of Proposed Ai Policy Framework**

CODE: IIRC- C1-P005
ONSITE

Dr. Charlotte Amalie A. Yuson
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Adviser/Co-Author: Dr. Liza L. Quimzon

Abstract

This quantitative study investigates the utilization and challenges of Artificial Intelligence (AI) in selected Higher Educational Institutions (HEIs) in Northeastern Thailand, aiming to inform the development of a proposed institutional AI policy. The demographic profile revealed a workforce predominantly composed of young to middle-aged professionals, with a majority holding postgraduate degrees, suggesting a strong foundation for AI integration. Despite this, actual AI readiness remains moderate, as reflected in the mean utilization scores across four core academic domains—research (2.45), extension (2.41), instruction (2.38), and production (2.24). Tools such as ChatGPT, Grammarly, Canva Magic Studio, and Google Bard are widely used, particularly for writing, communication, and content development, while more complex platforms like Elicit and Tableau showed lower usage, indicating gaps in accessibility and training. Institutional profiles showed a balance between public and private HEIs, yet limitations in infrastructure, such as the number of computer labs and AI-integrated facilities, remain significant. The study also identified key challenges, with an overall "very serious" rating (mean= 2.53), particularly in instruction, research, and extension. Rapid AI evolution, lack of ethical guidelines, data security concerns, and insufficient training were cited as major barriers. Notably, gender and marital status showed significant positive correlations with AI utilization, while permanent employment status and higher education levels correlated negatively in certain domains. The frequency of AI-related seminars emerged as a strong predictor of higher AI use. These findings underscore the need for targeted faculty development, resource support, and robust institutional policies to promote equitable and sustainable AI integration. The study provides a data-driven foundation for crafting a strategic AI policy to enhance teaching, research, extension services, and production functions in Thai HEIs.

Keywords: Artificial Intelligence (AI), Higher Education Institutions (HEIs), AI utilization, AI challenges, AI policy development

RESEARCH TITLE: **AI-giarism or Assistance? Negotiating the Boundaries of AI Use in Academic Writing: Evidence from Chinese Undergraduate English Majors**

CODE: IIRC- C1-P006
ONSITE

Assoc. Prof. Dr. Wenwen Tian
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Abstract

The rapid advancement of generative artificial intelligence (GenAI), particularly OpenAI's ChatGPT, DeepSeek, has significantly impacted higher education, offering transformative opportunities alongside critical challenges to academic integrity. This study investigates Chinese undergraduate English majors' perceptions of GenAI integration, conceptualizing OpenAI not merely as a functional tool but as a disruptive "third party" that complicates the traditional teacher-student dyad. Guided by a social constructivist framework, a mixed-methods design (n=53) was employed to explore students lived experiences and ethical negotiations. Findings indicate that students generally acknowledge GenAI' s potential to improve learning efficiency, enhance language proficiency, and offer cognitive scaffolding. However, participants also express profound concerns regarding the "double-edged sword" of AI use, specifically the fluid boundaries between assistance and "AI-giarism," the risks of over-reliance, and the potential decline of critical thinking, often described as "diminished intelligence". The results suggest that academic integrity is not a static set of rules, but a socially constructed process mediated through interactions with peers, teachers, and institutional norms. Notably, students' ethical choices are heavily influenced by the desire to maintain pedagogical trust and avoid challenging the instructor's authority. Based on these insights, the study proposes practical recommendations for higher education institutions to move beyond detection-oriented policies. It advocates clearer ethical guidelines, the promotion of "evaluative thinking," and the integration of critical AI literacy into academic curricula to ensure the responsible and reflective use of AI in L2 writing.

Keywords: Generative AI (GenAI), Academic integrity , Social constructivist framework, AI-giarism, Critical AI literacy

RESEARCH TITLE: **Adoption and User Attitudes Toward Modernized Transportation System in the Philippines: A Redefinition of Experience**

CODE: IIRC- C1-P007 ONLINE

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Co-Author: Cynthia C. Facundo

Abstract

While sustainability and innovation are the name of the game, and the endless increase of our population, people are seeking economic growth, and mobility has become a privilege. To foster a socially integrated, thriving society, the modernization on all means of transportation is of privilege. This research addresses the Nine United Nations Sustainable Goals for Modernized Public Transport, such as SDG 3,5,8, 9,10,11, 12,13, and 16. This study employed a mixed-method design gathering data through survey questionnaires and blended interviews with 244 commuter participants. The research investigated the experience, adoption, and attitudes of commuters towards the modernization of app-hailing services, modernized PUVs, and rail upgrades. By identifying the challenges, this study fills a critical knowledge gap and provides a foundation for viable recommendations to help the government, specifically the LTFRB, in pursuing the project of modernization that will really change the lives of the people. Results indicate that while the technological shift (app and cashless payment) is welcomed and seen as "easy to learn", the physical infrastructure (route coverage and station proximity) and economic factors (surge pricing and higher fare) are the primary hurdles. Commuters are willing to adopt a modernized system for the sake of comfort and dignity in travel, but only if these systems become more accessible and affordable for the average Filipino workers and students. To ensure a deeper understanding on modernization of public transport, the government should share with the public the summary of the financial budget from which they get the funds, the feasibility study on the reliability of the project, and its sustainability. Remember, a progressive government is a progressive economy.

Keywords: sustainability, modernization, app-hailing services, modernized PUVs, rail upgrades

RESEARCH TITLE: **Science Mobile Learning App to Enhance Students' Performance in Biology**

CODE: IIRC- C1-P008 ONSITE

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Abstract

This one group pretest-posttest design aimed to ascertain the effectiveness of Scitocin science mobile learning application as a supplementary tool to improve the performance of Grade 9 learners in selected topics in Biology 9 (Living Things and their Environment) using purposive sampling. The data were obtained using a researcher-made 30-item multiple type of test, validated and pilot tested. Mean and t-Test were utilized to analyze the data. The level of significance was set at 0.05 alpha level. The data showed that the level of performance of the learners was 'Fairly Satisfactory' prior to the intervention. After the exposure to the Scitocin mobile learning application, results showed that the performance of learners in Biology moved a scale from 'Fairly Satisfactory' to 'Very Satisfactory' after the intervention. The findings also revealed a significant difference between the pretest and posttest mean scores of the learners. Thus, Scitocin a science mobile learning application can be used as an effective intervention in improving the performance of learners in Biology 9. Therefore, it is recommended that teachers should utilize Scitocin a science mobile learning application as a supplementary tool for blended learning. Further, teachers were encouraged to create a simple yet user-friendly and comprehensive mobile app as an alternative platform for dissemination of digitized learning materials to provide a contextualized dissemination of strategies for an effective teaching-learning to happen.

Keywords: : mobile application, mobile learning, least learned competencies, e-module, video lesson, educational games, living things and their environment

RESEARCH TITLE: **Understanding the Role of Artificial Intelligence–Assisted Instruction on the Mathematics Learning Experiences of Junior High School Students at Immaculate Conception Academy – West Campus.**

CODE: IIRC- C1-P009 ONSITE

John Philip M. Alexander
Immaculate Conception Academy - West Campus
Dasmarinas, Cavite

Abstract

This qualitative study explored the role of Artificial Intelligence (AI)–assisted instruction in shaping the Mathematics learning experiences of Junior High School students at Immaculate Conception Academy, Inc., Dasmariñas, Cavite. Specifically, it examined how students described their learning experiences, perceived the effectiveness of AI in understanding mathematical concepts, identified the benefits and challenges of AI use, and reflected on its influence on motivation, engagement, and confidence. Using purposive sampling, data were collected through semi-structured interviews and thematic analysis was employed to interpret participants' responses. Findings revealed that students perceived AI-assisted instruction as highly engaging, interactive, and supportive, providing step-by-step explanations, immediate feedback, and multiple solution strategies that facilitated a deeper understanding of complex topics such as Algebraic expressions and problem-solving. Students also reported benefits such as personalized and self-paced learning, enhanced independent practice, increased confidence in solving problems, and improved motivation to learn Mathematics. However, several challenges emerged, including difficulty understanding some AI-generated explanations, overdependence on AI tools, internet connectivity issues, limited critical thinking practice, and occasional misinterpretation of student inputs by AI systems. Despite these challenges, students emphasized that teacher guidance remains indispensable in ensuring comprehension, contextualizing learning, and fostering critical thinking. Overall, AI-assisted instruction was perceived as a valuable supplementary tool that enhances learning outcomes and student engagement while promoting individualized learning opportunities. Based on these findings, the study recommends a balanced integration of AI in Mathematics instruction, structured guidance in AI tool usage, consistent access to technology, and the development of activities that encourage independent problem-solving. This study contributes to understanding the potential of AI in supporting student-centered learning, offering insights for educators, administrators, and curriculum developers seeking to integrate digital technology effectively into the Mathematics classroom.

Keywords: Artificial Intelligence – assisted instruction, mathematics learning, Junior high school, student engagement, motivation

RESEARCH TITLE: **Designing and Developing Mangrofied, a Localized Picture Book on Mangrove Species of Leganes Integrated Katunggan EcoPark (LIKE) Using the Four-D Model**

CODE: IIRC- C1-P010 ONSITE

Lianne Grace S. Parreñas, LPT,MAEd
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Co Author /Adviser: Dr. Jed Henry Lacorte

Abstract

This study focused on the design and development of Mangrofied, a localized picture book featuring mangrove species found in the Leganes Integrated Katunggan EcoPark (LIKE), Iloilo, Philippines, to address Grade 9 learners' gaps in species-level mangrove knowledge. Anchored in pragmatism and guided by the Four-D (Define, Design, Develop, and Disseminate) Model, the study employed a mixed-methods design. In the Define phase, semi-structured interviews with three secondary science teachers revealed persistent challenges, including learners' difficulty distinguishing mangrove species, limited access to localized and updated instructional materials, and constraints in implementing experiential learning. These findings informed the content, visual design, and pedagogical features of the picture book. The developed material underwent expert evaluation using the Department of Education's Evaluation Rating Sheets for Locally Developed Learning Resources, confirming its accuracy, clarity, organization, and curricular alignment. In the Disseminate phase, five Biology teachers assessed the acceptability of Mangrofied, yielding an overall mean rating of 4.46, interpreted as Very High Acceptability. Results indicate that localized, visually rich picture books can effectively support contextualized science instruction, strengthen ecological literacy, and enhance species recognition when field-based learning is limited. The study underscores the value of place-based, curriculum-aligned instructional materials in advancing environmental education under the MATATAG Curriculum and contributing to broader sustainability goals.

Keywords: localized instructional materials; mangrove species; picture book; environmental education

RESEARCH TITLE: From Alienation to Symbiosis: Reclaiming Language in the Age of AI

CODE: IIRC- C1-P011
ONSITE

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Abstract

This paper addressed the profound crisis of "language alienation" in the age of generative artificial intelligence (GenAI). It first analyzes the three primary manifestations of this alienation: the algorithmization of language generation, the homogenization of language expression, and the virtualization of language communication. It then reveals how these manifestations produce a threefold crisis: the erosion of subjectivity, the degeneration of thought, and the collapse of Being-with. Based on this critique, the paper constructs a framework for "human-AI symbiosis" to transcend alienation, the core of which is to establish a human-led, ethically-guided, and co-evolutionary relationship.

Keywords: Language alienation. Generative artificial intelligence (GenAI) Human-AI symbiosis.

RESEARCH TITLE: AI Prompt Design Practices Using ChatGPT for Biology Instruction Among Senior High School Teachers in Iloilo City Public Schools

CODE: IIRC- C1-P012
ONSITE

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Abstract

Although generative artificial intelligence (AI) is increasingly integrated into education, guidance on designing effective prompts for classroom use remains limited. This study explored how Senior High School teachers in public senior high schools in Iloilo City design prompts when using ChatGPT for Biology instruction. Using a qualitative descriptive–exploratory design, six purposively selected teachers were interviewed, and their responses were analyzed thematically following Braun and Clarke's six-phase framework. Four key themes emerged: (1) Strategic Prompt Construction, (2) Pedagogical Alignment and Student-Centered Design, (3) Prompt Refinement and Accuracy Assurance, and (4) Perceived Instructional Value and Quality Constraints. Teachers reported crafting prompts aligned with lesson objectives and student readiness, iteratively refining prompts for accuracy, and leveraging AI to enhance instructional efficiency, while facing challenges related to time, expertise, and confidence. These findings underscore the need for structured guidelines, professional development, and adaptable prompt templates to support effective and responsible AI integration. The results offer practical insights for DepEd initiatives aimed at fostering pedagogically meaningful, student-centered AI use in science classrooms.

Keywords: ChatGPT, AI prompt design, science education, thematic analysis, teacher practices

RESEARCH TITLE: **AI-Assisted Task-Feedback Teaching in College English Reading and Writing: A Reform Study**

CODE: IIRC- C1-P013 ONLINE

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Abstract

This paper focuses on the reform of college English reading and writing instruction, delving into a task-feedback teaching model assisted by artificial intelligence. By analyzing the current state of teaching and its inherent problems, this study elaborates on the reform background, specific methods, advantages, strengths, difficulties, and challenges. Integrating a literature review and citations, it argues for the model's significance in enhancing teaching quality, cultivating students' practical language abilities, and serving national development needs. The aim is to provide a comprehensive theoretical and practical reference for college English teaching reform, promoting innovation in teaching methods and improving educational quality.

Keywords: College English teaching reform, task-feedback model, artificial intelligence assistance, language ability cultivation, educational quality improvement

RESEARCH TITLE: **Checkd: An AI-Powered Web Application for News Comparison and Analysis**

CODE: IIRC-C1-S001 ONLINE

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Abstract

The growing spread of online misinformation presents significant challenges in the Philippines, where information overload, bias, and limited time hinder accurate news verification. This study developed Checkd, an AI-powered web application designed to help users heuristically identify misinformation by comparing multiple news sources, promoting critical thinking and media literacy. Using developmental and descriptive research designs, data were collected via a validated survey to identify users' verification challenges and determine essential application features. Checkd was developed with Scrum methodology and integrates real-time news aggregation, AI-generated summaries, comparative analysis, video and social media post evaluation, and a browser extension. Findings revealed that users face major difficulties in verifying news, and all core features were deemed essential and usable, with an overall UMUX score of 87.57. Checkd provides a practical platform that empowers users to spot misinformation and make informed decisions, contributing to a more discerning Philippine society.

Keywords: AI, web application, misinformation, social media, news comparison, critical thinking, media literacy

RESEARCH TITLE: **ECHOCOACH: Developing English Communication Clarity and Confidence Through Technology**

CODE: IIRC-C1-S002 ONLINE

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Abstract

English communication proficiency remains a significant challenge among Filipino college students, particularly in spoken English, which is crucial for both academic engagement and professional readiness. Many students possess strong ideas but struggle to convey them clearly, often due to anxiety and limited opportunities for communicative practice, despite having adequate cognitive content. Traditional language instruction frequently fails to provide sufficient real-time feedback or structured support for speaking, leaving a critical gap in learners' development. To address this, the present study developed EchoCoach, an AI-powered mobile application designed to enhance English speaking skills through speech recognition, automated corrective feedback, adaptive assessments, and performance tracking. Grounded in the need for learner-centered, data-driven, and accessible language support, EchoCoach aims to supplement classroom instruction while reducing speaking anxiety. The system was evaluated using a customized Software Usability Measurement Inventory (SUMI) questionnaire, measuring efficiency, affect, helpfulness, control, and learnability. Results showed an overall mean score of 4.12, indicating high usability and effectiveness. These findings demonstrate that EchoCoach is a promising tool capable of supporting Filipino college students in articulating their ideas confidently and accurately, bridging gaps in traditional language learning approaches, and fostering improved English communication competence in higher education contexts.

Keywords: English proficiency, AI-powered language learning, Adaptive learning systems, English Communication Skills, SCRUM methodology,

RESEARCH TITLE: **PerFit: An AI-Powered Fitness Companion with Integrated Form Correction**

CODE: IIRC-C1-S003 ONLINE

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Abstract

The rapid shift toward home-based fitness has introduced a critical supervision void, where the absence of professional guidance significantly increases the risk of musculoskeletal injuries due to improper exercise execution. This study addressed this safety gap by designing and developing PerFit, a mobile application capable of providing real-time, AI-driven form correction to ensure workout safety and efficiency. Employing a descriptive and developmental research design, the project utilized the Agile SCRUM methodology to engineer the system using the Flutter framework and MediaPipe for low latency pose estimation, alongside the Gemini API for personalized analytics. Data gathered from twenty-two respondents, including fitness enthusiasts and professional coaches, revealed that the difficulty maintaining correct form was the primary barrier to effective home exercise. The application's performance was evaluated using the System Usability Scale (SUS), yielding an overall score of 87.61, which categorizes the system as Excellent and Best Imaginable. These findings conclude that PerFit successfully abstracts complex computer vision functionality behind an intuitive interface, serving as an effective digital spotter that bridges the gap between professional coaching and independent home fitness.

Keywords: Artificial Intelligence, Computer Vision, Pose Estimation, Mobile Application, Agile SCRUM, Home Fitness, Form Correction

RESEARCH TITLE: **Anti-Smoke Belching Detection System with Non-Contact Apprehension Using Yolov8**

CODE: IIRC-C1-S004 ONLINE

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Abstract

Air pollution caused by vehicular emissions remains one of the most pressing environmental problems in urban areas. In Calamba City, the lack of consistent enforcement of anti-smoke belching regulations continues to worsen air quality. To address this, the study developed an Anti-Smoke Belching Detection System with Non-Contact Apprehension using YOLOv8, which automates the detection and reporting of smoke-belching vehicles in real time. The system uses a Raspberry Pi 5 with a Camera Module V2 to capture live footage, and through computer vision and deep learning, it detects smoke emissions and identifies violators via license plate recognition.

Once a violation is detected, a report is automatically sent to authorities through SMTP, enabling non-contact apprehension. The study followed the Rapid Application Development (RAD) methodology and was evaluated based on ISO 25010 standards—functionality, reliability, efficiency, and usability. Results showed high accuracy, responsiveness, and user satisfaction, proving the system's potential to enhance air quality monitoring and support the implementation of environmental laws in Calamba City.

Keywords : Smoke Belching, Yolov8, SMTP, Raspberry Pi, ISO 125010

RESEARCH TITLE: **LegallyAI: Advanced OCR-Based Legal Document Review And AI Analysis System**

CODE: IIRC-C1-S005 ONLINE

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Abstract

Legal documents in the Philippines are often difficult for non-experts to understand due to complex language and structure. To address this issue, this study developed LegallyAI, an OCR-based legal document review and AI-assisted analysis system designed to simplify legal document comprehension and provide guided user support. The study aimed to: (1) identify the problems encountered when reviewing legal documents, (2) determine essential system features, (3) develop the application using the Feature-Driven Development (FDD) methodology, and (4) evaluate the system's usability through the System Usability Scale (SUS). A descriptive-developmental research design was employed, involving five legal professionals and thirty legal document users. Findings highlighted difficulties in interpreting legal clauses, the need for simplified summaries, and the lack of tools that offer structured
guidance. Survey results indicated strong agreement regarding the usefulness of features such as OCR-based scanning, AI-generated bilingual summaries, clause extraction, risk identification, a legal chatbot, and customizable templates. System development followed the FDD process, and usability testing produced an average SUS score of 78.4, indicating good and acceptable usability. Overall, LegallyAI effectively enhances legal document review by providing AI-assisted analysis, interactive guidance, and accessible templates, thereby improving legal literacy and empowering users.

Keywords: OCR, Legal Analysis, AI Chatbot, Feature-Driven Development, System Usability Scale, Document Review System.

CLUSTER 2: EDUCATION, HUMANITIES, AND SOCIAL SCIENCES

RESEARCH TITLE: **Challenges Encountered by a Pre-service Teachers of a State University in Practice Teaching Inputs for Program Enhancement**

CODE: IIRC- C2-P001 ONSITE

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Abstract

This quantitative descriptive study investigated the challenges faced by pre-service teachers of Cavite State University–Imus Campus during their practice teaching in both physical and online settings. Using a self-made survey questionnaire administered to secondary pre-service teachers deployed in three junior high schools in Imus City, the research examined: (1) the assessment of challenges in demonstration teaching across modalities, (2) practice teaching performance, (3) the relationship between perceived challenges and performance, and (4) a proposed enhancement program.
Findings revealed that pre-service teachers experienced significant difficulties in both physical and online practice teaching, particularly in managing classroom challenges and fostering students' critical-thinking skills. Results underscored the need for remedial support in these areas. Consequently, the study recommended that state universities implement additional activities and structured programs to strengthen pre-service teachers' personalities, communication abilities, and critical-thinking skills. An action plan was developed to address these needs.

Keywords: challenges, enhanced, pre-service teachers, state university

RESEARCH TITLE: **Science Teachers' Perspectives on Cultivating Skepticism to Foster Critical Thinking**

CODE: IIRC- C2-P002 ONSITE

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Abstract

In an information-rich era saturated with misinformation, skepticism is essential for evaluating scientific claims and fostering critical thinking. This study explored science teachers' perspectives on cultivating skepticism within biology education, specifically examining their views, instructional strategies, and the challenges they encounter in classroom practice. The study is grounded in constructivism and theoretically underpinned by interpretivism and Vygotsky's Social Constructivism. Utilizing a qualitative narrative inquiry design, the study involved four purposefully selected STEM-strand biology teachers from Iloilo City with over five years of teaching experience. Data were collected through semi-structured interviews and field notes, and subsequently analyzed using Riessman's narrative thematic analysis. Findings revealed three major themes: (1) teachers view skepticism as a lens for deepening scientific thinking by emphasizing evidence-based reasoning; (2) skepticism is cultivated through intentional strategies such as Socratic questioning, debates, and media-source evaluation; and (3) teachers must navigate pedagogical and institutional barriers, including severe time constraints, resource scarcity, and cultural norms where questioning is sometimes perceived as a sign of disrespect. This study concludes that while skepticism is a pedagogical necessity for 21st-century literacy, its integration requires institutional support and a shift away from rote performance. These insights are intended to inform teacher training, curricular design, and policy initiatives.

Keywords: Critical Thinking, Narrative Inquiry, Biology Teaching, Skepticism, Teacher Perspectives

RESEARCH TITLE: **Stranger Danger: A Transhumanism Study of the Filipino Indie Film "Instalado"**

CODE: IIRC- C2-P003 ONLINE

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Abstract

Science tells us that human anatomy is the highest form of mammal to have ever existed on earth because of its capability to think toward achieving progress. However, despite our superiority, we are also naturally insatiable with our biological features, including our natural intelligences; hence our desire to be more intelligent, even if it means through artificial mind uploading. However, this scientific process is perceived as foreign to our natural human brain, thereby posing a threat to the human species. This study examined the mishaps of artificial mind uploading presented in the Filipino independent film "Instalado," specifically in the education paradigm, psychological, and mental aspects. While some support this highly technological project for the benefits it offers, its potential dangers should not be put in the shadows, especially if humans are to risk their one and only mortal lives.

Keywords: transhumanism, artificial intelligence, mind uploading, dangers

RESEARCH TITLE: **Enhancing Undergraduate Research Skills: Development and Validation of Scaffolded Research Worksheets in Industrial Technology Education**

CODE: IIRC- C2-P004 ONSITE

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Abstract

This action research investigated the development and level of acceptability of research worksheets and templates designed to assist Bachelor of Industrial Technology (BIT) and Bachelor of Technology and Livelihood Education (BTLEd) students in conducting academic research at Pangasinan State University (PSU) Asingan Campus. A total of 191 students participated during the School Year 2024–2025. The worksheets were evaluated for clarity, organization, relevance, and usability using a Likert-type scale. Descriptive statistics were applied to determine mean scores and interpret levels of acceptability. Results revealed that the developed worksheets were rated "Excellent" (M = 3.65) in structure and clarity, "Good" (M = 3.25) in aiding comprehension of research concepts, and "Excellent" (M = 3.50) in promoting independent learning. Findings affirm the effectiveness of structured research worksheets as scaffolding tools in guiding students through the research process. The study recommends institutional adoption of the worksheets as standardized tools for undergraduate research instruction.

Keywords: Research worksheets; template development; action research; student acceptability; PSU Asingan; educational scaffolding; research instruction; academic skills

RESEARCH TITLE: **Between Idealism and Reality: Career Motivation and Professional Commitment of University Foreign Language Teachers in China**

CODE: IIRC- C2-P005 ONLINE

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Abstract

This study investigated the career motivations of in-service foreign language teachers in Chinese universities. Using a mixed-methods design, the study combines questionnaire surveys and semi-structured interviews to examine the motivation and influencing factors of 110 foreign language teachers from 25 universities across China.

The findings indicate that Chinese university foreign language teachers possess a "mixed motivation", including intrinsic, altruistic, and extrinsic motivational orientations. 80% of participants self-reported that intrinsic motivation (e.g., personal interest, sense of achievement) was the primary driver. Altruistic motivation, including the desire to contribute to students' development and society ranked second, whereas external factors, such as salary, play a comparatively limited role. The study further suggests that the participants started to lose their passion, interest, and engagement over time. Nearly 30% of the respondents reported that they would reconsider their career choice if given another chance. Although results show no significant gender differences in overall motivational patterns, male teachers showed a slightly greater tendency toward extrinsic motivation than their female counterparts.

Overall, these findings highlight the importance of intrinsic and altruistic motivations in sustaining foreign language teachers' professional commitment, while also drawing attention to the gradual weakening of motivation. The study offers pedagogical and policy implications for enhancing teacher satisfaction, stabilizing the teaching workforce, and supporting sustainable professional development in higher education.

Keywords: Generative AI, academic integrity, proximization strategies, technology containment, discursive legitimization

RESEARCH TITLE: **Preferred Non-Conventional Graduate Education Design of the Working Professionals in Pangasinan**

CODE: IIRC- C2-P006 ONLINE

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Abstract

This study examined the preferred non-conventional graduate education design among working professionals in Pangasinan, Philippines. The research aimed to inform institutional strategies that promote inclusive, flexible, resilient, and future-oriented alternatives to traditional face-to-face graduate instruction. Anchored in the context of post-pandemic educational transformation, globalization, Education 4.0, and the Fourth Industrial Revolution (IR4), the study employed a descriptive cross-sectional design involving 205 working professionals selected through purposive sampling. Data were collected using a two-phase survey instrument and analyzed through descriptive statistics and conjoint analysis.

Findings revealed that flexibility in class scheduling, functionality of the Learning Management System (LMS), mentoring assistance for thesis and dissertation completion, manageable coursework requirements, and financial support mechanisms were the most valued factors. The most preferred combination included light LMS utilization, class scheduling by agreement, regular coursework submission with reasonable extensions, installment payment options, and continuous mentoring support. The results provide a practical framework for higher education institutions seeking to enhance graduate program accessibility, retention, and completion rates among working professionals.

Keywords: non-conventional graduate education, conjoint analysis, working professionals

RESEARCH TITLE: **Assessing Faculty Performance Through Multi-Source Evaluation: A Study on The Dean, Student, And Faculty Self-Assessments at Emilio Aguinaldo College**

CODE: IIRC- C2-P007 ONLINE

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Abstract

This study examined how faculty are assessed for their performance at Emilio Aguinaldo College, Cavite (EACC), through a 360-degree evaluation process to determine whether Deans, faculty, and students have different views of teaching. Student evaluations alone can be subjective and do not represent all aspects of effective teaching. The data collected were from 198 participants: 1 Dean, 25 faculty members, and 172 students, using a standardized evaluation tool (Faculty Performance Evaluation System - Form QF-HRD-023). A statistical analysis of means, standard deviation, and One-way ANOVA was used to show an overall average score of 3.68, which falls into the "outstanding" category. There was also no statistically significant difference among the three types of evaluators (F= 1.71; p= 0.189), suggesting that all three groups agree on what constitutes quality education. The averages were: 3.65 (SD = 0.43) for students; 3.78 for the Dean; and 3.79 for faculty. Although the averages differed among the groups, the differences were not statistically significant. Overall, the results indicated that the current evaluation system is functioning well; however, there is room to improve alignment between educators' and learners' viewpoints.

In conclusion, this study supports EAC's efforts to foster a culture of professionalism in the teaching profession.

Keywords: Faculty Performance, Multi-Source Evaluation, 360-Degree Feedback, Higher Education, Pedagogical Quality, Institutional Excellence.

RESEARCH TITLE: **Gender-Fair Language in the Study Guides: Basis for Innovative Strategies in Promoting Inclusivity**

CODE: IIRC- C2-P008 ONLINE

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Abstract

This study investigated the presence and patterns of gender representation in study guides at Pangasinan State University (PSU) to enhance inclusive literacy through gender-fair language. Using qualitative content analysis, the research uncovers persistent gender biases, such as the dominant use of masculine pronouns and terminology that reinforce stereotypes and marginalize other gender identities. The findings underscore the need for inclusive linguistic practices, particularly through neutralization and feminization strategies—such as replacing masculine generics with gender-neutral alternatives. The study emphasizes the role of language in forming societal attitudes and perceptions. The use of inclusive terminology, avoidance of sexist representations, and alignment with modern communication standards are essential in advancing equitable and inclusive learning environments. By adopting gender-fair strategies, academic communication can better reflect the values of diversity and equality in a globalized world.

Keywords: Gender-fair language, study guides, inclusivity, linguistic strategies, educational innovation

RESEARCH TITLE: **A Study on the Construction of Chinese Cultural Cultivation Model and Cultural Integration Path for International Students in China—Based on Classroom Observations and Questionnaire Surveys**

CODE: IIRC- C2-P009
ONSITE

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Abstract

With the continuous implementation and advancement of the Belt and Road Initiative, international exchanges between China and the world have significantly increased, bringing with it a substantial influx of international students to China. The cultivation of Chinese culture among international students in China is the most important guarantee for their in-depth understanding of China and their successful life and study here, and it also becomes the most powerful footnote when they tell China's stories after returning to their home countries. Taking international students at a university in Xi'an City, China, as the research subject, and focusing on their Chinese cultural learning, life experiences, and corresponding improvement strategies, this study conducted classroom observations and questionnaire surveys. It preliminarily constructed a model pathway for cultivating Chinese culture among international students in China, and roughly outlined their cultural integration map during their stay in China.

Keywords: Chinese culture cultivation, international students, cultural integration, Belt and Road Initiative, intercultural learning

RESEARCH TITLE: **Study on Peer Feedback Literacy in English Writing Among Science and Engineering Postgraduates**

CODE: IIRC- C2-P010
ONLINE

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Abstract

To explore the current status of peer feedback literacy in English writing among first-year graduate students majoring in science and engineering, this study adopted a questionnaire to investigate 99 students' English writing feedback literacy. The research result revealed that the overall peer feedback literacy of the graduates was above the medium level (ranging from 3.74 to 3.96 points). Among them, the students' attitude towards feedback and cooperation performed the best (3.96 points). Their cognition and understanding of peer feedback were clear (3.86 points); their capacity to receive feedback were also strong, scoring 3.82. However, their abilities to provide and use the feedback were relatively weak (3.74 and 3.78 points respectively). Based on the these results, suggestions were put forward, including strengthening feedback skills training, improving the feedback evaluation system, and constructing a personalized feedback guidance mechanism, so as to provide references for enhancing the quality of English writing teaching for postgraduates.

Keywords: Peer feedback literacy, English writing, graduate students, feedback skills training, personalized guidance

RESEARCH TITLE: **Exploring Learners' Experiences in Conducting School-Based Phytochemical Analysis through Narrative Inquiry**

CODE: IIRC- C2-P011
ONSITE

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Abstract

In the landscape of modern science education, hands-on laboratory experiences are vital for transforming abstract concepts into tangible, real-world understanding. This study explores Grade 12 STEM learners' experiences in conducting school-based phytochemical analysis, specifically examining their perceptions of laboratory engagement, meaning-making, and the challenges encountered during the process. The study is grounded in constructivism and theoretically underpinned by experiential learning theory and Vygotsky's social constructivism. Utilizing a qualitative narrative inquiry design, the study involved three purposefully selected learners from a public secondary school with direct experience in performing phytochemical assays. Data were collected through semi-structured interviews and laboratory observations, and subsequently analyzed using Riessman's narrative thematic approach. Findings revealed six major themes: (1) hands-on engagement acts as a catalyst for active and authentic learning; (2) learners navigate and adapt to systemic laboratory constraints; (3) the activity fosters confidence and scientific identity formation; (4) peer collaboration serves as an essential anchor for cognitive and emotional support; (5) learners recognize the real-world relevance and future application of science; and (6) the inquiry process is defined by an emotional landscape transitioning from anxiety to pride. This study concludes that authentic laboratory work is a pedagogical necessity for fostering scientific competence and identity development, even in resource-limited settings. These insights are intended to inform teacher training, resource allocation, and the institutionalization of inquiry-based practices.

Keywords: Hands-on Learning, Laboratory Experimentation, Learner's Experiences, Narrative Inquiry, Phytochemical Analysis

RESEARCH TITLE: **A Corpus-Based Study on the Adaptation of Chinese Discourse to Pakistani English: A Case Study of the "China-Pakistan Action Plan (2025-2029)"**

CODE: IIRC- C2-P012
ONSITE

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Abstract

The "Action Plan to Foster an Even Closer China-Pakistan Community with a Shared Future in the New Era (2025-2029)", signed in September 2025, serves as the flagship policy document guiding the second phase of the China-Pakistan Economic Corridor (CPEC). This study investigates the linguistic adaptation of its official English translation to the norms of Pakistani English. Drawing on World Englishes (Kachru, 1985), Communication Accommodation Theory (Giles & Ogay, 2007), and Critical Discourse Analysis (Fairclough, 2013), this research employs a corpus-based approach to compare the English translation of the Action Plan with Pakistani native English texts, including official statements from the Ministry of Foreign Affairs of Pakistan and CPEC-related media discourse from Dawn and The News. The analysis focuses on lexical choices (particularly the translation of Chinese political concepts), syntactic structures, and discourse strategies. Findings aim to identify features of "Chinese English" that may affect Pakistani readers' comprehension and acceptance, and to propose an AI-assisted framework for optimizing language adaptation in cross-cultural policy communication. This study contributes to the under-explored field of "South-South translation" and offers practical implications for enhancing the effectiveness of China's international discourse under the Belt and Road Initiative.

Keywords: Pakistani English adaptation, China-Pakistan Economic Corridor, cross-cultural policy communication, South-South translation, discourse strategies

RESEARCH TITLE: **Experiences And Challenges of Sports Coordinators and Coaches in Managing Sports Programs of Cavite State University (Cvsu)**

CODE: IIRC- C2-P013
ONLINE

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Abstract

Sports coordinators and coaches play vital roles in planning, organizing, and evaluating sports initiatives at Cavite State University (CvSU), yet their experiences and challenges remain underexplored. This research investigates the experiences of sports coordinators and e-sports coaches at CvSU, aiming to enhance program delivery and inform effective policies for sports development. Using a qualitative phenomenological approach, the study involved 13 participants who shared their firsthand experiences in managing sports programs.

Findings reveal that e-sports coaching at CvSU presents both opportunities and challenges, as coaches face demands related to infrastructure, scheduling, and institutional constraints. While students recognize the educational benefits of e-sports, such as cognitive development and leadership skills—insufficient institutional support hampers program sustainability.

The analysis highlights the need for proper governance, adequate resources, academic integration, and sustainable development plans. Furthermore, it emphasizes the need for a digital management system dedicated to e-sports activities, distinct from traditional athletic management.

Keywords: Educator, Physical Education, Sports (Badminton), Researcher, Academic Leadership

RESEARCH TITLE: **Assessment Of Learners' Basic Science Process Skills as Input for A Supplementary Lesson Exemplar**

CODE: IIRC- C2-P014
ONSITE

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Abstract

This study assessed the Basic Science Process Skills (BSPS) of Grade 7 learners to serve as the empirical basis for developing a supplementary lesson exemplar. Utilizing a developmental research design and the Input–Process–Output (IPO) framework, the study focused on 30 Grade 7 students in the Science, Technology, and Engineering (STE) program at a public secondary school in the Philippines. Data were gathered through a 30-item diagnostic test measuring seven core competencies—observing, classifying, inferring, predicting, measuring, communicating, and interpreting data—alongside a Learner Difficulties Checklist and qualitative open-ended questions. Quantitative analysis through descriptive and inferential statistics, combined with thematic analysis of learner challenges, identified specific proficiency gaps and instructional needs. These findings informed the design of a contextualized and skill-specific supplementary lesson exemplar aligned with the K to 12 competencies and the MATATAG curriculum reforms. By bridging the gap between diagnostic assessment and targeted intervention, the study supports the goals of the DepEd Basic Education Development Plan 2030 and Sustainable Development Goal 4, providing evidence-based instructional materials to enhance scientific literacy and inquiry-based learning in the early years of secondary education.

Keywords: Basic Science Process Skills, Developmental Research, Grade 7 Science, Lesson Exemplar, MATATAG Curriculum.

RESEARCH TITLE: **Institutional Performance in Professional Licensure Examinations of Aldersgate College Inc.: Basis for R.I.S.E. (Review Initiatives Scaling Up to Excellence)**

CODE: IIRC- C2-P015 ONLINE

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Abstract

Professional licensure examination performance is widely recognized as a key indicator of institutional effectiveness and graduate competence. This study analyzed the licensure examination performance of Aldersgate College, Inc., from 2022 to 2025 across eight academic programs. A quantitative descriptive-comparative research design was employed using publicly available data from the Professional Regulation Commission. Institutional passing rates were compared with national passing rates, and the Mann–Whitney U test was used to determine statistical differences. Findings revealed varied performance patterns. Criminology and Elementary Education programs consistently exceeded national benchmarks, while Accountancy and Engineering programs showed persistent performance gaps. Across all programs, first-time takers significantly outperformed repeaters. Statistical results indicated that most program differences were not significant; however, Accountancy and Civil Engineering demonstrated significant disparities compared to national performance. The study proposes the R.I.S.E. framework (Review Initiatives Scaling Up to Excellence) as a strategic institutional intervention model emphasizing curriculum alignment, structured remediation, and data-driven quality assurance mechanisms. Findings contribute to the discourse on performance-based accountability in higher education institutions and offer actionable strategies for sustainable improvement in licensure outcomes.

Keywords: licensure examination, institutional performance, quality assurance, higher education, remediation strategy

RESEARCH TITLE: **Comparing AI and L2 Doctoral Student's Academic Writing: An Empirical Study of the Introduction Section Abstract**

CODE: IIRC- C2-P016 ONSITE

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Abstract

With the popularization of AI writing tools in academia, their application value and quality limitations have attracted wide attention. Currently, AI writing tools are widely used in academic writing, but the impacts of different AI tools and literature input methods on AI-generated introductions remain unclear, and systematic empirical comparisons between AI and manual writing are lacking, failing to support academic writing teaching. Therefore, this study takes doctoral students of different majors as subjects and focuses on research article introduction writing, to explore the performance of various AI tools in three core dimensions, i.e. literature citation accuracy, research theme precision, and scientific rationality and analyze the different effects of AI tools and literature input methods. Results show that manually written introductions are significantly higher in quality than AI-generated ones, especially in theme precision and scientific rationality. Although AI performs well in literature review and research purpose presentation, it has obvious deficiencies in citation accuracy (e.g., format errors, content-theme mismatch) and some AI introductions have theme deviation and logical discontinuity. Different literature input methods significantly affect AI quality: gradual input of complete PDF literature yields higher citation accuracy and content completeness than inputting only basic literature information. Among AI tools, ChatGPT outperforms DeepL Write and Grammarly Academic in content richness and logical coherence, while Grammarly Academic is superior in language standardization. Additionally, AI can help sort out literature and build frameworks but cannot replace manual writing in academic thinking, theme control, and innovation.

Keywords: AI writing tools, Academic writing quality, Citation accuracy, Theme precision, Scientific rationality

RESEARCH TITLE: **A Mixed-Methods Investigation of Constructivist Instruction in College English–Chinese Translation: Insights from Time-Series and Microgenetic Analyses**

CODE: IIRC- C2-P017 ONSITE

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Abstract

Drawing on constructivist perspectives on learning, this study examines how instructional reform shapes the development of English–Chinese translation competence and learner autonomy in a college English context. A mixed-methods design was adopted, combining a single-group time-series approach with microgenetic analysis during a 16-week instructional intervention with 40 first-year non-English-major students. Quantitative data from repeated translation assessments and pre-/post-intervention questionnaires were analyzed alongside qualitative data from classroom observations and critical incident reports. The findings indicate that participants demonstrated steady gains in translation performance over time, accompanied by more frequent and flexible use of translation strategies. In addition, learners showed increased capacity for self-regulated learning, particularly in goal setting, time management, and collaborative engagement. Qualitative analyses suggest that specific instructional practices such as structured peer collaboration and iterative feedback cycles—played a mediating role in learners' developing competence. The results also point to a reciprocal relationship between the articulation of learning goals and the appropriation of translation strategies. This study extends research on constructivist pedagogy in second language education by elucidating the processes through which instructional interventions support both skill development and learner autonomy. Pedagogical implications are discussed for the design of translation instruction and classroom-based intervention research in TESOL contexts.

RESEARCH TITLE: **Mapping Philosophical Trends in Philippine Biology Education Research (2018–2025) Through Bibliometric Analysis and Teacher Narratives**

CODE: IIRC- C2-P018 ONSITE

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Abstract

This study explored the philosophical orientations in Philippine biology education research from 2018 to 2025 and classroom practice. Using a convergent mixed-methods design, it combined a bibliometric analysis of 18 Scopus-indexed publications with interviews of ten secondary biology teachers across Panay Island. The bibliometric analysis identified dominant worldviews and methodological trends, while interviews examined teachers' beliefs, strategies, and classroom realities using deductive coding. Results showed that both research and practice are largely guided by Constructivist and Pragmatic orientations, emphasizing student-centered inquiry, reflective thinking, collaboration, and adaptable problem-solving. Post-Positivist and Transformative perspectives were less common; post-positivist approaches focused on structured assessments, and transformative practices addressing equity, social justice, and community engagement were rare in classrooms. Triangulation highlighted convergence in valuing active learning and practical engagement, and divergence in applying evidence-based and socially responsive strategies. These findings suggest that Filipino biology teachers foster inquiry and adaptability but face challenges in implementing underrepresented worldviews due to resource limitations, varied teacher beliefs, and institutional constraints. The study emphasizes the need for professional development, supportive curriculum design, and policy guidance to help teachers balance inquiry, evidence-based practices, and socially relevant instruction. By linking research trends with classroom realities, the study provides insights for enhancing pedagogical strategies and promoting meaningful, context-aware learning in Philippine biology education.

Keywords: Philosophy, Worldviews, Bibliometric Analysis, Scopus, Teacher Narratives

RESEARCH TITLE: **Institutional Evolution and Language Governance in Sino-French Cooperative Higher Education**

CODE: IIRC- C2-P019
ONSITE

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Abstract

Over the past four decades, Sino-French cooperative higher education has evolved into a distinctive and enduring model of transnational education. While existing scholarship has extensively studied in institutional structures, little attention has been paid to the evolution of language governance and its interplay with shifting institutional logics. To fill this gap, this study investigates the institutional evolution and discursive construction from the 1980s to the present, periodizing its development into five stages: early exploration (1980s–1996), institutional expansion (1997–2003), quality enhancement (2003–2013), strategic upgrading (2014–2019), and mutual empowerment (2020–present). Adopting Corpus-based Discourse Analysis (CBDA) to bridge the gap between the meso and macro level, this study explores how the logic of language governance is constructed and reconstructed discursively across these stages. Among 72 Sino-French institutions and programs, Renmin University of China Sino-French Institute is selected as a representative case due to its pioneering role and sophisticated trilingual governance model for in-depth investigation with a focus on talent training programs and language policy documents. The results reveal that Sino-French cooperative higher education has developed from one-way introduction of resources to a two-way-innovation-oriented ecosystem. Meanwhile, language governance reflects that language has evolved from a simple teaching tool to a core strategic resource. By elucidating the co-evolution of institutional arrangements and language policies, this research clarifies the evolutionary logic of language governance and offers strategic insights for optimizing cross-cultural education quality in other international cooperative programs.

Keywords: Sino-French cooperative higher education, language governance, institutional evolution, Corpus-based Discourse Analysis, cross-cultural education quality

RESEARCH TITLE: **Mapping Evolutionary Stages and Exploring Institutional Logics: Integration Social Network Analysis and Critical Discourse Analysis in Sino-UK Cooperative Education**

CODE: IIRC- C2-P020
ONSITE

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Abstract

While Sino-UK transnational higher education has grown significantly over three decades, however, few studies have examined the link between macro-level evolutionary stages and micro-level institutional logics. Addressing this gap, this study adopted a two-layer analytical framework, namely, integrating Social Network Analysis (SNA) and Fairclough's Critical Discourse Analysis (CDA), to map this landscape from 1990 to 2025. First, SNA was employed to map the collaborative network of Sino-UK cooperative institutions and programs. Four distinct evolutionary stages were identified: exploratory (1990s-2003), expansion (2004-2015), quality enhancement (2016-2020), and transformation (2021-present). To understand the institutional logics of the mapped evolution at micro level, among nine typical cases, Queen Mary University of London Engineering School, Northwestern Polytechnical University (QMES) was selected as a representative case for in-depth investigation. Second, grounded in Fairclough's three-dimensional model, CDA was applied to QMES's talent cultivation schemes between 2016 to 2026 to trace the evolution of institutional logics, specifically academic logic. The analysis reveals that academic logic at QMES has progressed through three stages: transplantation, integration, and innovation. The results demonstrate that talent cultivation schemes serve as critical sites where national interests, market demands, and international standards are negotiated. This research offers a robust methodological lens for understanding the institutionalization of transnational higher education in a shifting global context.

Keywords: Sino-UK transnational higher education, social network analysis, critical discourse analysis, institutional logics, talent cultivation schemes

RESEARCH TITLE: **Virtue-Integrated Classroom Model for Addressing Ethical Challenges in Science Instruction among Pre-Service Science Teachers**

CODE: IIRC- C2-P021
ONSITE

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Abstract

This qualitative study developed a virtue-integrated classroom framework for addressing ethical challenges in science among pre-service science teachers, using Anatomy and Physiology instruction as the initial context. Drawing on focus group discussions with third-year pre-service science teachers enrolled in Anatomy and Physiology, the study explored their emotional responses, moral concerns, and pedagogical expectations. Thematic analysis revealed five recurring patterns: tension between emotion and morality, recognition of life and dignity, negotiation of authenticity and protection, promotion of ethical sensitivity, and integration of reflective practice. Interpreted through the lens of virtue ethics, these findings highlight the centrality of cultivating compassion, prudence, respect, and responsibility in science classrooms, rather than treating ethics as an optional add-on. Guided by these themes, the study synthesized the Adaptive and Reflective Virtue-Integrated Classroom Model. It was structured around three procedural stages: Vision, Action, and Navigation. Vision clarifies the virtues and ethical identity that the lesson seeks to form in learners. Action organizes classroom strategies such as designing learning activities, managing sensitive materials and discussions, and establishing supportive interaction norms so that students actively practice these virtues while engaging with scientific content. Navigation provides structured opportunities for debriefing and reflection to help students work through dilemmas and emotions and translate experiences into stable character commitments as future teachers. The model offers a practical, transferable framework for integrating virtue-centered ethical formation into science instruction, addressing the identified gap in structured virtue frameworks.

Keywords: classroom practices, science education, virtue-integrated instruction, pre-service teachers

RESEARCH TITLE: **Research on College English Cultural Teaching Strategies under the Concept of Achievement Orientation in the Era of Artificial Intelligence**

CODE: IIRC- C2-P022
ONSITE

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Abstract

In the wave of globalization, College English is no longer just about imparting language knowledge, but more about cultivating cultural and communicative abilities. The outcome-oriented educational philosophy emphasizes a student-centered approach, focusing on learning outcomes and continuous improvement, which aligns with the guidelines for education in the 2020 edition of the College English Teaching Guide. At the same time, the rise of AI has brought about revolutionary changes in language teaching. Guided by Outcome-oriented educational philosophy, this college's English teaching strategy that integrates AI technology can not only improve students' learning outcomes but also cultivate their cross-cultural communication skills, laying a solid foundation for future international exchange and cooperation. Therefore, we should actively explore and practice this new teaching model to promote innovation and development in college English teaching.

Keywords: Outcome-oriented education, college English reform, AI integration, cross-cultural communication, international exchange

RESEARCH TITLE: **Through a Regional Lens: Decoding the "Neighborly Gaze" and Cultural Narratives of Xi'an among Thai University Students**

CODE: IIRC- C2-S001 ONSITE

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Abstract

Through a regional lens, this research examined the construction of cultural narratives regarding Xi'an among Thai university students, exploring how proximity and shared heritage shape contemporary perceptions. This study first establishes a material baseline of the city image by analyzing and codifying 30 top-rated Xi'an attractions from TripAdvisor into five distinct landscape typologies: Ancient Historical and Cultural Heritage; Religious Architecture; Museums and Science/Education Exhibitions; Urban Parks and Cultural Blocks; and Rural Folk Customs and Modern Recreation. Building on this foundation, an in-depth interview protocol utilizing photo elicitation was developed to analyze narrative construction across three dimensions: Perception (fact-sharing of landscapes), Cognition (value resonance), and Emotion (affective connection). This framework investigates how specific urban typologies trigger empathic mechanisms in young Thai audiences, decoding what is termed the "Neighborly Gaze." Findings suggest that Thai students do not view Xi'an through a Western Orientalist lens, but rather through an "Asian internal gaze" characterized by cultural resonance and a "Familiar Foreign" hybridity. By bridging the gap between physical urban landscapes and psychological narrative construction, the study demonstrates how young audiences navigate the tension between Xi'an's Tang Dynasty legacy and its modern acceleration. Ultimately, this research provides a theoretical basis for understanding intra-Asian cultural exchange and offers strategic insights for city branding targeting the Global South, highlighting how regional actors actively negotiate identity within the evolving 21st-century Asian landscape.

Keywords: Xi'an cultural narratives, Thai university students, Neighborly Gaze, intra-Asian exchange, city branding

RESEARCH TITLE: **The Perceptions of Grade 7 Students and Mathematics Teachers of the Learning Resources of the MATATAG Mathematics Curriculum and its Impact on Student Engagement**

CODE: IIRC- C2-S002 ONLINE

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Abstract

The Philippines is undergoing curriculum reform with the implementation of the new MATATAG curriculum. New pedagogies, resources, and assessments in classrooms come with the new curriculum. This study investigated the relationship between students and teachers' perceptions of the learning resources of the MATATAG mathematics curriculum and its impact on student engagement. It aims to assess and evaluate the quality of learning resources and their impact on improving student engagement using first-hand experience from students and teachers. This study used a mixed-method approach using a Likert-scale questionnaire for correlation and open-ended questions for in-depth analysis. The results showed a significant, yet non-linear relationship between the students' and teachers' perceptions of the learning resources. Based on the findings, both participants perceived the learning resources of the MATATAG mathematics curriculum positively. Furthermore, the learning resources possessed qualities such as learner-centeredness, relevance to the real world, and alignment with competencies, which positively impacted student engagement. This study recommends school administrators and curriculum designers continue monitoring the learning resources, improve accessibility of learning resources, and provide adequate professional training for teachers regarding the use of learning resources in the classroom.

Keywords: MATATAG Curriculum, Mathematics Learning Resources, Mixed Method Study, Stakeholder Feedback, Student Engagement

RESEARCH TITLE: **Perception on the Use of Tagalog Language in Understanding English Medium of Instruction Subjects**

CODE: IIRC- C2-S003 ONLINE

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Abstract

Language plays a crucial role in students' understanding of academic content, particularly in classrooms where English is used as the medium of instruction. In multilingual environments, the use of learners' first language may help bridge comprehension gaps and support classroom participation. The purpose of this study was to examine the relationship between students' Tagalog language proficiency and their perceptions of using Tagalog to understand English-medium instruction (EMI) subjects. A review of related literature was conducted, focusing on studies that examined the impact of using local languages in English-medium classes. The study employed a quantitative-correlational research design involving 102 Grade 12 HUMSS students. Data were collected via a Likert-scale survey and analyzed to determine the levels of each variable and to identify any significant relationship between students' Tagalog proficiency and their perceptions of its use in EMI subjects. The findings revealed a very high level of Tagalog proficiency among the students and a very positive perception of the use of Tagalog in English-medium subjects. Furthermore, the results showed a strong positive relationship between the two variables. These findings indicate that incorporating Tagalog in EMI classes is beneficial, as it helps students express their ideas clearly and understand complex concepts more effectively. Therefore, the study recommends using Tagalog as a supplementary instructional tool to enhance students' comprehension of challenging topics in EMI subjects. Based on these findings, the researchers propose an intervention to support effective language use in the classroom.

Keywords: Tagalog Language Proficiency, Perception, English Medium of Instruction (EMI)

RESEARCH TITLE: **"Chinese + X" Programs in Thai Universities: A CLIL Perspective on Structures, Development, and Challenges**

CODE: IIRC- C2-S004 ONSITE

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Abstract

The "Belt and Road Initiative" has catalyzed a high demand for interdisciplinary "Chinese + X" talents to drive Sino-Thai economic cooperation. Despite their importance, existing literature remains largely confined to policy interpretation and general program descriptions, leaving a gap in systematic overviews of the "Chinese + X" model in Thai higher education. This qualitative-dominant, descriptive study explores the landscape of these programs—including geographical distribution, institution types, degree structures, and curricular frameworks—through the lens of Content and Language Integrated Learning (CLIL) and the Thai Qualifications Framework (TQF.2). Utilizing textual analysis, the research reviewed 153 higher education institutions listed by the Ministry of Higher Education, Science, Research, and Innovation (MHESI). The findings reveal: 1) Program Distribution: 23 "Chinese + X" programs were identified across 20 universities (representing 13.07% of the total sample), primarily categorized into "Chinese + Profession" and "Chinese + Major" models; 2) Curricular Structure: The 3(3-0-6) credit format emerged as the most effective structure for balancing linguistic proficiency with professional competency; 3) Institutional Variance: Significant variations in instructional hours across programs suggest that while Thai institutions are increasingly prioritizing dual-focus graduates, standardization remains a challenge. This study bridges a critical gap in regional educational research by providing a data-driven framework for optimizing "Chinese + X" curricula; its findings offer actionable insights for policymakers and educators to align interdisciplinary training with the shifting labor demands of the Sino-Thai economic corridor. The study concludes that the current organization of "Chinese + X" aligns with Outcome-Based Education (OBE) and satisfies TQF.2 requirements.

KeywordsChinese + X programs, Sino-Thai cooperation, Content and Language Integrated Learning, Thai Qualifications Framework, interdisciplinary talent cultivation

CLUSTER 3: HEALTH, WELL-BEING, AND QUALITY OF LIFE

RESEARCH TITLE: **Death Cheaters: A Study of Transhumanism and Chronic Pain in the English Literary Film "Me Before You"**

CODE: IIRC- C3-P001 ONLINE

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Abstract

This paper is a transhumanism study of the English literary film "Me Before You" (Moyes, 2016). By looking at the protagonist's physical and social reality, transhuman condition and situation, and his seemingly no purpose driven life, the study analyzes how Will, with the help of his carers, cheats death through high technology. One of the aims of transhumanism is to prolong the human lifespan; another is to enhance the quality of life for the human species. However, despite turning to the promise of transhumanism, the protagonist experiences the opposite of enhancement in many areas of his transhuman life. This study was delimited to identifying what human suffering is in certain aspects of a transhuman's life involving chronic pain and comprehending the reasons behind their disposition. The article may be helpful to specialists, carers, and loved ones whose mission is to understand the well-being of transhumans in chronic pain.

Keywords: transhumanism, advanced technology, enhancement, longevity, chronic pain

RESEARCH TITLE: **Resilience and Coping Mechanism Among Allied Health Learners In a Private Higher Education Institution in Cavite**

CODE: IIRC- C3-P002 ONLINE

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Abstract

This study aimed to determine the resilience and coping mechanism of the allied health learners from a selected private higher education institution in Cavite, Philippines during academic year 2024-2025 as a basis for action plan. The respondents were allied health learners classified according to course, year level, primary source of educational support, age, sex, civil status, family type, order of birth, religion, number of memberships in organizations (academic and socio) and average family monthly income (in Philippine Peso) from a selected private higher education institution in Cavite. The study used a descriptive-correlational design to analyze the relationship between the demographic profile, level of resilience, and level of utilization of coping mechanism among allied health learners. The findings of this study will contribute valuable insights for the development of an action plan that enhances the resilience among allied health learners. In the resilience of allied health learners evaluated across four dimensions such as Mindset/Self-Efficacy, Social Support, Faith/Spirituality, and Parental Expectations, students exhibit a strong sense of confidence in their abilities to overcome setbacks, indicating high resilience levels. Allied health learners experienced considerable stress during their education, which necessitates the use of effective coping mechanisms to foster resilience and prevent burnout. Their coping strategies fall into three main categories: Problem-Focused, Emotion-Focused, and Meaning-Focused coping. Overall, the findings emphasize that higher resilience levels are associated with more effective coping strategies. An action plan was created based on the study findings to promote and enhance resilience and coping mechanism of allied health learners.

Keywords: Resilience, Coping Mechanism, Allied Health Learners, Private Higher Education Institution, Cavite

RESEARCH TITLE: A Phenomenological Study on Family Reintegration Among Filipino Drug Dependents After Drug Rehabilitation in Cavite

CODE: IIRC- C3-P003 ONLINE

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Abstract

This study explored the lived experiences of former drug dependents in Cavite and the factors influencing their family reintegration. Using interpretative phenomenological analysis (IPA), researchers conducted semi-structured interviews with five male participants aged 30–60, all residents of the province. Each had completed rehabilitation requirements and experienced family reintegration for at least six months. Findings revealed eight themes: religious practices, discipline, commitment to change, internal battles, external pressures, rebuilding trust, restoring familial relationships, and personal growth. Reintegration was perceived as challenging yet fulfilling. Key difficulties included relapse prevention, rebuilding trust, repairing family ties, and exercising discernment in choosing peers. Conversely, acceptance, compassion, and understanding from family members provided self-fulfillment and motivation. The study concludes that recovery extends beyond medical intervention and abstinence. Family reconciliation plays a central role in sustaining change. Thus, rehabilitation programs should incorporate reintegration skills to strengthen familial bonds and support long-term recovery. Through participants' narratives, the research highlights the importance of a holistic support system, with the family as its core foundation.

Keywords: drug rehabilitation in Cavite, familial reconciliation, family reintegration, former male drug dependents

RESEARCH TITLE: World Health Organization Immunization Mandates Towards Developing A Community-Centric Policy Framework: The Cagayan Valley Experience

CODE: IIRC- C3-P004 ONSITE

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Abstract

This research analyzed the consistency and impact of the World Health Organization (WHO) immunization directives in the local context of the Cagayan Valley region of the Philippines. A mixed-methods case study framework was employed to determine immunization uptake, identify the barriers to vaccine access, and gauge the community's views on the implementation of the WHO mandate in three barangays representing remote rural, semi-urban, and indigenous areas. Quantitative data from 300 households and qualitative insights from interviews, focus group discussions, and field observations revealed substantial disparities in immunization outcomes. Fully immunized households ranged from 45% to 75%, with rural areas exhibiting significantly lower coverage. ANOVA results showed that age, education, and geographic location significantly influenced immunization adherence, barriers to access, and perceptions of mandate effectiveness. Geographical distance, financial limitations, cultural beliefs, misinformation, and logistical issues emerged as the primary barriers, with rural and low-income groups facing the most challenges. While many respondents viewed WHO mandates as effective, perceptions were less favorable in rural areas due to access constraints and limited contextualization of global guidelines. Lastly, the study proposes a community-centric immunization framework that would highlight the importance of community engagement, culturally tailored education, improved healthcare infrastructure, mobile clinic deployment, and local leader training. The study concludes that although the WHO mandates provide strong foundational guidance, their full effectiveness requires localized adaptation that addresses the socio-cultural, economic, and infrastructural realities of the Cagayan Valley. Strengthening community involvement and improving health system capacity are essential steps toward achieving equitable and sustained vaccine coverage in the region.

Keywords: Immunization coverage, WHO mandates, vaccine access, community-centric policy framework

RESEARCH TITLE: **Beyond the Screen: A Thematic Network and Pareto Analysis of Laboratory Skills, Employer Scaffolding, and Micro-Credentialing Pathways Among Pandemic-Era Graduates for Medical Technology Workforce**

CODE: IIRC- C3-P005 ONSITE

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Abstract

The COVID-19 pandemic necessitated an abrupt shift to remote instruction, fundamentally altering the training ground for Medical Technology graduates of batches 2021–2023. Denied essential onsite laboratory exposure, this "pandemic cohort" relied on virtual simulations to acquire psychomotor skills, raising critical concerns regarding their clinical competence upon workforce entry. This study employed a mixed-methods graduate tracer design to inventory the perceived learning outcomes of 19 graduates who completed their degrees without traditional face-to-face laboratory classes. To provide a rigorous assessment of workforce readiness, data were subjected to advanced analytics beyond standard descriptive measures. Integrative Convergence-Divergence Analysis was utilized to triangulate self-efficacy scores with employer support narratives, while Competency Calibration was performed to detect potential "Dunning-Kruger" effects. Furthermore, a Pareto Analysis was conducted to isolate the critical "Vital Few" skill deficits, and a Thematic Network Analysis was employed to model the mechanisms of graduate adaptation. The results revealed a significant competency dissonance. While graduates rated their Technical Competence highest (Mean=3.77), the Convergence-Divergence analysis exposed a sharp contradiction: this same domain required the most intensive employer remediation. Pareto Analysis confirmed that nearly 80% of employer support was concentrated in just 20% of skill areas—specifically, Phlebotomy and Instrumentation—indicating a state of "unconscious incompetence" in which virtual success masked psychomotor deficits. Conversely, Critical Thinking skills (Mean=3.58) showed strong calibration between self-perception and workplace performance. The Thematic Network Analysis culminated in the proposal of a "Compensatory Scaffolding Model," illustrating how graduates relied on "resource scavenging" and employer-led "mentorship bootcamps" to survive the transition to clinical practice. Consequently, this study advocates for the institutionalization of micro-credentials strictly targeting the "Vital Few" psychomotor gaps identified (Phlebotomy and Routine Instrumentation). By validating these specific skills post-graduation, micro-credentials offer a standardized solution to verify the clinical proficiency of the pandemic-era workforce.

Keywords: Pandemic Graduates, Perceived Learning Outcomes, Mixed-Methods, Graduate Tracer Study, Online Laboratory Classes, Employer Support, Medical Technology, Psychomotor Skills, Competency Assessment, Educational Resilience.

RESEARCH TITLE: **Circles of Joy: A Qualitative Exploration of Hula Hooping's Role in Promoting Happiness and Social Bonds in Elderly Women**

CODE: IIRC- C3-P006 ONLINE

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Abstract

Active aging includes social, emotional and physical wellness as one grows older. The Philippines is ensuring that older women's healthy aging involves minimizing their social isolation, access to recreational activities and improving their physical well-being as they age, but many older women are facing barriers to healthy aging. Combining recreational movement-based activities with social and emotional components like hula hooping can potentially provide older adults with benefits that range from improved physical health to improved quality of life through social interactions with themselves or others. The purpose of this qualitative study was to explore the contribution of participating in hula hooping to senior female citizens' happiness, emotional wellness and social connectedness. In this study, semi-structured interviews, focus group discussions and participant observation were used to collect data from a total of fifteen (15) senior female citizens aged 60 and older from a community wellness program located in Calabarzon Region in the Philippines, using a qualitative research design. Thematic analysis identified patterns of occurrence, as well as lived experiences. Four themes were identified: (1) rediscovery of playfulness and joy, (2) enhanced physical vitality and self-esteem, (3) increased social connectedness and sense of belonging, and (4) the ability to overcome age stereotypes. Participants reported increased mobility, emotional wellness and enhanced social engagement. Hula hooping was thought of as not only exercise, but also to be a means of connection and purpose through a shared experience such as movement and being physically active in a group setting. Hula hooping can foster an environment that supports active aging among senior women by enhancing social connection and happiness. These findings indicate the significance of incorporating not just physical exercise into fitness programs for older individuals into fitness programs but also adding benefits that are associated with social and emotional well-being when developing fitness programs for older individuals.

Keywords: Senior Citizens, social bonds, playfulness and joy

RESEARCH TITLE: **Mental Health Assessment of Faculty Members Using the Depression Anxiety Stress Scales-42 (DASS-42): A Descriptive-Comparative Study at Aldersgate College, Inc.**

CODE: IIRC- C3-P007 ONLINE

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Abstract

Mental health challenges among faculty in higher education represent a significant occupational health concern worldwide. Objective: This study assessed the depression, anxiety, and stress levels of RDE and High School Department at Aldersgate College, Inc., using the DASS-42. Methods: A descriptive-comparative design was employed with 31 full-time faculty members (67.7% female). Descriptive statistics characterized DASS-42 subscale scores; Independent Samples t-tests compared mental health scores across sex and department groups following Shapiro-Wilk normality testing. Although Stress yielded the highest raw mean score (M = 16.71, SD = 8.05), Anxiety emerged as the most clinically urgent concern when interpreted against DASS-42 severity band thresholds, with 61.3% of faculty scoring at Severe or Extremely Severe levels (M = 16.23, SD = 7.46). Depression was elevated for 48.4% of respondents at Moderate-to-Extremely Severe levels (M = 13.74, SD = 7.59). Stress, despite its higher mean, fell only in the Mild-to-Moderate severity range, with 12.9% in the Severe or above category. No statistically significant differences were found by sex or department (all $p > .05$). Conclusion: Mental health burden among faculty is substantial and institution-wide, cutting across sex and departmental lines. Immediate interventions, including counseling services, workload management, and a systemic mental health program, are urgently recommended.

Keywords: *DASS-42; faculty mental health; depression; anxiety; stress; higher education; Philippines*

RESEARCH TITLE: **Tracing the English Translation Trajectory of Traditional Chinese Medicine Classics from a Digital Humanities Perspective**

CODE: IIRC- C3-P008 ONLINE

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Abstract

This study investigates the historical evolution of English translations regarding Traditional Chinese Medicine classics from a digital humanities perspective. Focusing on seven fundamental classical texts including Huangdi Neijing (黄帝内经), Bencao Gangmu(本草纲目), Qianjin Yaofang (千金要方), Shanghan Lun (伤寒论), Jingui Yaolüe (金匮要略), Nan Jing (难经), and Shennong Bencao Jing (神农本草经). We systematically compiled and visualized publication locations for 102 English editions released between the years 1736 and 2025. By leveraging spatial distribution analysis, we categorized the overall translation trajectory into four distinct development periods. Furthermore, text mining techniques were applied to representative translations from each period, to facilitate an in-depth examination of their keywords, discourse characteristics, and cultural transcreation tendencies. Findings indicate that the historical progression moved sequentially through a Western analytical phase, an academic exploration phase, a systematic outward translation phase, and a cultural connotation dissemination phase. Such chronological evolution profoundly shaped both the spatial distribution patterns and keyword signatures of the translated texts. Furthermore, it elucidates the bridging function of translation mediums and the dynamic trajectory of cultural identity amid interactions between Chinese and Western civilizations. Ultimately, this research expands the application boundaries of digital humanities methodologies within medical translation studies. By offering an interdisciplinary standpoint, it deepens scholarly comprehension regarding transcultural translation phenomena, discourse evolution, and cultural dissemination pathways. The insights generated provide fresh theoretical perspectives and practical references for future textual scholarship and the global promotion of traditional medicinal heritage.

Keywords: Digital humanities, Traditional Chinese Medicine classics, translation trajectory, cultural transcreation, transcultural discourse evolution

RESEARCH TITLE: The Impact of Healthy Lifestyle Practices on Quality of Life

CODE: IIRC-C3-P009
ONSITE

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Abstract

The purpose of this study was to analyze the relationship between a healthy lifestyle and an improvement in overall quality of life, using documentary analysis of existing study data as the primary method of data collection. Documentary/Literature Review Methodology utilizes a systematic approach to compiling, interpreting, and synthesizing existing scholarly literature on Health Lifestyles and their correlation with Intervention effects/outcomes. The findings revealed that trends in the overall evaluation of items, including physical activity, nutrition, sleep quality, stress management, social support, and preventive healthcare practices, contribute to holistic wellness. Overall, the research demonstrates that individuals who practice healthy lifestyle behaviors improve their physical health, reduce their risk of chronic diseases, enhance their psychological health, build stronger social connections, and experience a much better quality of life.

Keywords: Lifestyle Practices, Quality of Life, Trends, Physical Activity, Social Connections

RESEARCH TITLE: The Awareness of Nurses Towards Health Beliefs and Practices of Religious Minorities in Metro Manila

CODE: IIRC- C3-P010
ONSITE

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Abstract

The aim of the study was to explore how nurses responded to their clients' cultural needs. From a transcultural perspective, healthcare providers must deliver culturally sensitive and appropriate care. However, for a variety of reasons, there is growing concern that the cultural healthcare needs of minority ethnic groups are not met adequately. This study was done to outline nurses' activity in transcultural care. Empirical data were obtained from a sample of registered nurses (n = 100) who were invited to complete questionnaires pertaining to cultural care. Based on the data analysis, the quantitative findings are presented as tables, categories, and themes. The findings suggest that most respondents felt that patients' cultural needs should be given consideration. Cultural aspects of care seem to be a feature of the overall nursing picture within a multicultural context of health care. Many participants claimed they responded to patients' cultural needs. Some felt that patients' cultural needs are adequately met; such needs are perceived as religious practices, diets, communication, dying, prayer, and culture. Furthermore, a significant number of respondents suggested that they would like further education in meeting the cultural needs of their patients. This study offers insights into transcultural healthcare practice and, in light of the findings, identifies strategies to improve these practices in nursing and nurse education.

Keywords: *Transcultural, multicultural, cultural needs*

RESEARCH TITLE: **Assessing Patient Satisfaction in Obstetrics and Gynecology: A Comprehensive Evaluation of Services and Outcomes.**

CODE: IIRC- C3-P011 ONLINE

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Abstract

The obstetrics and gynecology experience is a deeply personal journey for women, influenced by both clinical expertise and emotional support. Patient satisfaction serves as a vital indicator of healthcare quality, highlighting the necessity for effective communication and respectful treatment within patient-centered care models. This study evaluates patient satisfaction at King's College Hospital in Dubai, UAE, a prominent facility with specialized maternity units, to identify key determinants of the patient experience and enhance service delivery. Utilizing a mixed-methods research design, data were collected from 100 female patients, primarily aged 31 to 40, using a structured questionnaire based on a modified RAND Patient Satisfaction Questionnaire (PSQ-18). The evaluation assessed dimensions including appointment scheduling, provider communication, and medical service quality across various services like antenatal and postnatal care. Results revealed a high level of overall satisfaction, reflected in an overall mean score of 4.51 out of 5. The highest satisfaction was recorded in the quality of medical services (M = 4.81), where participants expressed a strong willingness to return and recommend the clinic. While patients strongly agreed that providers were respectful and professional, correlation analysis showed a significant positive relationship between monthly income and satisfaction ($r = 0.321$, $p = 0.001$). No significant relationship was found between age and satisfaction levels. The study concludes that while the facility excels in patient-centered care, strategies must be implemented to ensure satisfaction across all socioeconomic groups. Recommendations include enhancing financial transparency, implementing real-time feedback tools, and leveraging digital platforms to maintain service excellence and patient loyalty.

Keywords: Customer Satisfaction, Gynecology, Obstetrics, Service Delivery

RESEARCH TITLE: **Exploring Fire Incidents: A Spatio-Temporal and Classification Tree Analyses**

CODE: IIRC- C3-S001 ONLINE

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Abstract

Fire is a serious threat to lives and property. This study analyzes the spatial, temporal distributions, and predictors of fire type in Urdaneta City, Pangasinan, from 2015 to 2025. A total of 542 fire incidents were obtained from the Bureau of Fire Protection, Urdaneta City Fire Station in the study. Open-flame-related fire causes are the most frequent cause/origin of fire, and Nancayasan has the highest reported fire incidents. Temporal analysis, using Seasonal-Trend Decomposition using LOESS (STL Decomposition), reveals a downward trend, seasonal fluctuations, a COVID-19-related decline, and a subsequent surge to the new normal. Spatial autocorrelation analysis, employing Global Moran's I and Getis-Ord Gi*, detects clustering patterns. Electrical-related fire causes show a significant clustering through three weights: rook contiguity, queen contiguity, and inverse distance weight. Significant hot spots emerged in Mabanogbog, San Vicente, Bayaoas, Poblacion, Dilan Paurido, and Santo Domingo, while cold spots appear in Dr. Pedro T. Orata and Palina West. Predictors using a classification tree reveal that barangay and month exert the most significant influence on fire incidents, while time demonstrates a little to significant impact. Classification and Regression Tree (CRT) performed best in identifying predictors of fire type. Findings emphasize improved fire prevention strategies, education and awareness campaigns, resource allocation, and strengthened urban planning. The study recommends focusing on a specific city for future spatial analysis and incorporating weather and climate variables to better explain temporal patterns.

Keywords: *Fire, STL Decomposition, Global Moran's I, Getis-Ord Gi*, Predictors*

RESEARCH TITLE: Spatial Analysis Of Reported Cases Of Illegal Drugs in Urdaneta City

CODE: IIRC- C3-S002 ONLINE

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Abstract

Illegal drug involvement remains a serious public safety and social concern in urban communities, necessitating location-specific and evidence-based intervention. This study examines the spatial distribution and clustering patterns of reported cases of illegal drugs in Urdaneta City, Pangasinan, from 2015 to 2025. Descriptive analysis was used to assess the demographic profile of reported cases, including age, sex, suspect status, place of incident, and type of offense. Spatial analysis techniques, including choropleth mapping, Global Moran's I, and Getis-Ord Gi* Statistics, were applied using the Geographic Information System (GIS) to identify spatial patterns and high-risk areas. Results show that reported cases predominantly involve males within the economically productive age group, with most suspects classified as detained. Spatial distribution analysis reveals an uneven concentration of cases across barangays, with Poblacion, Nancayasan, and San Vicente consistently exhibiting higher case counts. Global Moran's I indicates statistically significant positive spatial autocorrelation in most years, suggesting clustered rather than random distributions. Local spatial analysis using Getis-Ord Gi* identifies significant hot spots in central and highly accessible barangays, while cold spots are observed in peripheral barangays. The findings emphasize the need for geographically targeted law enforcement strategies, strengthened community-based interventions, and data-driven policy formulation. Recommendations may include barangay-level or sub-barangay spatial analysis, as well as socio-economic and environmental factors, to provide a deeper understanding of the spatial dynamics of illegal drug-related activities.

Keyword: *Illegal Drugs, Spatial Analysis, Global Moran's I, Getis-Ord Gi**

CLUSTER 4: BUSINESS, GOVERNANCE, ECONOMIC ADVANCEMENT, AVIATION, QUALITY ASSURANCE, AND LEADERSHIP

RESEARCH TITLE: Strengthening Safety Awareness for Line Maintenance Personnel: A Research - Based Approach to Improving Workplace Safety Protocols

CODE: IIRC-C4-P001 ONLINE

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Abstract

In line maintenance, safety awareness is critical to ensuring staff safety. This study examined the urgent need for increased safety standards in this profession, focusing on the unique issues workers encounter in high-risk workplaces. Using the documentary analysis, recent improvements in safety training and workplace practices have underscored the importance of not only following established norms but also instilling a safety culture among all personnel. Based on various studies and literature, increasing awareness might reduce accidents and injuries, benefiting both workers and organizations. The combination of effective communication and continual education plays a vital role in improving safety. By prioritizing these characteristics, businesses can foster an environment in which line maintenance personnel feel empowered to express issues and make improvements. This proactive strategy encourages not only adherence to safety procedures but also personal investment in the safety culture as a whole.

Keywords: *Safety Awareness, Safety Protocols, Safety Culture, Line Maintenance Personnel, Aviation*

RESEARCH TITLE: **Quality Assurance in Student Development Programs: A Qualitative Document Analysis of CHED Standards and Accreditation Evidence in Higher Education Institutions**

CODE: IIRC-C4-P002 ONLINE

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Abstract

Higher education requires quality assurance to ensure that student development programs meet national requirements and respond to changing social and labor market needs. The Philippine Commission on Higher Education (CHED) provides a comprehensive framework for creating, implementing, and assessing quality assurance procedures. This study uses qualitative document analysis to explore how CHED standards and accreditation criteria affect higher education student development programs. We examined CHED policies, accreditation reports, and institutional guidelines to identify themes, patterns, and institutional reactions related to quality assurance and student development. The document analysis revealed that effective quality assurance promotes responsibility and ongoing improvement, improving student outcomes. The report notes that document-based analysis has limitations, including limited stakeholder perspectives. This research illuminates how CHED requirements and accrediting evidence affect student development programs and provides policymakers and institutions with insights to improve the quality of Philippine higher education and graduate preparation.

Keywords: *Quality Assurance, Student Development, CHED, Evidence-Based, Accreditation*

RESEARCH TITLE: **Perspectives of Women Aviation Education Educators on Gender Disparity in the National Aviation Academy of the Philippines (formerly Philippine State College of Aeronautics (PhilSCA)**

CODE: IIRC-C4-P003 ONLINE

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Abstract

The aviation industry has long been regarded as a male-dominated field, with women facing various barriers to entering and advancing within the profession. In the Philippines, the National Aviation Academy of the Philippines (NAAP), formerly the Philippine State College of Aeronautics (PhilSCA), stands as a prominent institution for aviation education. This study examines women's perspectives on gender disparity in college aviation education, aiming to understand the challenges they face and the strategies to overcome them. The study employed a quantitative research method, including a structured survey with women educators. Results indicate generally positive perceptions of gender representation, with low levels of reported discrimination or bias. While participants noted improvements in inclusivity, concerns remain about underrepresentation in leadership and the presence of subtle gender biases. Respondents strongly supported institutional strategies such as policy reform, mentorship programs, access to professional development, and gender equality training. The findings offer practical recommendations for enhancing gender-inclusive policies and support systems. This study contributes to ongoing efforts to advance inclusive practices in male-dominated academic fields such as aviation education.

Keywords: *Aviation Education, Gender Disparity, Gender Equality, Women Educators*

RESEARCH TITLE: **Development of a Strategic Development Plan Based on the Management Practices and Challenges of Filipino School Heads in Thailand**

CODE: IIRC-C4-P004 ONSITE

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Abstract

This study examined the management practices and leadership challenges of Filipino school heads in Thailand as a basis for developing a strategic development plan. Employing a quantitative descriptive-correlational research design, the study involved 43 Filipino school heads and 154 Filipino teachers selected through purposive and proportionate sampling. Data were gathered using a validated researcher-made questionnaire and analyzed using descriptive and inferential statistical techniques. Results indicated that the school heads possessed diverse demographic and professional profiles, with most belonging to middle-aged groups and holding varied academic qualifications. Management practices in instructional leadership, human resource management, financial management, stakeholder engagement, and school culture were perceived as highly implemented and highly effective. However, teachers consistently rated these practices lower than school heads, revealing perceptual gaps in leadership effectiveness and communication. Challenges related to cultural adaptation, human resource management, curriculum implementation, and external relations were assessed as moderately serious. Significant relationships were found between selected profile variables—particularly age, position, and educational attainment—and both the level of implementation and effectiveness of management practices. Significant perceptual differences between school heads and teachers further underscored the need for improved collaboration and transparency. Based on these findings, a strategic development plan was proposed to strengthen leadership capacity and address contextual challenges in international school environments.

Keywords: *Management Practices of School Heads, Challenges of Filipino School Heads, Strategic Development Plan*

RESEARCH TITLE: **The Discursive Construction of Legitimation in U.S. Technology Strategy toward China**

CODE: IIRC-C4-P005 ONLINE

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Abstract

As a pivotal hub connecting the intelligence community, industry, and the legislature, the U.S.-China Economic and Security Review Commission (USCC) serves as a key mechanism for shaping the strategic consensus on U.S. technology policy toward China. Analyzing the cognitive construction mechanisms of China-related technology issues in its Annual Reports from a discursive perspective is significant for uncovering the legitimization logic underpinning the U.S. technology containment strategy against China. Drawing on Proximization Theory, this study employs a combined Corpus Linguistics and Critical Cognitive Discourse Analysis (CCDA) approach to conduct macro-semantic domain scanning and micro-lexico-grammatical construal of six technology-related sub-corpora. The findings reveal that the Reports employ spatial proximization strategies, including reconstructing defense boundaries, generalizing threat entities, highlighting threatening behaviors, and presupposing threat consequences, to construct an "objective reality" in which China's technological threat exists and is continuously encroaching upon the United States. Through the combined use of retrospective, structural, prospective, and dynamic temporal proximization strategies, the Reports construct a sense of urgency regarding China's technological threat, squeezing U.S. technological status and national security from both the past and the future. Supplemented by axiological proximization strategies, these discursive practices establish the rationale for containment policies as both urgent and morally justified. Synergistically, these strategies generate three differentiated narratives, that is, competition, threat, and risk, across different technological domains. These narratives aim to establish specific foundations of legitimacy for strategic measures such as exclusionary institutional balancing, critical technology blockades, and supply chain "de-risking", respectively. Notably, this logic of stratified containment has been sustained and deepened in the "Trump 2.0" era. This study provides theoretical insights for China to develop proactive and precise external discourse strategies in the technology sector.

Keywords: *Generative AI, academic integrity, proximization strategies, technology containment, discursive legitimization*

RESEARCH TITLE: **Bridging Competence and Performance: Analyzing the Influence of Leadership Competencies of Middle-Level Managers on Higher Education Functions for Policy Development**

CODE: IIRC-C4-P006 ONSITE

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Abstract

This study, examined the influence of leadership competencies on the performance of middle-level managers at Pangasinan State University, with the aim of developing a comprehensive institutional policy to enhance managerial effectiveness. Anchored in the Investors in People (IiP) framework, the study adopted a mixed-methods approach that combined quantitative, qualitative, and developmental research designs. The quantitative component employed a descriptive-survey to assess the level of influence of twelve leadership competencies—including strategic thinking and vision, effective communication, team leadership, change management, financial acumen, human resource management, problem-solving, collaboration and networking, ethical leadership, innovation and creativity, project management, and a student-centered approach—on six core university functions: administration, academics, research, extension, quality assurance, and internationalization. Qualitative data were gathered through key informant interviews to explore the challenges middle-level managers face in performing their roles. Developmental research informed the development of an institutional policy to enhance leadership competencies. Findings revealed that competencies such as strategic thinking, effective communication, ethical leadership, collaboration, and student-centered practices are highly influential across all functions, while gaps persist in strategic planning, mentoring, innovation, and change management. Challenges included overlapping responsibilities, resource constraints, inadequate leadership training, and a hierarchical organizational culture, which hindered optimal performance. Based on these results, a competency-driven institutional policy was developed, emphasizing structured leadership programs, mentoring and coaching systems, function-specific capacity building, evidence-based performance evaluation, and sustainable succession planning. The study concludes that strengthening leadership competencies of middle-level managers is crucial for aligning operational performance with institutional goals, enhancing innovation and quality, and fostering a high-performing workforce. Recommendations include institutionalizing leadership development initiatives, improving resource allocation, promoting continuous learning, and implementing monitoring and evaluation mechanisms to ensure sustainable managerial effectiveness and support the university's strategic objectives.

Keywords: *Leadership Competencies, Middle-level manager, Performance of University Functions*

RESEARCH TITLE: **Biomimetic Design Approach for Enhanced Aerodynamic Performance in Aircraft Airfoils Through SOLIDWORKS Simulations**

CODE: IIRC-C4-P007 ONLINE

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Abstract

The Indo-Pacific sailfish, known for its streamlined body and exceptional speed, offers a unique template for improving aerodynamic performance. By mimicking the sailfish's morphology, the study aims to enhance lift generation and minimize drag, advancing beyond traditional methods. SolidWorks Simulation software plays a pivotal role in this research, enabling detailed analysis and optimization of the sailfish-inspired airfoil design. This approach ensures superior aerodynamic performance, setting a new benchmark in aircraft wing efficiency. This research not only seeks to improve technical performance but also addresses environmental sustainability. By comparing marine biomimicry with traditional bird-inspired designs, it contributes to the broader discourse in aeronautical engineering, emphasizing the potential of biomimetic innovations to create eco-friendly, fuel-efficient aircraft. The researchers aim to revolutionize aircraft wing design by integrating nature's most efficient mechanisms, ultimately leading to greener aviation solutions. Traditional wing design integrates aerodynamics, materials science, and control systems, with elements such as airfoil form and wingspan that optimize lift and reduce drag. Advanced techniques such as Computational Fluid Dynamics (CFD) and Computer-Aided Design (CAD) are essential for modeling and enhancing wing performance. Significantly, the findings reveal that at angles of attack ranging from 0 to 10 degrees, the Indo-Pacific sailfish-inspired airfoil exhibits higher velocity compared to the Cessna 172's NACA 2412-IL airfoil. This higher velocity indicates lower pressure over the sailfish-inspired airfoil, resulting in greater lift production. The superior lift characteristics of the sailfish design demonstrate its potential to outperform traditional airfoil designs, such as the NACA 2412-IL, particularly during critical phases of flight, such as takeoff and climb. Moreover, the implications of these findings extend to the cruise phase, the longest phase of flight. During a cruise, maintaining efficient lift-to-drag ratios is essential for fuel economy and overall flight efficiency. Enhanced aerodynamic performance in the cruise phase reduces fuel consumption and emissions, contributing significantly to the sustainability of air travel.

Keywords: *Aerodynamics, Airfoil Design, Biomimicry, Computational Fluid Dynamics, SolidWorks Simulation*

RESEARCH TITLE: **Strategic Implementation of Virtual Reality to Improve Innovations in the Teaching and Learning Processes Associated with Rotorcraft Maintenance**

CODE: IIRC-C4-P008
ONLINE

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Abstract

The development of a Virtual Reality (VR) based training program for Rotorcraft Maintenance Training is a significant innovation in aviation education. After conducting a body of research, this report discusses ways to leverage VR technology to enhance rotorcraft maintenance training and learning. The research utilized a document analysis, which provides evidence that VR technology creates engaging, interactive training environments for users. The effectiveness of VR in improving people's engagement with and retention of material has been demonstrated. Using VR technology, users of this type of program have reported greater ability to perform complex tasks in a safe virtual environment. The results of this study indicate that VR implementation offers many benefits for training rotorcraft maintenance personnel. The adoption of VR as part of a training curriculum will improve the efficiency and effectiveness of programs training technicians. Additionally, it will allow technicians to become job-ready sooner than with traditional training methods. Further, it has the potential to foster a culture of continuous learning and adaptability within the maintenance community. In addition to learning outcomes, the analysis highlights operational advantages relevant to rotorcraft maintenance programs, including reduced dependence on aircraft availability, minimized tool and component wear from repeated hands-on practice, and the ability to standardize instruction across cohorts and training locations. VR simulation is especially well-suited to rotorcraft maintenance tasks that are difficult to schedule, hazardous, or costly to replicate (e.g., fault diagnosis, confined-area procedures, and rare emergency or abnormal conditions). The results of this study indicate that integrating VR into rotorcraft maintenance curricula offers substantial benefits for technician development by improving training efficiency and effectiveness, accelerating progression toward job readiness, and reinforcing safety and compliance behaviors. Finally, the report argues that VR adoption can help cultivate a culture of continuous learning and adaptability within the maintenance community by enabling ongoing proficiency training, just-in-time refreshers, and rapid updates when platforms, manuals, or procedures change.

Keywords: *Virtual reality, Innovations, Curriculum, Aviation Education, Rotorcraft Maintenance*

RESEARCH TITLE: **Influence Of Entrepreneurial Competencies on Business Performance And The Moderating Role of Resource Provisions**

CODE: IIRC-C4-P009
ONLINE

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Abstract

Entrepreneurial competencies, such as skills, knowledge, and personal attributes that enable entrepreneurs to effectively manage and grow their business, play a critical role in determining success, taking into consideration the various Resource Provisions as utilized by Entrepreneurs. Thus, this research aims to determine the influence of Entrepreneurial Competencies on Business Performance and the moderating role of Resource Provisions. The research utilized at least 227 participants selected through purposive sampling. A standardized survey questionnaire is used, and multiple linear regression is used to test influence and moderation. The results revealed that Entrepreneurial Resources significantly influence the Business Performance of the selected Retail Businesses. On the other hand, Resource Provisions positively moderate the influence of Entrepreneurial Resources on Business Performance.

Keywords: *Entrepreneurial Competencies, Resource Provisions, Business Performance, Efficiency*

RESEARCH TITLE: **TESDA Skills Certification and Career Prospects: The Impact on Employability for BTLEd and BTVTEd Graduates**

CODE: IIRC-C4-P010 ONSITE

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Abstract

This study investigates the impact of TESDA's National Certificate II (NC II) on the employability and career prospects of BTLEd and BTVTEd graduates from Pangasinan State University–Lingayen Campus. Using descriptive and developmental research designs, data were collected from 220 graduates (2017–2023) through questionnaires and interviews to analyze certification attainment, employment outcomes, and employer feedback. Results indicate that TESDA-certified graduates are valued for their technical and pedagogical skills, yet employers emphasize the need for stronger soft skills, digital literacy, and industry-specific projects. Findings highlight the importance of continuous curriculum improvement, expanded practical training, and strengthened academic-industry collaboration to ensure global competitiveness. The study concludes that integrating emerging technologies, enhancing soft skills, and fostering institutional partnerships are essential strategies for sustaining workforce relevance and adaptability.

Keywords: TESDA certification, employability, BTLEd and BTVTEd graduates, curriculum development, and industry-academia collaboration.

RESEARCH TITLE: **Leaders Shaping Leadership: Knowledge, Professional Values and Competency as Prognosticators of Career Growth and Development Among Nurses**

CODE: IIRC-C4-P011 ONSITE

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Abstract

The study aimed to determine the prognosticators of career growth and development among nurses in tertiary hospitals in Region III, Philippines. The study captured 223 nurse-leaders from nineteen (19) participating hospitals as participants via census sampling. It used an adopted survey questionnaire as its tool and underwent validation before distribution. Using SEM-PLS through WARPLS, the data were analyzed and presented. SPSS v. 21 was used to compute demographics. Results showed a significant effect on knowledge related to career growth and development (path = .0.217, $p < .05$, $f2 = .167$). Second, professional values affect the career growth and development of nurses (path=.0.564, $p<.05$, $f^2=.450$). Lastly, competency is not associated with career growth and development among nurses (path = .0.037, $p < .05$, $f2 = .028$). It was found that all three prognosticators of career growth and development (Knowledge, Professional values, and Competency) among nurses have strong, significant relationships with each other.

Keywords: *Career growth and development, progrnosticators, SEM-PLS, descriptive-correlational, nursing*

RESEARCH TITLE: **Strategic Migration Governance: A Comparative Analysis of High-Skilled Visas in Korea and Thailand**

CODE: IIRC-C4-P012
ONLINE

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Abstract

This study examines the growing role of high-skilled foreign talent recruitment as a strategic instrument of national competitiveness under the structural pressures of low fertility, population aging, and industrial upgrading. It comparatively analyzes the high-skilled visa regimes of South Korea and Thailand, focusing on institutional design and settlement pathways. Specifically, it explores Korea's Top-Tier Visa and Thailand's SMART and Long-Term Resident (LTR) visas, examining their policy contexts and the mechanisms through which they structure selection criteria, residence stability, and settlement linkages.

Using a three-dimensional analytical framework—selection criteria, residence stability, and settlement pathways—the study identifies both convergence and divergence. Both countries redefine high-skilled migrants as strategic assets for industrial transformation and innovation. However, Korea adopts a "settlement-oriented integration model," characterized by strong elite selection and explicit linkage to permanent residency. In contrast, Thailand has developed a "conditional long-term residence and circulation model," expanding residence stability while limiting automatic transition to permanent residency. Notably, the LTR visa allows residence of up to ten years but remains institutionally distinct from formal permanent residency.

These findings suggest that strategic migration policy varies according to demographic structure, industrial development stage, and societal receptiveness. By conceptualizing high-skilled visas as institutional structures connected to settlement pathways, this study provides a comparative legal perspective on strategic migration governance in aging societies.

Key words: High-Skilled Migration; Strategic Migration Policy; Talent Visa Regimes; Settlement Pathways; Korea–Thailand Comparative Study

RESEARCH TITLE: **Evaluation of Acumatica Enterprise Resource Planning (ERP) System in Business Automation of Pioneer Adhesives Inc.**

CODE: IIRC-C4-S001
ONLINE

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Abstract

This study evaluated the business automation enhancements introduced by the Acumatica ERP System for Pioneer Adhesives Inc., focusing on how the transition from manual accounting practices to a centralized digital platform influences financial reporting effectiveness, consistency, and control. Specifically, the research examined employees' perceptions of the system's usefulness and ease of use, as well as its impact on workflow effectiveness, data security, and report reliability. A mixed-method explanatory sequential design was employed. The quantitative phase utilized weighted median, Likert scales, and Spearman's Rank-Order Correlation Coefficient to measure ERP adoption and perceived improvements in performance. The qualitative phase, through thematic analysis of employee experiences, provided contextual insights into system usage, challenges, and operational outcomes. Findings revealed that employees generally view the Acumatica ERP system as useful, accessible, and reliable, though correlations between ERP adoption and performance improvements were low. The study recommends strengthening ERP training programs, improving process alignment, and enhancing system integration to maximize organizational impact.

Keywords: Acumatica ERP, business automation, financial reporting, workflow effectiveness, organizational performance

RESEARCH TITLE: **Service Quality and Commuter Satisfaction on Two Wheels: A Comparative Analysis of Motorcycle Ride-Hailing Service As A Mode of Transportation in the Province of Cavite**

CODE: IIRC-C4-S002 ONLINE

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Abstract

This study evaluated and compared the perceived service quality and commuter satisfaction between two leading motorcycle-based TNVS platforms, TNVS A and TNVS B, among commuters in the Province of Cavite. Using the SERVQUAL model as the basis, the research assessed service quality through five core dimensions: Tangibles, Reliability, Responsiveness, Assurance, and Empathy. In addition, Price was incorporated as an extended dimension to reflect its influence on commuter perceptions and satisfaction. The study employed a quantitative comparative research design, utilizing purposive and quota sampling to select 151 respondents from Cavite who have utilized both platforms. Data were collected via an online survey questionnaire and analyzed using frequency distribution, percentage, weighted mean, and the Wilcoxon Signed-Rank Test to evaluate service levels and identify significant differences between the two providers.

Findings of the study revealed that both TNVS A and TNVS B achieved high marks across all service quality dimensions, with mean scores consistently falling within the "Agree" range. While both platforms were highly regarded for their safety and the professionalism of their riders (Assurance and Empathy), TNVS B consistently achieved slightly higher weighted mean scores across all assessed dimensions. Specifically, the results indicated that TNVS B was perceived as superior in its tangible assets, operational reliability, and promptness in responding to customer needs. Moreover, TNVS B received higher ratings in the price dimension, with respondents highlighting its affordability and transparent fare structure as key advantages for their daily budgeting. Statistical analysis using the Wilcoxon Signed-Rank Test further confirmed these differences. Significant differences ($p < .05$) were found in the dimensions of Tangibles, Reliability, Responsiveness, and Price, as well as in the level of overall commuter satisfaction ($p = .026$). In contrast, the differences in the dimensions of Assurance and Empathy were not significant, suggesting that commuters view both platforms as equally safe and trustworthy. Ultimately, the study concluded that while both motorcycle ride-hailing services provide high-quality transportation, TNVS B currently offers a measurably higher level of overall satisfaction among commuters in Cavite, primarily driven by its excellence in functional and economic service attributes.

Keywords: *Service Quality, Commuter Satisfaction, Motorcycle Ride-hailing Service, SERVQUAL model.*

RESEARCH TITLE: **Green Finance Education and Its Influence on Generation Z's Savings Behavior: A Study on Selected Cities in Cavite**

CODE: IIRC-C4-S003 ONLINE

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Abstract

This quantitative study investigated the relationship between green finance education and the savings behavior of Generation Z individuals in Bacoor, Imus, and Dasmariñas, Cavite. Using survey questionnaires administered to 300 employed respondents aged 18–27, the researchers applied descriptive and correlational analyses, including Spearman's rank correlation and Chi-Square tests. Findings revealed moderate-to-high awareness of green finance concepts, positive savings behavior influenced by financial literacy and self-control, and significant relationships between green finance education and savings practices. Demographic variables also shaped differences in both awareness and behavior. The study recommends strengthening green finance education through policy support, curriculum integration, accessible digital products, and financial literacy initiatives to promote sustainable financial decision-making.

Keywords: *Green Finance Education, Savings Behavior, Environmental Sustainability, Digital Natives, Financial Literacy Initiatives*

RESEARCH TITLE: **Business In The 21st Century: Customer Satisfaction On Self-Service Kiosks Adoption in Selected Fast-Food Chains In Dasmariñas City, Province of Cavite**

CODE: IIRC-C4-S004 ONLINE

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Abstract

The focus of this study was to determine the level of customer satisfaction with the adoption of self-service kiosks in selected fast-food chains in the City of Dasmariñas, Province of Cavite. This was accomplished by examining participants' levels of adoption and customer satisfaction, based on their demographic profiles and usage levels of the self-service kiosks. A validated survey questionnaire was used as the primary instrument for data collection, employing a quantitative, descriptive correlational research design. The study analyzed the influence of self-service kiosks on enhancing customer satisfaction and operational efficiency of fast-food chains, based on customers' perceptions. A total of 200 responses were collected through a combination of printed questionnaires and via Google Forms. The findings revealed a high level of customer adoption of self-service kiosks, with respondents expressing positive perceptions of their use, particularly for convenience, efficiency, and technological readiness. Customer satisfaction levels were also high across all service quality dimensions, including tangibility, responsiveness, reliability, ease of use, and perceived value. Statistical analysis showed no significant differences in kiosk adoption or customer satisfaction across demographic and dining profiles. However, a significant difference was observed in kiosk usage frequency. Moreover, a significant, moderate positive relationship was found between the level of self-service kiosk adoption and customer satisfaction, indicating that increased adoption leads to higher customer satisfaction.

Keywords: *Self-service Kiosks, Fast-Food chains, Technological Readiness, Ease of Use, Tangibility, Perceived value.*

RESEARCH TITLE: **Evaluating The Role of Facility Design and Workplace Productivity in Selected Coffee Shops in Cities Of Imus And Bacoor, Province of Cavite, Philippines**

CODE: IIRC-C4-S005 ONLINE

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Abstract

This study determined the role of facility design and workplace productivity in selected coffee shops in Cities of Imus and Bacoor in Cavite Province, Philippines. The research explored on determining how the facility design of the workplace affects employee quality of work output, efficiency of service delivery, and workplace involvement. The study used a quantitative research design and gathered data from 200 employees of the selected coffee shops through a survey questionnaire. Statistical tools such as frequency and percentage, weighted mean, standard deviation and Spearman rank correlation were used to analyze employees' perceptions of facility design, their perceived workplace productivity, and the significant relationship between these variables.

Results showed that a significant positive relationship was observed between facility design and workplace productivity, indicating that improvements in the physical environment contribute to better employee performance and engagement. The findings suggest that the productivity increases in coffee shops are not attributable to a single design feature, but rather to the entire workplace environment quality in combination. The research emphasizes that supportive, organized, and collaborative facilities not only improve employee performance but also enhance efficiency and engagement. The recommendations presented are to encourage management to prioritize organized layouts, supportive environmental conditions and collaborative spaces to optimize employee performance, productivity and satisfaction in the coffee shop workplace.

Keywords: Facility design, workplace productivity, employee performance and efficiency.

FULL PAPER

Anti-Smoke Belching Detection System with Non-Contact Apprehension Using YOLOv8

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Abstract— Air pollution caused by vehicle emissions, particularly smoke belching, remains a serious environmental and public health issue in urban areas. This study developed an Anti-Smoke Belching Detection System using YOLOv8, Raspberry Pi, and camera-based monitoring to detect smoke-belching vehicles in real time. The system captures images, detects smoke emissions, recognizes license plates, records violations, and sends automated alerts. Results showed satisfactory detection, accuracy and positive stakeholder feedback.

I. Introduction

Air pollution remains a major environmental and public health problem, particularly in urban areas where vehicle emissions significantly contribute to deteriorating air quality. One of the most visible forms of vehicle pollution is smoke belching, which refers to the excessive release of black smoke from vehicles due to incomplete combustion or poor engine maintenance. These emissions release harmful pollutants such as particulate matter (PM), nitrogen oxides (NOx), carbon monoxide (CO), and volatile organic compounds (VOCs), which can lead to respiratory diseases, cardiovascular problems, and environmental degradation.

In the Philippines, laws such as the Philippine Clean Air Act of 1999 (RA 8749) were enacted to regulate vehicle emissions. However, enforcement of smoke belching regulations remains inconsistent in some areas, including Calamba City. Although emission testing is required for vehicle registration, enforcement often depends on third party certification and lacks real-time monitoring or immediate apprehension mechanisms.

With the advancement of artificial intelligence and computer vision technologies, automated monitoring systems can provide more efficient solutions for environmental regulation. Technologies such as deep learning, computer vision, edge computing, and Internet of Things (IoT) enable real-time detection and analysis of environmental data. These technologies can be applied to detect smoke emissions from vehicles and identify violators without requiring direct interaction between law enforcement officers and drivers.

This study proposes the development of an Anti-Smoke Belching Detection System with Non-Contact Apprehension that utilizes YOLOv8 object detection, a Raspberry Pi processing unit, and camera-based monitoring to detect smoke-belching vehicles in real time. The system aims to improve the efficiency of emission monitoring and enforcement in Calamba City by automatically detecting smoke emissions, identifying license plates, recording violations, and sending alerts to authorities.

Specifically, the study aims to:
Design and implement a real-time smoke detection system in terms of detection accuracy, processing speed, and system responsiveness.

Integrate a non-contact apprehension mechanism including license plate recognition, violation logging, and alert notification.
Evaluate the performance of the machine learning algorithm using metrics such as mean average precision (mAP), precision, and recall.
Assess the system's quality based on ISO 25010 standards including usability, reliability, functionality, and efficiency.

By developing this automated detection system, the study seeks to contribute to environmental monitoring, improve enforcement of emission regulations, and promote cleaner air in urban environments.

II. Materials and Methodology

This study employed a quantitative research design to evaluate the performance and effectiveness of the proposed smoke belching detection system. The research involved system development, experimental testing, and stakeholder evaluation to determine the system's functionality and reliability.

Research Locale

The study was conducted in Barangay Halang, Calamba City, a location selected due to its high vehicular traffic. The detection system was installed near STI College Calamba where vehicles frequently accelerate, increasing the likelihood of visible smoke emissions.

III. Results and Discussion

The experimental testing of the Anti-Smoke Belching Detection System demonstrated the capability of the YOLOv8 model to detect smoke emissions from vehicles in real-time roadside monitoring conditions.

The system successfully captured vehicle images and analyzed them using trained machine learning models. Detection results showed that the system was able to identify smoke emissions and record violations while simultaneously performing license plate recognition and generating automated alerts.

Performance evaluation using object detection metrics indicated that the model achieved a satisfactory level of detection accuracy. The calculated precision and recall scores showed that the system was able to correctly identify most smoke-belching vehicles while minimizing false detections.

Survey results from stakeholders also indicated positive feedback regarding the system's functionality and efficiency. Based on the Likert scale analysis, respondents generally agreed that the system was:

- easy to use
- reliable in detecting violations
- efficient in generating alerts
- useful for improving emission monitoring

These findings suggest that the system has potential for practical implementation in roadside monitoring applications.

IV. Conclusion

The study successfully developed an Anti-Smoke Belching Detection System with Non-Contact Apprehension using YOLOv8, Raspberry Pi, and camera-based monitoring. The system was able to detect smoke emissions from vehicles in real time, recognize license plates, record violations, and generate automated alerts. Performance evaluation showed satisfactory detection accuracy based on precision and recall metrics. Stakeholder feedback also indicated that the system is usable, reliable, and efficient for roadside emission monitoring. Overall, the system demonstrates strong potential to support environmental monitoring and improve the enforcement of vehicle emission regulations.regulations and contribute to cleaner urban air.

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"Challenges Encountered By Pre-Service Teachers Of A State University In Practice Teaching: Inputs For Program Enhancement"

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Abstract— Learning is an ongoing journey where teachers play a crucial role. Before entering the classroom, education students experience a "pre-service" phase filled with challenges. This study focuses on identifying these challenges faced by pre-service teachers at a state university during their practice teaching. It investigates: 1) pre-service teachers' assessment of challenges in demonstration teaching across physical and online settings; 2) the practice teaching performance of secondary pre-service teachers; 3) the relationship between perceived challenges and teaching performance; and 4) proposed enhancement programs based on findings.

Utilizing a quantitative descriptive research design, participants included pre-service teachers from Cavite State University-Imus Campus deployed at three Junior High Schools in Imus City. Data collected via a self-made questionnaire revealed significant difficulties in both teaching settings. The study underscores the need for remedial action on students' critical-thinking skills, recommending additional activities to enhance pre-service teachers' skills and a crafted Action Plan for implementation.

INTRODUCTION

Education is essential for societal change, with teacher preparation being a top priority for national development. Continuous training equips educators with necessary skills to adapt to evolving pedagogies and students' needs in the 21st century. As "digital immigrants," teachers must adapt to the technological environment that "digital natives" navigate. Quality education hinges on comprehensive teacher training and student teaching—a blend of practical and theoretical learning crucial for skill development. Challenges faced by pre-service teachers, such as resource shortages and inadequate training, vary by specialization and impact educational effectiveness. The Philippines necessitates quality teacher education to align with ASEAN integration and global competitiveness.

Despite constitutional mandates for improved educational standards, poor outcomes persist largely due to insufficient educator training. Effective teacher education programs are vital for preparing teachers to handle modern classroom complexities. Field experiences significantly influence pre-service teacher training, affecting perceived value and quality of learning. Accreditation agencies assess institutions, compelling them to refine programs based on recommendations. Current trends like technology integration pose challenges in aligning curricula with national and global standards, while varied learning styles complicate practical application for aspiring teachers. To bridge theoretical and practical gaps, exposure to non-traditional learning environments is essential.

The study aims to identify challenges faced by pre-service teachers at specific high schools during demonstration teaching to develop an enhancement program. Health protocols were followed during research amidst the COVID-19 pandemic, ensuring participant safety. The findings will guide school management in improving practice teaching experiences, addressing identified challenges to enhance student performance.

METHODOLOGY

The study employed a quantitative-descriptive design using a survey approach for data collection. Descriptive research aims to systematically describe a population, situation, or phenomenon, addressing questions about what, where, when, and how (McCombes, cited in Biney and Cheng, 2021). Participants included pre-service teachers from Cavite State University-Imus Campus, deployed in three Junior High Schools in Imus City: General Emilio Aguinaldo National High School, Imus National High School, and General Tomas Mascardo National High School. A purposive sampling plan was employed, involving all pre-service teachers from the university.

A self-made survey questionnaire was crafted for this study, divided into three sections with statements regarding the difficulties faced by practice teachers. A 4-point Likert scale was utilized to measure responses, with the instrument subject to a reliability test via Cronbach's alpha to ensure bias-free results. Data collection began with securing approval from Cavite State University-Imus Campus's administrator and the Department of Teacher Education chairperson through a formal request. Subsequently, participants were briefed on the study's nature, purpose, and confidentiality via Zoom, ensuring their consent was obtained. These meetings, lasting up to an hour, occurred over 1 to 2 days in early March 2023. An Informed Consent Form was provided, followed by a Google Forms survey allowing two weeks for completion. Personal information was safeguarded, accessible only with consent, and would be destroyed six months post-research. Results were analyzed with statistical tools to enhance the practice teaching program from late March to early April 2023.

Data analysis involves examining data to derive information for decision-making or research enhancement. In this study, mean scores assessed the perceived challenges faced by pre-service teachers during their practice teaching and evaluated their demonstration teaching performance. Pearson r analyzed the correlation between perceived challenges (in both physical and online environments) and teaching performance.

Ethical considerations emphasized adherence to data privacy laws, with the researcher ensuring honesty and integrity throughout the process. Participants' privacy was upheld as per the 2012 Data Privacy Act, with personal information accessed only, when necessary, by the researcher and adviser. Informed consent was obtained prior to accessing sensitive material. Health protocols were followed during the research, utilizing Google Forms for survey distribution with no direct participant interactions.

RECOMMENDATIONS

Per the foregoing results and conclusions, the following are submitted:

1. State universities should enhance personality and communication skills of pre-service teachers through additional activities.
2. Provide mentorship and guidance with regular feedback during practice teaching.
3. Set realistic expectations and prepare pre-service teachers for challenges.
4. Implement an Action Plan addressing critical-thinking skills as a priority.
5. Periodically review the Action Plan for necessary enhancements or modifications to ensure effectiveness and relevance.

ANALYSIS

In the Challenges of Pre-Service Teachers in Practice Teaching in terms of Physical Setting, the result showed the grand mean of 3.33 indicates a strong agreement regarding challenges faced by pre-service teachers during practice teaching. Six significant difficulties arise, notably from limited resources and preparation time, leading to nervousness and inability to manage classrooms effectively. Additional concerns include lack of self-confidence and issues with coordinating teachers, although these are less critical. While other challenges exist, studies affirm that pre-service teachers are generally effective in the teaching and learning process.

In terms of online setting, Pre-service teachers face significant challenges during online practice teaching, including a lack of essential equipment, unstable internet connections, and unexpected technical issues. Additional difficulties include insufficient mental preparedness, topic misconceptions, and lack of motivation. Other lesser challenges also exist. The COVID-19 pandemic necessitated a swift transition to new teaching models, highlighting the need for adaptations in teaching environments. Educational opportunities, especially synchronous online interactions, are crucial for maintaining cognitive and social presence in learning.

On the other hand, the study shows that majority, at 77, of the pre-service teachers, got a grade of 85-88 for their practice teaching performance. Based on the Pearson r value of -.054, it is not significant (at 0.542 > 0.05 significance level). There is no significant relationship between the challenges faced by practice teachers and their demonstration teaching performance. Thus, the null hypothesis is accepted. The action plan includes the activities and learning development program that develops and improve pre-service teacher's critical thinking skills. The same focuses on areas of concern that were rated as "Strongly-Agree," which thus requires immediate remedies/actions.

DISCUSSION

The pre-service teachers encountered six challenges during their practice teaching in a physical setting that they found very difficult. Those challenges are: 1) limitations in terms of instructional material and time; 3) lapses due to lack of preparation; 5) nervousness; 6) lack of fluency; 8) Mistakes in Learning Plan; and 9) Irrelevant assessments and activities to the learning objectives. In terms of online teaching, service teachers have encountered problems which were either issues on technology and connectivity, or issues on motivation and mental health. During the practice teaching, majority of the practice teachers earned a grade between 85 and 88. Even though pre-service teachers encountered various challenges during their practice teaching, they were still able to get good grades.

Although pre-service teachers have faced many challenges during their practice teaching, the study shows that there is no significant relationship between the perceived level of challenges encountered by them and their practice teaching performance. The researcher has proposed some activities and learning development programs to enhance the pre-service teacher's personality and communication skills. An analysis of the foregoing manifests critical-thinking skills concerns of pre-service students-teachers.

Experiences And Challenges of Sports Coordinators and Coaches in Managing Sports Programs of Cavite State University (CvSU)

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Abstract— Sports coordinators and coaches play vital roles in planning, organizing, and evaluating sports initiatives at Cavite State University (CvSU), yet their experiences and challenges remain underexplored. This research investigates the experiences of sports coordinators and e-sports coaches at CvSU, aiming to enhance program delivery and inform effective policies for sports development. Using a qualitative phenomenological approach, the study involved 13 participants who shared their firsthand experiences in managing sports programs.

Findings reveal that e-sports coaching at CvSU presents both opportunities and challenges, as coaches face demands related to infrastructure, scheduling, and institutional constraints. While students recognize the educational benefits of e-sports—such as cognitive development and leadership skills—insufficient institutional support hampers program sustainability.

The analysis highlights the need for proper governance, adequate resources, academic integration, and sustainable development plans. Furthermore, it emphasizes the need for a digital management system dedicated to e-sports activities, distinct from traditional athletic management.

INTRODUCTION

The rapid growth of electronic sports (e-sports) has transformed competitive gaming into a structured, organized, and globally recognized activity. As universities increasingly acknowledge the role of technology-driven engagement in student development, many State Universities and Colleges (SUCs) in the Philippines are starting to integrate e-sports as co-curricular activities. These initiatives seek to promote teamwork, strategic thinking, discipline, and digital literacy competencies that align with 21st-century learning. Despite this progress, the management of e-sports programs within SUCs remains inconsistent and underdeveloped. Unlike traditional sports, e-sports require specialized knowledge, technical resources, and administrative support. Coaches who serve as mentors, organizers, strategists, and facilitators play a central role in ensuring the success and sustainability of these programs. Their experiences, however, vary significantly depending on institutional policies, funding availability, infrastructure, and administrative recognition.

Sports programs play a vital role in promoting student development, enhancing campus engagement, and supporting holistic education in higher education institutions. At Cavite State University (CvSU), sports are used to teach students discipline, cooperation, and leadership, and to create school spirit. On the other hand, the management of sports activities is still influenced by differences among campuses in institutional capacity, resource availability, facility condition, and administrative structures. Sports coordinators and coaches, as front-line implementers, have crucial duties in the areas of planning, organizing, and evaluating sports initiatives, yet their experiences, challenges, and the support they get from CvSU are still not well explored. It is necessary to address this gap to improve program delivery and decision-making, and to inform institutions about policies that will be fair and effective in sports development throughout the University. Thus, the present research aims to investigate the experiences and difficulties of sports coordinators and coaches in managing sports programs across the different colleges and campuses of Cavite State University.

Statement of the Problem

This study investigates the lived experiences of coaches managing e-sports as co-curricular activities in Cavite State University. Specifically, it seeks to answer the following research questions:

1. How do coaches describe their lived experiences in managing e-sports as co-curricular activities in Cavite State University?
2. What challenges and opportunities do they encounter in the organization, implementation, and sustainability of e-sports programs?
3. How do their experiences influence their perceptions of the educational value and institutional support for e-sports in higher education?
4. How can the insights gained from these experiences serve as a basis for developing an enhanced e-sports program management framework?

Objectives of the Study

This study aimed to assess the lived experiences of coaches managing e-sports as co-curricular activities in Cavite State University. Specifically, it aims to:

1. describe their lived experiences in managing e-sports as co-curricular activities in Cavite State University;
2. determine the challenges and opportunities they encounter in the organization, implementation, and sustainability of the e-sports program.
3. assess how their experiences influence their perceptions of the educational value and institutional support for e-sports in higher education; and
4. determine how their experiences serve as a basis for developing an enhanced e-sports program management framework.

Significance of the Study

This research is significant to the following groups:

Coaches. Provides a deeper understanding of shared experiences, enabling them to refine coaching approaches, improve team management, and advocate for better program support.

Students (E-sports Athletes). Benefits student-athletes by highlighting areas that can improve training, performance, and overall learning experiences.

University Administrators and SUC Leaders. Offers evidence-based insights that can guide policy formulation, resource allocation, and program development.

CHED and Local Government Units. Provides foundational data to support standardized guidelines and formal recognition of e-sports as an educational and developmental activity.

Future Researchers. Serves as a reference for future studies on e-sports management, coaching practices, and co-curricular program implementation.

Scope and limitation of the Study

This study is limited to e-sports coaches currently serving in Cavite State University. It focuses on their lived experiences in organizing, implementing, and sustaining e-sports programs as co-curricular activities. The research uses qualitative inquiry and does not include quantitative performance metrics, student satisfaction surveys, or institutional audits.

Theoretical Foundations

Experiential Learning Theory Experiential learning theory is a cycle learning theory introduced by American educational theorist David Kolb in 1971 and was inspired by earlier works of Kurt Lewin, Jean Piaget and John Dewey. As it was developed within humanist paradigm, experiential learning offers a holistic perspective on learning and is orientated mostly on adult learning. Name of this theory was intended to should emphasize the importance of experience in the learning process (Kolb, 2016). Coaches generate knowledge through lived experiences, reflections, and continuous adaptation. This theory justifies exploring their narratives as a foundation for framework creation. The Experiential Learning Theory (ELT), accredited to David A. Kolb, is a four-stage, holistic learning process that places emphasis on the role of experience in development. ELT is "the process whereby knowledge is created through the transformation of experience (Miller, 2020).

Systems Theory (Von Bertalanffy, 1968) An e-sports program functions as a system with interconnected parts (students, coaches, technology, administration). Weakness in one area impacts the entire system.

The E-sport Ecosystem. The esports ecosystem is a complex, rapidly evolving network of stakeholders including gaming companies, players, online communities, and governing bodies, characterized by ongoing commercialization and professionalization. In understanding this ecosystem, Yuri Seo et al. (2013) emphasize the collaborative nature of the ecosystem, noting that stakeholders collectively enrich the experiential value. Holden et al., (2016) highlights emerging challenges like doping and match-fixing, indicating the ecosystem's growing complexity. The esports ecosystem provides rich experiential learning opportunities that extend far beyond traditional gameplay, encompassing collaborative skill development, professional role exploration, and cognitive growth.

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Quality Assurance in Student Development Programs: A Qualitative Document Analysis of CHED Standards and Accreditation Evidence in Higher Education Institutions

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Abstract— Higher education requires quality assurance to ensure that student development programs meet national requirements and respond to changing social and labor market needs. The Philippine Commission on Higher Education (CHED) provides a comprehensive framework for creating, implementing, and assessing quality assurance procedures. This study uses qualitative document analysis to explore how CHED standards and accreditation criteria affect higher education student development programs. We examined CHED policies, accreditation reports, and institutional guidelines to identify themes, patterns, and institutional reactions related to quality assurance and student development. The document analysis revealed that effective quality assurance promotes responsibility and ongoing improvement, improving student outcomes. The report notes that document-based analysis has limitations, including limited stakeholder perspectives. This research illuminates how CHED requirements and accrediting evidence affect student development programs and provides policymakers and institutions with insights to improve the quality of Philippine higher education and graduate preparation.

Keywords: Quality Assurance, Student Development, CHED, Evidence-Based, Accreditation

INTRODUCTION

Quality assurance is essential in higher education to ensure institutions satisfy quality requirements. The Philippine Commission on Higher Education (CHED) guides these quality assurance activities. CHED standards enable universities and colleges to provide students with relevant, comprehensive, and developmental education. This focus on quality assurance reflects a growing awareness of the need for structured student development programs that teach graduates workforce skills. Holistic learning requires student development programs. These programs improve academic skills, personal growth, and social responsibility. They emphasize teamwork, leadership, and critical thinking to prepare students for real-world situations. Improving the implementation and meeting of institutional and student needs of these development initiatives requires strong quality assurance procedures as education systems grow.

Higher education institutions can evaluate and improve their education using CHED standards. These criteria govern the design and implementation of student development programs to meet institutional and student goals. This study evaluates quality assurance processes against CHED standards to identify strengths, shortcomings, and areas for growth in student development (Shahanga et al., 2024).

The literature on higher education quality assurance shows that comprehending CHED standards and student development programs is vital. This link influences Philippine educational initiatives and best practices. The literature evaluation will illuminate frameworks and identify gaps that must be filled to improve student development programs.

LITERATURE REVIEW

A growing body of studies on higher education quality assurance emphasizes accreditation's role in student development initiatives. Previous research has shown that accrediting processes set educational norms and affect student outcomes. Teaching, curriculum, and student involvement improve in rigorously accredited institutions. In 2022, researchers found that certified programs were more likely to integrate feedback mechanisms linking academic offerings to labor market demands, thereby improving students' employability.

Quality assurance measures affect student results differently across academic disciplines. Research indicates that accreditation standards for experiential learning enhance some professions, especially those in the health sciences. These guidelines help schools create curricula that combine academic knowledge with real-world applications, better preparing students for their future positions (Yamazaki & Miyazato, 2020).

The relationship between accreditation and student progress is complex, as these studies show. Understanding this relationship is crucial for future educational quality strategies. This literature review prepares for the next section, which will explain how CHED requirements and accreditation evidence affect higher education student development programs.

METHODS

n this study, a qualitative document analysis approach was utilized to explore how CHED standards and accreditation evidence impact student development programs in higher education institutions. This method allows for an in-depth examination of documents to identify themes and patterns that reflect the interplay between quality assurance and educational outcomes. The first step involved carefully selecting documents relevant to CHED standards and accreditation processes. Criteria for document selection included relevance to student development, the source's credibility, and the publication date to ensure the analysis was grounded in current practices. Once the documents were selected, the data collection process commenced.

A systematic review of the selected materials was conducted, including accreditation reports, institutional guidelines, and policy documents. Researchers applied coding techniques to categorize the information and identify recurring themes related to how quality assurance measures translate into student development support. This included examining evidence on how institutions implement feedback mechanisms and align their programs with labor market needs, as highlighted in previous research.
This analysis not only sheds light on the direct implications of CHED standards but also examines how institutions react to and implement these guidelines in their programs. The findings from this qualitative document analysis will provide a foundation for understanding the relationships between accreditation, quality assurance, and student outcomes. In the next section, the results of this analysis will be presented, highlighting notable trends and patterns that emerged from the data and their implications for enhancing educational quality in the Philippine higher education context.

RESULTS

The analysis of CHED standards and accreditation evidence revealed several key findings that illuminate the relationship between quality assurance processes and student development programs. One prominent theme identified is the alignment between CHED standards and institutions' curriculum design. Many colleges and universities are increasingly adopting curricula that not only meet CHED criteria but also incorporate industry feedback. This approach helps ensure that academic programs equip students with skills relevant to the job market, enhancing their employability after graduation. Another theme emerging from the analysis is the emphasis on continuous improvement within institutions. Accreditation evidence suggests that colleges are not merely striving for compliance with CHED standards; they are actively engaging in self-assessment and institutional reflection. This commitment to ongoing enhancement leads to the development of innovative teaching practices and support services tailored to student needs. For instance, several institutions have implemented mentoring programs and career counseling services that align with CHED guidelines, demonstrating a proactive approach to student development. Additionally, the findings indicate a growing recognition among higher education institutions of the importance of student feedback. Many colleges are establishing feedback mechanisms to gather insights on student experiences and outcomes. This practice not only aligns with CHED's expectations but also fosters a culture of responsiveness and adaptability, which is crucial for improving educational quality.

These results highlight the dynamic nature of quality assurance in higher education and its direct impact on student development. As institutions continue to align their programs with CHED standards and accreditation requirements, the focus on improving student outcomes is likely to intensify. This shift underscores the need for ongoing dialogue about best practices and challenges in implementing quality assurance measures, which will be explored further in the next section. Here, we will discuss the implications of these findings and how they contribute to a broader understanding of quality assurance in the Philippine higher education landscape.

DISCUSSION

The interpretation of the results highlights critical connections between CHED standards, accreditation processes, and student development programs in higher education. This study reveals that adherence to these standards not only shapes curriculum design but also significantly influences teaching practices and student engagement. When institutions align their programs with CHED requirements, they are better positioned to address the evolving needs of the job market, as evidenced by incorporating industry feedback into academic offerings. This alignment reflects a conscious effort by educational leaders to enhance graduates' employability, thereby demonstrating the practical implications of quality assurance in higher education.

The implications for higher education extend beyond mere compliance with established standards. Institutions that actively engage in quality assurance processes foster educational environments that prioritize student development. This proactive stance encourages a culture of continuous improvement, where feedback mechanisms become integral to refining curricula and teaching methodologies. Such an approach not only enhances academic quality but also prepares students to thrive in a competitive workforce. As demonstrated in existing literature, the emphasis on accreditation has been linked to improved educational outcomes, suggesting that institutions that invest in quality assurance are more likely to produce capable graduates.

Comparing these findings with existing literature reveals a consensus on the importance of quality assurance in shaping educational experiences. Many scholars argue that effective accreditation processes enhance educational quality and student satisfaction. However, this study adds a nuanced perspective by illustrating how these processes directly impact the curriculum and teaching practices, creating a ripple effect throughout the institution (Hwang, 2021).

Finally, this discussion underscores the necessity for higher education institutions to embrace quality assurance not only as a regulatory requirement but also as a fundamental aspect of their mission. By doing so, they can nurture informed and skilled graduates who are equipped to engage with and contribute to society. This sets the stage for a concluding reflection on how quality assurance not only influences institutional practices but also shapes the future of higher education in a rapidly changing world.

CONCLUSION

The findings of this research highlight the significant role that quality assurance plays in shaping student development programs within higher education institutions in the Philippines. The analysis shows a clear alignment between CHED standards and the curriculum offerings of universities and colleges. Institutions that prioritize these standards demonstrate a commitment to continuously improving their educational practices. They not only meet regulatory requirements but also engage with industry feedback, making their programs more relevant to the job market. This connection enhances students' employability, as graduates are more likely to possess the skills and

knowledge that employers seek. Quality assurance is not just a formal requirement; it is a fundamental part of the educational mission. It encourages institutions to adopt practices that foster student engagement and innovative teaching methods. As schools strive to meet CHED standards, they become more responsive to students' needs and the labor market, ensuring that graduates can transition effectively into their careers. Looking ahead, it is important for higher education institutions to continue refining their quality assurance processes. Future directions may include embracing new technologies, enhancing partnerships with industry stakeholders, and seeking regular feedback from students and alumni. This will not only improve academic programs but also support a culture of continuous improvement.

The next steps should focus on practical recommendations that institutions can adopt to further enhance their quality assurance practices. By exploring these recommendations, higher education institutions can build on the foundations laid by CHED standards and accreditation evidence, leading to even more impactful student development programs. This ongoing commitment to quality assurance will ultimately benefit not just the institutions themselves but also broader society by producing graduates equipped to meet future challenges.

RECOMMENDATIONS

To improve quality assurance in student development programs, a set of recommendations can guide higher education institutions in aligning their practices with CHED standards. First, institutions should establish clear policies that prioritize continuous improvement in educational offerings. By integrating regular feedback from industry partners, universities can adapt their curricula to better meet labor market needs. This alignment not only enhances student employability but also strengthens the relationship between academia and the workforce.

Furthermore, practical applications for institutions include developing faculty training programs focused on innovative teaching methods and curricular design. Engaging educators in workshops on accreditation best practices can foster a culture of quality assurance. Institutions may also consider creating dedicated committees to oversee compliance with CHED standards and ensure that quality assurance processes are consistently implemented.

In addition to these recommendations, there is a pressing need for further research on the long-term impacts of quality assurance practices on student outcomes. Investigating how different institutions implement CHED standards and the resulting changes in student employability would provide valuabe data. This research could explore the effectiveness of various teaching strategies and the role of technology in enhancing learning experiences. By identifying successful models, other institutions may adopt similar approaches, leading to widespread improvements across the sector.

While these recommendations offer a pathway for enhancing quality assurance in higher education, it is important to recognize the limitations inherent in this study. Certain factors, such as the limited scope of document analysis, may not capture the full spectrum of challenges and successes institutions face in implementing quality assurance measures. Future research should address these limitations by incorporating diverse methodologies to provide a more comprehensive picture of the effectiveness of quality assurance in student development programs (Mishra, 2024).

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Asessment of Learners' Basic Science Process Skills As Input For A Supplementary Lesson Exemplar

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Abstract— This study assessed the Basic Science Process Skills (BSPS) of Grade 7 learners to serve as the empirical basis for developing a supplementary lesson exemplar. Utilizing a developmental research design and the Input–Process–Output (IPO) framework, the study focused on 30 Grade 7 students in the Science, Technology, and Engineering (STE) program at a public secondary school in the Philippines. Data were gathered through a 30-item diagnostic test measuring seven core competencies—observing, classifying, inferring, predicting, measuring, communicating, and interpreting data—alongside a Learner Difficulties Checklist and qualitative open-ended questions. Quantitative analysis through descriptive and inferential statistics, combined with thematic analysis of learner challenges, identified specific proficiency gaps and instructional needs. These findings informed the design of a contextualized and skill-specific supplementary lesson exemplar aligned with the K to 12 competencies and the MATATAG curriculum reforms. By bridging the gap between diagnostic assessment and targeted intervention, the study supports the goals of the DepEd Basic Education Development Plan 2030 and Sustainable Development Goal 4, providing evidence-based instructional materials to enhance scientific literacy and inquiry-based learning in the early years of secondary education.

Keywords: Basic Science Process Skills, Developmental Research, Grade 7 Science, Lesson Exemplar, MATATAG Curriculum.

INTRODUCTION

Scientific literacy has emerged as a key competency in the 21st-century educational landscape, with increasing emphasis on inquiry-based learning, problem-solving, and critical thinking (Bybee, 2021). Central to this vision is the development of Basic Science Process Skills (BSPS) the fundamental tools learners use to investigate, explore, and interpret scientific phenomena. These include observing, classifying, inferring, measuring, predicting, and communicating (Padilla, 2020). These skills are foundational for more advanced inquiry and form the core of science curricula worldwide. In the Philippines, the K to 12 Science Curriculum aims to nurture scientifically literate individuals equipped to make informed decisions and actively participate in nation-building. BSPS are explicitly embedded in science instruction from elementary through secondary education, promoting the early development of learners' cognitive and investigative abilities (Department of Education [DepEd], 2023).

The development of Basic Science Process Skills (BSPS) plays a vital role in nurturing students' scientific thinking, especially in the early years of secondary education. These skills—such as observing, classifying, inferring, predicting, and communicating—are foundational tools for scientific inquiry and essential for promoting scientific literacy. In a study conducted by Baylon (2020), it was revealed that junior high school students in the Philippines demonstrated only an "approaching proficiency" level in most BSPS domains. The descriptive research, which assessed students across multiple schools, highlighted consistent gaps in core skills like inferring and predicting. The findings emphasize the necessity of instructional interventions that specifically target the development of these competencies. Baylon recommended the integration of structured and engaging learning activities that could reinforce science process skills through regular classroom practices. This supports the relevance of developing supplementary lesson exemplars tailored to students' actual performance levels, thereby addressing specific skill deficiencies and fostering a deeper understanding of scientific processes. Important and attainable competences drafted from the k-12 competencies of 2016.

The acquisition of Basic Science Process Skills is central to inquiry-based science education. According to Ayas (2015), these skills serve as the backbone of students' scientific exploration, enabling them to engage actively in experimental tasks, ask relevant questions, and derive logical conclusions. The study emphasized that teaching BSPS such as observing, measuring, and inferring should be embedded in science instruction from the early stages of education to promote lifelong scientific thinking. Moreover, Ayas argued that mastery of these skills helps bridge the gap between theoretical knowledge and practical application, thus making science more meaningful and relevant to students. This highlights the need to assess students' proficiency levels in these skills to inform the design of more targeted and effective instructional materials.

Gonzales (2023) conducted a study focused on developing lesson exemplars to address the weak BSPS performance among Grade 7 students in the Philippines. The research found that students had particular difficulty with predicting outcomes and making inferences during science experiments. The intervention, which involved the use of context-based and learner-centered lesson exemplars, showed a significant improvement in students' post-test scores. Gonzales concluded that BSPS can be effectively enhanced through structured lessons that reflect the learners' everyday experiences and cognitive levels. This supports the use of assessment data as a foundation for developing localized and responsive teaching materials.

A study by Martin and Villanueva (2021) explored the relationship between students' BSPS and their overall academic performance in science. The results indicated a strong positive correlation, where students who demonstrated higher proficiency in BSPS also achieved higher grades in science subjects. The study emphasized the need for formative assessments to monitor the development of skills like measuring, communicating, and classifying, which are often overlooked in traditional science assessments. Their findings reinforce the idea that evaluating BSPS is not only essential for skills development but also for improving science achievement and curriculum alignment.

However, recent assessments reveal that many Filipino learners continue to struggle with mastering these basic skills. Studies have shown that students often exhibit gaps in process skills such as inferring and predicting, particularly in middle and junior high school levels (Santos & Regacho, 2023; Ocampo et al., 2024).

These gaps are attributed to limited teacher training on process-based pedagogy, lack of diagnostic tools for assessing BSPS, and an overemphasis on rote memorization (Ordoñez & Salcedo, 2022). This lack of structured assessment creates a ripple effect—teachers are unable to identify learner needs accurately, hindering the delivery of responsive instruction. Furthermore, while the MATATAG curriculum reforms advocate for localized, flexible, and skill-centered teaching, implementation on the ground remains inconsistent due to resource limitations and insufficient support materials (DepEd, 2023).

Recent literature underscores the critical role of BSPS in fostering student engagement and improving academic outcomes. For instance, Alonzo and Gotwals (2022) found that scaffolding BSPS enhances both conceptual understanding and retention. Similarly, Reyes and Tumamao (2023) concluded that integrating BSPS within performance-based tasks significantly increases learner motivation. Cabansag and Dizon (2024) emphasized that contextualizing BSPS activities based on students' local environment deepens their appreciation of scientific inquiry. Despite this growing body of evidence, a research gap persists in the learner-level assessment of BSPS. Much of the existing literature focuses on teacher practices, curriculum evaluation, or pedagogical strategies, with limited data directly profiling students' actual process skill levels. This presents a challenge in creating instructionally sound interventions or lesson exemplars tailored to learners' needs.

To address this gap, this study aims to assess the level of learners' BSPS and use the results as the foundation for developing a supplementary lesson exemplar. The exemplar will align with the K to 12 learning competencies and support the goals of the MATATAG curriculum by offering contextualized and skill-specific instructional materials. This study supports the DepEd Basic Education Development Plan 2030 and contributes to Sustainable Development Goal 4 (Quality Education) by promoting inclusive, evidence-based, and skill-oriented instruction. The outcomes are expected to benefit both learners and teachers by improving instructional practices and learner outcomes in science education.

Methods & Research Design

This study employed a Developmental Research Design, which focuses on the systematic development, validation, and refinement of educational materials through data-informed procedures. In this study, developmental research was used to (a) assess Grade 7 learners' Basic Science Process Skills (BSPS), (b) identify specific learning gaps, and (c) develop a supplementary lesson exemplar that responds to these identified needs.

The developmental process followed an Input–Process–Output (IPO) framework. The input phase involved gathering data on learners' proficiency levels across seven BSPS domains, observing, classifying, inferring, predicting, measuring, communicating, and interpreting data, as well as documenting the common difficulties they encounter. The process phase included analyzing the assessment results to determine the most and least developed skills and using these findings to guide the design and refinement of the lesson exemplar. The output phase consisted of producing a supplementary lesson exemplar intended to address the identified BSPS gaps.

This design was appropriate for the study because its intent is not only to describe learners' current skills but also to translate empirical findings into an instructional product. Developmental research ensures that the produced material is anchored in actual learner data, increases contextual relevance, and supports evidence-based instructional improvement.

Research Procedure

This study utilized a Developmental Research Design following an Input–Process–Output (IPO) framework. In the input phase, Grade 7 learners' proficiency in seven Basic Science Process Skills (BSPS)—observing, classifying, inferring, predicting, measuring, communicating, and interpreting data—was assessed using a researcher-developed tool, complemented by a Learner Difficulties Checklist and guided open-ended questions. During the process phase, quantitative results were analyzed to identify the most and least developed skills, while qualitative data highlighted common learner difficulties, informing the design of a supplementary lesson exemplar. In the output phase, the draft exemplar was reviewed by experts, and feedback was incorporated to finalize an evidence-based instructional material targeting the identified BSPS gaps.

Research Instruments

The primary instrument used in this study was a researcher-developed Basic Science Process Skills (BSPS) Assessment Tool, designed to measure Grade 7 learners' proficiency across seven fundamental science process skills: observing, classifying, inferring, predicting, measuring, communicating, and interpreting data. The assessment consisted of multiple-choice items and performance-based tasks that were aligned with the indicators set by the K to 12 Science Curriculum Guide. To complement the quantitative results, a brief Learner Difficulties Checklist and guided open-ended questions were included to identify the common challenges students encounter when performing BSPS-related tasks. The instrument underwent content validation by science educators and curriculum specialists to ensure clarity, relevance, and alignment with intended competencies. Necessary revisions were made based on expert feedback before the tool was finalized and administered to the target group. This combination of quantitative and qualitative components allowed for a comprehensive understanding of learners' BSPS proficiency and difficulties, which served as essential input for the development of the supplementary lesson exemplar.

Research Participants

Participants will be 30 Grade 7 students enrolled in the Science, Technology, and Engineering (STE) program at a public secondary school in the Philippines. Purposive sampling will be used, selecting learners who are actively participating in the Grade 7 science curriculum under the K to 12 program. The STE program was chosen because of its emphasis on scientific inquiry and enriched science content, making it a suitable context for assessing Basic Science Process Skills.

Data Collection Procedure

Data will be collected using a 30-item Basic Science Process Skills diagnostic test adopted from the Division of Negros Occidental, Region VI–Western Visayas. The instrument includes multiple-choice items aligned with the six core science process skills. Prior to full implementation, the instrument will undergo review by local science educators to ensure contextual relevance, clarity, and alignment with the current K to 12 learning competencies. The actual administration of the diagnostic test will take place in a face-to-face classroom setting under the supervision of the researcher and classroom teacher. Instructions will be standardized, and time allotment will be uniform for all participants. All responses will be collected immediately and securely stored for data analysis.

Data Analysis

The study's comprehensive Process for data analysis integrates both quantitative and qualitative methods to ensure a Output. For the quantitative input (BSPS test scores), descriptive statistics (frequency, percentage, mean, and standard deviation) will be utilized to accurately determine students' average proficiency levels in each BSPS domain and identify skill-specific trends. Where applicable, inferential statistics, specifically independent samples t-tests, will be applied to the mean proficiency scores to statistically explore if significant variations exist across different demographic groups or learning contexts. The qualitative input (data gathered via open-ended questions within a questionnaire regarding student experiences and opinions) will undergo thematic analysis involving systematic coding and theme generation. This process will articulate and explain the students' perspectives on the video-assisted module, providing rich contextual data to support or elaborate on the quantitative output concerning student proficiency and group comparison findings.

Results and Discussion

Table 1 presents the level of proficiency in Basic Science Process Skills (BSPS) of Grade 7 STE students of Panitan National High School.
The result found as indicated in Table 1, the level of proficiency in Basic Science Process Skills in terms of Observing is "Approaching Proficiency" (M=64.75%). In terms of predicting, the level of proficiency in Basic Science Process Skills is also "Approaching Proficiency" (M=63.45%). In terms of classifying, the level of proficiency in Basic Science Process Skills is likewise "Approaching Proficiency" (M=59.48%). In terms of inferring, the level of proficiency in Basic Science Process Skills is also "Approaching Proficiency" (M=56.90%). In terms of communicating, the level of proficiency in Basic Science Process Skills is also "Developing" (M=53.10%). Finally, in terms of measuring, the level of proficiency in Basic Science Process Skills is likewise "Developing" (M=44.83%).

BSPS Domain	No. of Items	Total Correct Response	Mean Scores	Interpretation
Observing	9	169	64.75%	Approaching Proficiency
Predicting	5	92	63.45%	Approaching Proficiency
Classifying	4	69	59.48%	Approaching Proficiency
Inferring	2	33	56.90%	Approaching Proficiency
Communicating	5	77	53.10%	Developing
Measuring	5	65	44.83%	Developing

Table 1. Mean Scores in Basic Science Process Skills of Grade 7 STE Learners
ScaleDescription: 85-100% (Advanced), 70-84% (Proficient), 55-69% (Approaching Proficient), 40-54% (Developing), Below 40% (Beginning)

The results of the study revealed that Grade 7 students in the Science, Technology, and Engineering (STE) programme were generally performing at the "Approaching Proficiency" level in most basic science process skills (BSPS), with some areas still at the "Developing" stage. Among the six skills assessed, observing received the highest mean percentage score (MPS) at 64.75%, followed by predicting (63.45%), classifying (59.48%), and inferring (56.90%). These results suggested that students were beginning to demonstrate the ability to engage with scientific enquiry but had yet to reach full proficiency. Observation, in particular, appeared to be a relatively well-developed skill among students. This supported Harlen's (2010) assertion that observing was among the most accessible and foundational science process skills, as it often came naturally through repeated exposure to concrete, real-world phenomena. Likewise, the strong performance in predicting suggested that students were capable of drawing on patterns and prior knowledge to anticipate outcomes—an ability emphasized by Bybee (2013) as critical in building scientific reasoning.

Furthermore, the scores for classifying and inferring—though still within the "Approaching Proficiency" range—were slightly lower, indicating that students might have needed further support in distinguishing and categorizing information or drawing logical conclusions based on evidence. Padilla (2020) explained that such skills involved higher-order thinking and abstraction, which continued to develop during early adolescence. It was likely that additional scaffolding and enquiry-driven tasks could have supported student growth in these domains.

The most notable challenges were observed in the areas of communicating and measuring, which received mean scores of 53.10% and 44.83% respectively, placing them in the "Developing" category. The lower performance in communication may have been attributed to limited exposure to scientific language or insufficient practice in articulating scientific explanations both orally and in writing. This aligned with findings from Bautista and Tan (2021), who observed that Filipino students often faced language-related challenges in science, particularly when translating their ideas into coherent scientific statements. Measuring, on the other hand, likely reflected a lack of conceptual understanding of standard units and the proper use of tools—an issue also noted in the Department of Education's (DepEd, 2023) curriculum review, which emphasised the importance of practical, real-world applications in science instruction.

This study did not include qualitative data (e.g., interviews or open-ended responses) or error analysis. Therefore, while the quantitative data highlighted patterns of low performance, they did not provide in-depth insights into the specific cognitive or instructional difficulties faced by learners.

Overall, the data indicated that while students were making progress in several basic science process skills, there remained critical gaps that required targeted instructional support. To address these, science educators might have needed to intensify hands-on activities and laboratory experiences to strengthen skills like measuring, while integrating language-based tasks, such as science journaling and collaborative presentations, to enhance communication. As emphasised by Martin-Hansen (2018), meaningful engagement in enquiry and collaborative learning environments could significantly enhance both conceptual understanding and process skills. These findings underscore the importance of aligning instruction with the goals of the K to 12 Science Curriculum, which advocates for the development of scientific literacy and process skills as foundational elements for lifelong learning and STEM readiness.

Conclusion

This study addressed the critical issue of Basic science process skills (BSPS) among Grade 7 students enrolled in the Science, Technology, and Engineering (STE) program at a public secondary school. The findings revealed varying levels of proficiency across key Basic Science Process Skills (BSPS) domains, such as measuring and communicating, with certain areas showing a need for improvement. These results highlight the importance of reinforcing process skills within the K to 12 science curriculum to better equip learners with the foundational competencies needed for scientific inquiry. The implications of this study suggest that curriculum developers and educators should integrate more process-skill-centered activities into instruction, especially in enriched programs like Science, Technology, and Engineering (STE).

However, limitations such as the small sample size (n = 30) and the single-school setting constrain the statistical power of the findings and limit their generalizability to broader STE student populations. Future studies with larger and more diverse samples are recommended to validate and extend these findings. As future work, the researcher plans to develop a supplementary lesson exemplar aimed at addressing the identified gaps in science process skills, which could serve as a practical tool for teachers in similar contexts. Enhancing Basic Science Process Skills (BSPS) is essential for fostering critical thinking and scientific literacy among Filipino students, preparing them for more advanced scientific learning and real-world problem-solving.

Recommendations

Based on the IPO model, the proposed Lesson Exemplar should be designed as a targeted intervention that shifts from theoretical instruction to a highly practical, inquiry-based framework. To address the "Developing" status in Measuring, the exemplar must incorporate "tool-heavy" laboratory stations where students engage in repeated, hands-on calibration and data collection using standard metric instruments, moving beyond simple textbook illustrations. For Communicating, the lesson should integrate the Claim-Evidence-Reasoning (CER) framework, providing students with linguistic scaffolds and "sentence starters" to help them bridge the gap between their observations and formal scientific explanations. Furthermore, for skills like Classifying and Inferring, which are currently at the "Approaching Proficiency" level, the exemplar should utilize visual aids like Dichotomous Keys and graphic organizers to help students organize complex information.

By following a 7E Instructional Model (Elicit, Engage, Explore, Explain, Elaborate, Evaluate, and Extend), the exemplar will ensure that students prioritize the "Process" of science before the "Content," ultimately transforming the identified gaps into mastered competencies that align with the STE program's rigorous standards.

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Strategic Implementation of Virtual Reality to Improve Innovations in the Teaching and Learning Processes Associated with Rotorcraft Maintenance

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Abstract— The development of a Virtual Reality (VR) based training program for Rotorcraft Maintenance Training is a significant innovation in aviation education. After conducting a body of research, this report discusses ways to leverage the VR technology to enhance the teaching and learning process for people conducting maintenance on rotorcraft. The research utilized a document analysis, which provides evidence that VR technology creates engaging, interactive training environments for users. The effectiveness of VR in improving people's engagement with and retention of material has been demonstrated. By using VR technology, users of this type of program have reported a greater ability to perform complex tasks in a safe virtual environment. The results of this study indicate that VR implementation offers many benefits for training rotorcraft maintenance personnel. The adoption of VR as part of a training curriculum will improve the efficiency and effectiveness of programs training technicians. Additionally, it will allow technicians to become job-ready sooner than with traditional training methods. Further, it has the potential to foster a culture of continuous learning and adaptability within the maintenance community. In addition to learning outcomes, the analysis highlights operational advantages relevant to rotorcraft maintenance programs, including reduced dependence on aircraft availability, minimized tool and component wear from repeated hands-on practice, and the ability to standardize instruction across cohorts and training locations. VR simulation is especially well-suited to rotorcraft maintenance tasks that are difficult to schedule, hazardous, or costly to replicate (e.g., fault diagnosis, confined-area procedures, and rare emergency or abnormal conditions). The results of this study indicate that integrating VR into rotorcraft maintenance curricula offers substantial benefits for technician development by improving training efficiency and effectiveness, accelerating progression toward job readiness, and reinforcing safety and compliance behaviors. Finally, the report argues that VR adoption can help cultivate a culture of continuous learning and adaptability within the maintenance community by enabling ongoing proficiency training, just-in-time refreshers, and rapid updates when platforms, manuals, or procedures change.

Keywords: Virtual reality, innovations, curriculum, aviation education, rotorcraft maintenance

INTRODUCTION

With the increasing demand for qualified maintenance technicians, the implementation of VR in training is a timely and relevant development. The VR-based training program is one area in which the aviation education industry is changing to reflect both advances in education technology and increasing technical capabilities. This study serves as a starting point for future investigations of the potential of VR innovations to impact how professionals are trained and developed. The next section provides an overview of the broader context of this research and discusses the opportunities and implications of VR for adding value to the training of maintenance professionals, as well as how VR technology adoption will evolve over time. Many rotorcraft systems incorporate both mechanical and electronic components that must be properly maintained so rotorcraft can operate safely and efficiently. In addition to mechanical and electronic expertise, the wide array of rotorcraft systems creates a substantial learning curve for maintenance personnel who must develop proficiency across all maintenance areas.

Maintenance personnel have typically learned through traditional teaching methods (i.e., lectures and textbooks). Subsequently, traditional teaching methods do not always engage students effectively, nor do they foster a full understanding of the skills required to perform maintenance on a rotorcraft. Therefore, innovative and creative teaching methodologies should be explored to create an enhanced learning experience for maintenance personnel and to prepare them for the challenges they may encounter in a rotorcraft maintenance environment.

Statement of the Problem

This study aimed to investigate the strategic use of Virtual Reality (VR) in educating and developing trainees within rotorcraft maintenance programs. This study will measure changes in pupil engagement, skills developed, as well as retained knowledge by all trainees when utilizing the technological method of VR as opposed to conventional methods of instruction.

How do rotorcraft maintenance trainees describe their learning experiences when using Virtual Reality (VR) compared to traditional training methods?

What perceived impacts does Virtual Reality training have on the development of skills, knowledge retention, and confidence among rotorcraft maintenance trainees?

What challenges and opportunities do trainees and instructors identify in the implementation of Virtual Reality technology in rotorcraft maintenance training programs?

Scope and limitations

This study explores the use of Virtual Reality (VR) as an instructional tool in rotorcraft maintenance training, focusing on trainees' learning experiences, engagement, knowledge retention, skill development, and confidence compared to traditional training methods. The study employs a qualitative approach, utilizing semi-structured interviews and focus group discussions with purposively selected trainees, instructors, and VR specialists to capture in-depth insights into VR-based learning. The findings are subject to several limitations. The small, non-random sample limits the generalizability of the results. As a qualitative study, the outcomes rely on participants' subjective perceptions, which may introduce response bias. The study does not incorporate quantitative or longitudinal measures to assess long-term learning outcomes or performance improvements.

Additionally, variations in VR technology and implementation contexts were not controlled, and institutional or financial constraints related to VR adoption were not extensively examined.

Review of Related Literatures

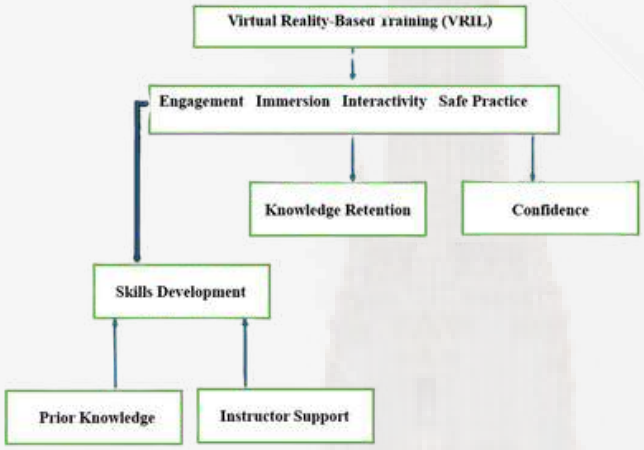
The educational literature reveals numerous areas in which conventional teaching methodologies have failed to develop the ability to perform maintenance on rotorcraft. Learning styles traditionally used to train professional pilots and technicians have failed to engage university students or provide the hands-on experience needed to master complex systems. A number of studies have shown that an effective way to bridge this gap is to include Virtual Reality (VR).

Although many studies provide evidence of the positive effects of VR, more work is needed to guide educators who want to incorporate its benefits into their curricula. Most research supports general educational settings rather than specifically targeting the unique challenges of rotorcraft training. In addition, there has been little examination of long-term effects on performance or confidence of maintenance personnel regarding their use of VR during training.

Theoretical Framework

Constructivist Learning Theory posits that learners actively construct knowledge through experience and interaction with their environment. In the context of Virtual Reality (VR), trainees are not passive recipients of information but active participants who manipulate rotorcraft components and simulate maintenance procedures. VR environments support this theory by allowing learners to build understanding through immersive, hands-on engagement rather than relying solely on lectures or textbooks.

Conceptual Framework



The conceptual framework of this study illustrates how Virtual Reality-Based Training (VRIL) influences the learning and skill development of rotorcraft maintenance trainees. VRIL serves as the primary intervention, providing immersive, interactive, and safe simulations that replicate real-world maintenance scenarios. These features enhance trainee engagement, interactivity, immersion, and the opportunity for risk-free practice, which collectively improve knowledge retention and self-confidence. Increased knowledge retention and confidence subsequently contribute to the development of practical skills essential for rotorcraft maintenance. Additionally, the framework recognizes the moderating roles of prior knowledge and instructor support, which can further optimize the learning outcomes by guiding trainees and reinforcing the application of VR experiences in real-world contexts. Overall, the framework highlights VRIL as a powerful educational tool capable of transforming traditional maintenance training into a more engaging, effective, and skills-focused learning process.

METHODOLOGY

Research Design

This study used qualitative research to study how VR can change the way we teach and learn about maintenance procedures for rotorcraft. With a qualitative approach, the researcher could investigate the real-life experiences of maintenance technicians and trainees who have been exposed to VR-training methods. This study's main objective was to investigate how people interacted with VR simulations and how their VR experiences would affect their level of engagement, retention of knowledge, and self-confidence to perform maintenance tasks. Since this was a qualitative study, the researcher was able to provide detailed descriptions of how each participant experienced learning through VR, compared to traditional training methods.

Research Steps

This study followed several steps during the research process. The first step was to identify the research problem and create guiding questions that were related to the effectiveness and experiences of participants using VR to learn rotorcraft maintenance. The second step was to purposively select participants who have experienced VR-based training and have used traditional training methods. The third step was developing interview protocols to guide discussions regarding the participants' experiences and perceptions of Virtual Reality Integrated Learning (VRIL) in VR-based training. The fourth step was conducting interviews with the purposively selected participants and allowing participants the opportunity to discuss their experiences and perceptions of integrating VR in training. The final step was to compile, analyze, and interpret the collected data to find themes and patterns of the benefits of using VR to improve learner outcomes and engagement.

Data Collection and Sample Selection

The researcher primarily used semi-structured interviews to gather data from participants of the VR training program for rotorcraft maintenance. This data collection method allowed participants to share their experiences in detail, while providing the researcher with the opportunity to investigate the participants' responses in depth and obtain additional information. Data collected during interviews were the participants' perceptions of VR simulations, level of engagement in the training program, understanding of the complexities of mechanical systems, and level of confidence in completing maintenance tasks following their use of VR for the purpose of learning rotorcraft maintenance. Participants' interviews were able to be completed in either face-to-face or virtually using technology (excluding participants who did not have access). All responses were documented through the use of audio recordings and written notes to ensure that the data was both accurate and complete.

Data Analysis Methods

Data collected from interviews of the participants who experienced VR IL were analyzed by the researcher using thematic analysis. The recorded interviews were transcribed and fully reviewed prior to beginning the analysis process to ensure that the researcher was very familiar with the responses provided by each participant. The next step in the analysis process was to code the data from the participants by identifying meaningful responses and segments of data associated with learning outcomes, engagement, retention of knowledge, and confidence in performing maintenance tasks. Codes were then combined into larger themes that were based on similar patterns within the experiences of participants in the VR IL training program. By carefully comparing and interpreting these themes, the researcher gained powerful insights regarding both the advantages and disadvantages of integrating VR into rotorcraft maintenance training. The results of the analysis process were incorporated into the overall findings and conclusions of this study.

Study Limitations and ethical considerations

This study is limited by its qualitative design, which emphasizes depth over generalizability. The small, purposively selected sample may not represent all rotorcraft maintenance trainees. Data were based on self-reported experiences, which may be subject to bias. Additionally, the absence of quantitative measures and long-term assessment limits the evaluation of VR's overall effectiveness. Informed consent was obtained from all participants, and participation was voluntary. Confidentiality and anonymity were strictly maintained, with data used მხოლოდ for academic purposes. The researcher ensured objectivity throughout the study and minimized bias in data interpretation. Safety considerations related to VR use, such as user comfort and well-being, were also observed.

RESULTS AND DISCUSSION

RESULTS

Learning Experiences of Trainees Using VR vs. Traditional Methods

Participants consistently described their learning experiences with Virtual Reality (VR) as immersive, interactive, and experiential, in contrast to traditional methods, which were characterized as passive and theory-heavy. Many trainees emphasized that VR allowed them to "learn by doing," enabling them to manipulate rotorcraft components in a simulated environment.

Perceived Impact of VR on Skills, Knowledge Retention, and Confidence

Enhanced Skill Acquisition

Participants reported improved procedural skills due to repeated practice in a risk-free environment. VR enabled them to perform complex maintenance tasks multiple times without fear of damaging actual equipment.

Improved Knowledge Retention

Trainees indicated that VR experiences were more memorable than traditional learning methods. The ability to visualize and interact with systems contributed to deeper understanding and long-term retention.

Increased Confidence

Many participants expressed higher confidence levels when transitioning to real-world maintenance tasks after VR training. The simulated practice reduced anxiety and uncertainty.

1. Challenges and Opportunities in VR Implementation

Opportunities:

- Safe simulation of hazardous procedures
- Standardized training experiences
- Increased learner engagement and motivation
- Faster skill development and job readiness

Challenges:

- High initial cost of VR hardware and software
- Limited access to VR technology for some trainees
- Need for instructor training and technical support
- Possible technical issues (e.g., system glitches, motion sickness)

DISCUSSION

These findings reinforce constructivist learning principles, where knowledge is actively constructed through experience. VR-based training aligns with experiential learning theory, allowing trainees to engage cognitively and physically with learning materials. The results support prior studies indicating that immersive environments significantly enhance understanding of complex technical systems.

The findings suggest that VR serves as a powerful tool for competency-based training, particularly in high-risk and technically demanding fields like aviation maintenance. The increase in confidence aligns with self-efficacy theory, which posits that mastery experiences significantly influence an individual's belief in their capabilities. The results also indicate that VR not only enhances technical competence but also prepares trainees psychologically, which is crucial for safety-critical industries. While VR offers transformative potential, its implementation is not without constraints.

The financial and technical barriers highlight the need for institutional support and strategic planning. Organizations must consider cost-benefit trade-offs and invest in scalable VR solutions.

SUMMARY

In summary, based on the results of this study, it can be inferred that the integration of VR in rotorcraft maintenance training will have a significant impact on the future of rotorcraft maintenance training and will be discussed in detail throughout the remainder of this paper, including how this study's findings may be utilized to develop rotorcraft maintenance training in the future and what challenges will arise when integrating VR into the training process. Participants noted that VR enabled them to engage with complex maintenance tasks in ways that traditional methods did not. Participants believed that engagement with VR could lead to improved skill/knowledge retention, which is fundamental to a career requiring precision and expertise. The immersive aspect of VR allows trainees to practice procedures safely while simultaneously developing self-confidence that will benefit them in real-world applications.

CONCLUSIONS

This study demonstrates that Virtual Reality (VR) significantly enhances rotorcraft maintenance training by improving learner engagement, knowledge retention, skill development, and confidence compared to traditional methods. The immersive and interactive nature of VR allows trainees to practice complex procedures in a safe and controlled environment, leading to better learning outcomes and increased job readiness. However, challenges such as high implementation costs and limited sample size must be considered when interpreting the findings. Despite these limitations, VR presents a promising and effective approach to modernizing aviation training. Further research is recommended to examine long-term impacts and support wider adoption in technical education.

RECOMMENDATIONS

Based from the findings and conclusions of the study, the following recommendations are suggested:

These implications emphasize the need for further research and development in VR training systems. Addressing the associated challenges is critical for organizations seeking to adopt VR successfully. As we consider these points, we move toward broader discussions of the future of education for maintaining rotorcraft and VR's impact on the field of education. The following section provides a summary and draws conclusions based on significant implications for future research focused on continued innovation in training methodologies.

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Strengthening Safety Awareness for Line Maintenance Personnel: A Research-Based Approach to Improving Workplace Safety Protocols

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Abstract— In the field of line maintenance, safety awareness is critical to guaranteeing staff safety. This essay examines the urgent need for increased safety standards in this profession, focusing on the unique issues workers encounter in high-risk workplaces. Recent improvements in safety training and workplace practices have underscored the importance of not only following established norms but also instilling a safety culture among all personnel. According to studies, increasing awareness might reduce accidents and injuries, benefiting both workers and organizations. The combination of effective communication and continual education plays a vital role in improving safety. By prioritizing these characteristics, businesses can foster an environment in which line maintenance personnel feel empowered to express issues and make improvements. This proactive strategy encourages not only adherence to safety procedures but also personal investment in the safety culture as a whole.

INTRODUCTION

In line maintenance, maintaining safety awareness is crucial to protecting personnel who face a variety of hazards on the job. Understanding the significance of safety in this profession is the first step toward reducing accidents and improving general working conditions. Current safety protocols are intended to help employees spot hazards and respond effectively; nevertheless, their effectiveness depends heavily on how well they are implemented and adopted by all team members.

This study will look at the specific goals of increasing safety awareness among line maintenance professionals. Examining existing safety standards allows us to discover gaps and places for improvement. One goal is to determine how current training programs convey safety policies and successfully engage workers. Another purpose is to assess leadership's involvement in building a safety-first culture, ensuring that everyone takes responsibility for their own and their colleagues' safety.

Understanding these concepts is critical as we work to establish practical approaches for raising safety awareness. The next part will describe the methodology used in this study, including how data will be collected and processed to inform our conclusions. This methodical approach will serve as a platform for developing concrete initiatives that will result in a safer, more efficient workplace for line maintenance personnel.

Methods

To improve safety awareness in line maintenance, a systematic research methodology was used to guide the study. This design relied on both qualitative and quantitative methods to provide a comprehensive understanding of safety standards. Data gathering included surveys and interviews with line maintenance people, which provided direct insight into their experiences and impressions of workplace safety procedures. Surveys were issued to a broader group to collect statistical data on safety procedures and events, whilst interviews gave more detailed narratives that emphasized specific issues and suggestions from employees.

Participant selection was critical to the research procedure. A broad group of persons was recruited, representing various positions and degrees of experience in line maintenance. This diversity ensured that the findings reflected a variety of viewpoints and insights, which is critical when establishing effective safety initiatives. The participants included seasoned workers, new hires, and managers, providing a full view of the organization's safety culture.

The collected data were examined to identify patterns and areas requiring attention. The study's goal is to provide strong recommendations for raising safety awareness by integrating quantitative data and qualitative observations. These findings will be reported in the subsequent outcomes chapter, which will provide greater detail on the research's implications for workplace safety practices.

Results

The documentary analysis identified numerous key themes related to the organization's safety awareness and line maintenance methods. A review of safety manuals, incident reports, memoranda, and training materials revealed that employees frequently lack clear, accessible, and up-to-date information on safety protocols. Although training materials and orientation modules exist, many focus on broad safety principles rather than on the specific high-risk conditions encountered by line maintenance personnel. This mismatch suggests that the content of accessible safety materials may be insufficiently aligned with the realities of the workplace.

Incident logs and after-action reports revealed persistent patterns of safety violations stemming from insufficient follow-through after formal training sessions. Several internal studies found that although staff attended mandated safety orientations, the lack of contextualized, hands-on learning materials reduced the training manuals' practical relevance. The disparity between written instructions and actual workplace realities emphasizes the need to realign training resources with the operational demands of line maintenance.

Furthermore, internal memoranda and committee meeting minutes demonstrated a high emphasis on participatory safety standards. Active safety committee documents revealed fewer documented events, highlighting the positive impact of employee participation in developing and evaluating safety recommendations. Records showed that when workers were allowed to contribute to safety conversations, protocol updates were more grounded, comprehensive, and indicative of real-world operational issues.

Overall, the documentary evidence shows that, while safety processes are formally documented, a significant gap exists between written policies and their implementation in practice. The findings emphasize the necessity of creating more job-embedded training materials and fostering a culture of employee participation in safety decision-making (Samarasinghe & Heenatigala,2024).

These findings highlight the necessity for firms to rethink their safety training programs and processes. The following section examines how these findings might inform strategic discussions on improving safety standards in the line maintenance sector, with a focus on increased training and employee participation.

Discussion

The documentary analysis reveals significant limitations in the effectiveness of current safety communication and training materials for line maintenance personnel. Several internal papers, including safety manuals, post-incident reports, and training modules, show that current safety information may not be sufficiently clear, operationally relevant, or routinely updated. Many of the materials evaluated highlight basic safety concepts while providing scant guidance on the intricate, hands-on duties involved in line maintenance operations. This shows that, while official safety rules exist on paper, they may not fully address the workforce's real demands.

Training materials also appear to rely mainly on theoretical rules, with little focus on scenario-based or practical safety recommendations. After-action reports that continually highlight misconceptions or misapplications of defined procedures as contributing factors to safety violations reinforce this lack of contextualization. Such trends point to a larger structural issue: the gap between written policies and their actual execution in day-to-day operations. Increasing the practical utility of safety documentation, such as incorporating precise job-specific procedures and clearer visual cues, may improve the transmission and retention of vital safety information.

Another conclusion from safety committee reports and internal memorandum files is the favorable impact of participative approaches to safety management. Documents indicating active worker participation, such as meeting minutes, committee recommendations, and collaborative protocol amendments, show more consistent adherence to safety requirements and fewer documented safety problems. This supports the idea that when employees examine and shape safety procedures, the final documents become more relevant, comprehensive, and broadly accepted.

While documentary analysis provides essential insights, it is crucial to understand various limits. The correctness of the findings is dependent on the completeness and quality of the accessible documents. Some safety logs were inconsistently updated, and many training manuals lacked clear version histories, making it challenging to identify whether obsolete materials were still being used. Furthermore, documentary sources cannot adequately represent workers' lived experiences or their nuanced interpretations of written safety regulations. Future research could benefit from combining documentary evidence with observational data or direct workplace assessment to better understand how safety communication is implemented in practice.

Overall, the discussion emphasizes the need for businesses to improve the alignment of codified safety regulations with the actual reality of line maintenance. This includes enhancing the clarity, relevance, and practicality of safety documentation, as well as maintaining participatory systems that allow employees to influence the creation of safety standards.

Conclusion:

In conclusion, the study identifies significant gaps in safety awareness among line maintenance professionals. Despite training, a sizable proportion of workers feel uneducated about safety protocols, which is associated with increased accident rates. This divergence calls into question the efficacy of present training methods and the necessity for more engaging strategies to convey critical safety information. This research is significant because it has the potential to inspire improvements in workplace safety, ultimately reducing incidents and fostering a safety culture (Javadi et al.).

As firms face the problems of maintaining safe workplaces, it becomes evident that improved communication and training approaches are required. Future studies should focus on testing innovative training methods, such as interactive workshops or simulations, to improve knowledge of and recall for safety procedures. Furthermore, investigating the impact of ongoing training and refresher courses could provide helpful information on long-term safety awareness among personnel.

Building on these findings, the following steps will include specific recommendations for organizations to improve their safety procedures. Companies that address identified shortcomings and adopt novel training strategies can considerably raise safety awareness among line maintenance personnel. This proactive approach will not only safeguard workers but also improve operational efficiency in high-risk areas. The route forward necessitates a dedication to ongoing development and adaptation of safety practices.

Recommendations

Organizations should focus on developing and improving training programs to raise safety awareness among line maintenance personnel. More interactive aspects, such as hands-on simulations and scenario-based learning, can help workers better grasp and retain safety protocols. Employees' confidence in their abilities to identify and respond to threats is likely to increase if training sessions are more interesting.

In addition to enhancing training methodologies, implementing new protocols is critical for addressing the research gaps. These protocols should reflect current best practices and be easily accessible to all staff. Regular updates and thorough communication about any changes will keep personnel up to date on the latest safety precautions.

Furthermore, continual monitoring of safety measures is critical for ensuring a high level of worker safety. Organizations should conduct regular assessments to determine the effectiveness of their training and safety practices. This could include regular evaluations of incident reports, safety audits, and employee feedback sessions. Companies that evaluate their safety practices regularly can identify areas for improvement and adjust their strategies accordingly.

These ideas offer a road map for firms looking to increase safety awareness among their line maintenance personnel. Implementing these improvements can help create a safer working environment, minimize incidents, and build a safety culture. The next stage will be to review existing research and literature to support these recommendations and lay the groundwork for future activities.

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Adoption and User Attitudes Toward Modernized Transportation System in the Philippines: A Redefinition of Experience

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Abstract— While sustainability and innovation are the name of the game, and the endless increase of our population, people are seeking economic growth, and mobility has become a privilege. To foster a sociallyintegrated, thriving society,the modernization of all means of transportation is of privilege. This research addresses the Nine United Nations Sustainable Goals for Modernized Public Transport, such as SDGs 3, 5, 8, 9, 10, 11, 12, 13, and 16.

This study employed a mixed-method design, gathering data through a survey questionnaires and blended interviews with 244 commuter participants. The research investigated the experience, adoption, and attitudes of commuters towards the modernization of app-hailing services, modernized PUVs, and rail upgrades. By identifying the challenges, this study fills a critical knowledge gap and provides a foundation for viable recommendations to help the government, specifically the LTFRB, in pursuing the project of modernization that will really change the lives of the people.

Results indicatethat while the technological shift (app and cashless payment)is welcomed and seen as "easy to learn", the physical infrastructure (route coverage and station proximity) and economic factors (surge pricing and higher fare) are the primary hurdles. Commuters are willing to adopt a modernized system for the sake of comfort and dignity in travel, but only if these systemsbecome more accessible and affordable for the average Filipino workers and students.

To ensurea deeper understanding on modernization of public transport, the government should share with the public the summary of the financial budget from which they get the funds, the feasibility study on the reliability of the project, and its sustainability. Remember, a progressive government is a progressive economy.

Keywords: sustainability, modernization, app-hailing services, modernized PUVs, rail upgrades

INTRODUCTION

Is it true that the modernization of public transport will change the lives of the Filipino people? The answer is a big yes, only if the government helps us to sustain the needs of the Filipino people by enhancing accessible public transport to ensure better mobility. Modernization will surely have environmental sustainability, only if all are modernized, because it will reduce greenhouse gas emissions, air pollutants, and noise pollution. To ensure a socially integrated and economically thriving society, LTFRB, PUVMP, and the government must work together. Safety, efficiency, convenience, and reliability are the formula to sustain a better economy.

In an era whereinnovation and sustainability are central to global development, the rapid growth of the Philippine population has made efficient mobility a critical necessity for economic progress. Modernizing transportation is not just a technological goal but a fundamental privilege essential for fostering a thriving, socially integrated society. This imperative aligns with the "UnitedNations' Nine (9) Sustainable Development Goals for Modernized PublicTransport, SDG 3,5,8,9,10,11, 12,13, and 16 as referenced from UITP, Advancing Public Transport.

Despite the government's efforts, specifically through the Land Transportation Franchising and Regulatory Board (LTFRB), to pursue modernization projects like app- hailing services, modernized public utility vehicles(PUVs), and rail upgrades, significant knowledge gaps remain regarding how these changes are experienced by the public. Commuters in Metro Manila, for instance, often face a daily struggle rooted in systemic inequality. While some view these technological shifts as a "boon" for efficiency, others see them as a "bane" due to challenges in infrastructure and economic accessibility.

This researchemploys a mixed-method design to investigate the adoption, attitudes, and overall experiences of 244 commuter participants. By identifying the specific challenges faced by users, ranging from technological shifts like cashless payments to physical hurdles like route coverage, this study seeks to provide a foundation for recommendations that will genuinely improve the lives of the Filipino People.

Review of Related Literatures

On the Global Framework for Transportation Modernization, the push for modernized public transport is globally framed within sustainable development. The International Association of Public Transport (UITP), in its work Advancing Public Transport, identifies nine United Nations Sustainable Development Goals (SDGs) that are directly addressed by modernizing transit: SDG 3 (Good Health), SDG 5 (Gender Equality), SDG 8 (Decent Work), SDG 9 (Industry and Innovation), SDG 10 (Reduced Inequalities), SDG 11 (Sustainable Cities), SDG 12 (Responsible Consumption), SDG 13 (Climate Action), and SDG 16 (Peace and Justice).

On the Factors Influencing the Adoption of Intelligent Systems, according to Himawan et al. in the study "Determination for the Adoption of Intelligent Transportation Systems (ITS) in Yogyakarta," the basis for adopting modernized transport systems includes: (1) Perceived Ease of Use and Usefulness: How simple and beneficial the technology feels to the user: (2) Infrastructure Readiness: The availability of physical support like stations and specialized lanes; and (3)Socio-economic Factors and Government Policy: The alignment of transport costs with user income and the strength of regulatory support.

On the Commuter Preferences and Willingness to Pay, the transition to modernized Public Utility Vehicles (PUVs) often involves financial trade-offs for the commuter. Research by Lailio and Marquez entitled "Commuters' Preferences and their Willingness to Pay for Modern Public Utility Vehicle" found that: (1) commuters generally show a positive willingness to pay for modern PUVs when they perceive a higher level of importance and value in the service; and (2) the two most significant indicators for this willingness are the specific amount they are asked to pay and the overall level of importance they place on the upgrade.

On the Impact of Technological Disruption and Law, the rise of ride-hailing apps represents a "disruptive technology" that challenges traditional legal frameworks. Atty. Jay-R C. Ipac (Divina Law) notes that (1) the potential of new technologies to change daily affairs makes "technology law" a critical, though debated, field; and (2) regulators should view these innovations as an opportunity to deliver better public services while ensuring that fundamental rights are protected and that innovation is "molded under existing law".
On the "Boon or Bane" Debate in the Philippines, local assessment of transport modernization often centers on whether the change is a "boon" (benefit) or a "bane" (burden). According to Espineli et al. in "Is Modernization of Public Transport in the Philippines: A Boon or Bane for the Filipino People?"(1) Research must evaluate commuter satisfaction through service quality, reliability, and accessibility; and (2)Stakeholder evaluations must also consider the environmental and sustainability aspects of the program to determine its true value to society.

On the Policy and Implementation Progress. Recent reports highlight the ongoing challenges in the Philippine Public Transport Modernization Program (PTMP): (1) Financial Hurdles: LTFRB Chairman Atty. Teofilo Gaudiz, Jr. (as reported by Inquirer.net, 2025) emphasized the need for government assistance to cover loan obligations for operators, with billions in loans planned through the Land Bank and DBP. (2) Slow Consolidation: As of early 2025, only 40% of consolidation applications for Modernized PUVs had been approved, largely due to driver concerns over financial difficulties and lack of support. And (3) Infrastructure Expansion: The Philippines News Agency (2024) reported that existing railway lines are set to increase to 1,233 kilometers through projects like the North-South Commuter Railway (NSCR) and the Metro Manila Subway.

METHODOLOGY

The research uses a mixed-method research design. Mean, Standard Deviation, Likert Scale, Kruskal-Wallis Test,and Spearman Correlation were used to support the findings using quantitative analysis. However, thematic design uses coding analysis to measure blended interviews and written responses of the participants. A total of 244 respondents (186 from the 13 – 28 years old, 44from 29 – 44 years old, 10 from 45 – 60 years old, and 4 from 61 – 70 years old commuters) participated in the study.A deductive codingsystem was used to get a predetermined set of tags for information. analyze every pattern, prepare a hypothesis, and formulate a recommendation or analysis.

The primarypurpose of the research designis to create a clear roadmap for a study. This ensures the evidence gathered directly and logically addresses the research problem, which in turn leads to valid and reliable conclusions. Qualitative research design seeks an in-depth understanding of complex phenomena, such as people's experiences, attitudes, and behavior.

This type of research uses interviews and observations to answer the why and how behindthe research study.Qualitative studies typically involve a smaller, carefully selected group of participants. A qualitative data-gathering technique using Thematic Tests through a Coding System Method will be used. At the end of the research steps, the researchers prepared a model based on the study's results. Moreover, a Quantitative research design centers on numerical data collection and analysis to answer the research question.

The study followed ethical protocols by getting informed consent from all participants,
guaranteeing anonymity and confidentiality, and granting participants the freedom to withdraw from the research at any point. Furthermore, ethical issues encompass the imperative to ensure the respectful portrayal of participants' views and viewpoints in the ultimate analysis and reporting.

RESULT AND DISCUSSION

The study involving 244 primarily young female and student participants from low to middle-income households reveals a high positive level of adoption across modernized transportation systems in the Philippines.App-based ride-hailing services received the highest adoption rating due to their user-friendly interfaces and convenience, while modernized public utility vehicles (PUVs) and rail system upgrades also saw positive reception for improving travel experiences and encouraging a shift away from private car use. Statistical analysis further indicates that these levels of adoption and the generally positive attitudes towards the system's utility and reliability remain consistent across all demographic groups.

Despite high adoption, significant barriers persist, most notably the high cost of ride-hailing and modernized PUV fares compared to traditional options, alongside persistent rail system issues like convenient station locations and technical malfunctions. Commuters redefined their experience through the lens of increased comfort and efficiency but highlighted a “price to service tension,” where even minor fare increases are felt as burdensome. Ultimately, the study finds a strong, statistically significant relationship between the frequency of use and positive attitudes, suggesting that as these modernized systems become more integrated and accessible, commuter sentiment continues to improve.

SUMMARY
Using a mixed-method design, this study of 244 Filipino commuters reveals a high level of adoption and positive reception towards modernized transportation technologies like digital booking and cashless payments. However, , despite a uniform desire for these upgrades across demographics, significant barriers such as high costs, fare sensitivity, and poor last-mile connectivity mean that authorities must prioritize affordability and infrastructure to truly benefit the public.

CONCLUSION
The findings suggest that while modernized transportation in the Philippines is widely accepted and viewed positively, especially by the youth, the redefinition of experience is stillhampered by operational inefficiencies like overcrowding and technical glitches. Addressing these infrastructure and reliability issues is crucial for sustaining the high level of adoption and user trust recorded in the study. In the qualitative data, the discussion highlights that while modernization has significantly improved the "comfort and technology" aspects of commuting, it has introduced new challenges relatedto "affordability and operational consistency." A true "redefinition of experience" suggeststhat providers (government, operators, LTFRB, and thelike) must balancetechnological upgrades with better capacitymanagement and price stability.

RECOMMENDATION
To improve the experience of Filipino commuters, the study recommends that regulators monitor surge pricing in app-based rail services and implement better incentives or penalties to address driver cancellations. For modernized PUVs, the government should provide targeted subsidies or student passes to cushion fare increases, strictly enforce passenger limits to prevent overcrowding, and utilize GPS data to ensure consistent vehicle dispatching. These measures aim to align technical modernization with the economic and behavioral needs of the public.

In the rail sector, recommendations include improving infrastructure, such as walkways and shuttle terminals, to solve the last-mile connectivity, increasing investment in technical reliability to reduce malfunctions, and boosting train frequency during the last hours.Furthermore, the study advocates for cross-system integration by expanding cashless payment modes like "Beep/QR" across all modes and improving physical connectivity between transport hubs.Ultimately, these efforts should map back to Sustainable Development Goals (SDGs) to foster long-term mobility and institutional strength in the public transportation system.

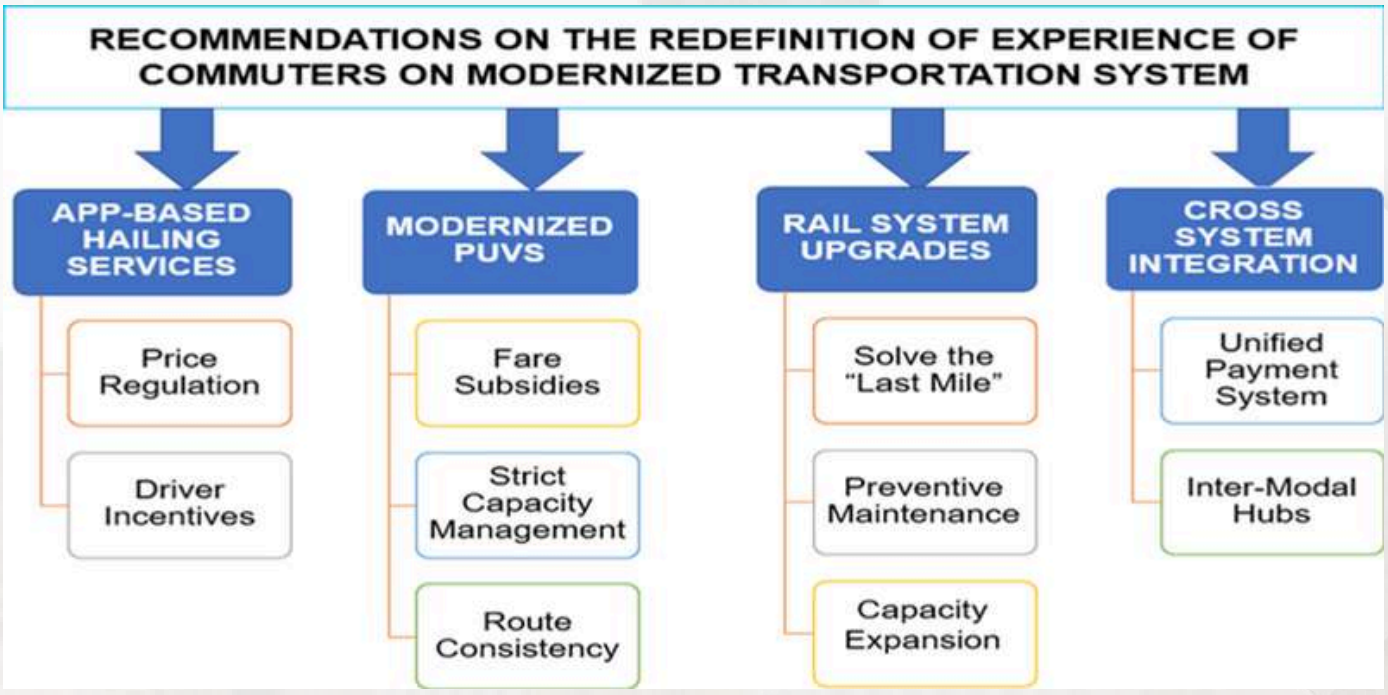

Figure 1. Recommendation on the Redefinition of Experience on Using the Modernized Transportation System

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Green FinanceEducation and Its Influence on Generation Z's Savings Behavior: A Study on Selected Citiesin Cavite

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Abstract— With the rise of environmental consciousness, integrating Green Finance Education (GFE) into the financial habits of Generation Z has become a critical focus. As digital natives, Gen. Z individuals in the Philippines are exposed to financial decision–making earlier than previous generations. This study investigates how GFE -encompassing knowledge, attitude, and awareness – correlates with the saving behaviors of 300 employed Gen. Z respondents in Cavite, while also accounting for influences such as parental guidance, peer pressure, and self-control. Using a quantitative research design with descriptive and correlational analyses, the study uses tools such as Spearman's rank correlation and Chi-square Tests to analyze survey data. The findings revealed that Gen Z responses indicate a moderate-to-high level of green finance awareness. These saving habits are notably positive, driven largely by financial literacy and self-control. Most importantly, the data confirmed a significant relationship between GFE and saving behavior, suggesting that a stronger grasp of sustainable finance directly fosters better personal savings habits. Ultimately, the research highlights that demographic variables influence the adoption of these financial concepts. To capitalize on these findings, the study recommends that educational institutions, financial bodies like the Bangko Sentral ng Pilipinas (BSP), and parents collaborate to strengthen GFE by integrating green finance into curricula and developing accessible digital green products, stakeholders can cultivate a generation that prioritizes both long-term financial stability and environmentally responsible economic practices.

Keywords: Green FinanceEducation, Savings Behavior,Environmental Sustainability, digital natives, financial literacy initiatives.

INTRODUCTION

The increasing emphasis on environmental sustainability has highlighted the need to integrate green finance into financial education. Green finance encompasses financial practices that support environmental sustainability, including responsible investing, green banking, and sustainable savings strategies. As financial literacyinfluences individuals' savingand spending behaviors, educating young people about green finance may encourage more disciplined and responsible financial decisions. Previous studies have demonstrated that savings behavior is influenced by factors such as financial literacy, parental socialization, and self-control, and that sustainability-oriented financial education positively affects financial decision-making (Leal, 2023; Rodriguez et al., 2024).Studies further suggestthat higher levelsof sustainability- related financial knowledge are associated with greater engagement in environmentally responsible financial practices (Senaya, 2024; Sutadi & Rahmawati, 2024).

Review of Related Literatures

The increasing focus on environmental sustainability has extended beyond lifestyle choices to financial behavior, giving rise to the concept of green finance. Green finance education, which emphasizes environmentally responsible financial practices, is essential in guiding young people to make informed decisions that benefit both their personal finances and the environment. Fu et al. (2020) highlighted that environmental awareness influences pro-environmental behavior through three main components: concern, attitude, and knowledge. Their study revealed that individuals who are more concerned about environmental issues, hold positive attitudes toward protection, and possess greater environmental knowledge are better equipped to make informed, sustainable choices. Education and institutional support are essential for translating awareness into consistent eco-friendly actions. Similarly, Leal (2023) found that savings behavior among young people is positively influenced not only by financial literacy but also by self-control, peer influence, and parental guidance, demonstrating how multiple personal and social factors shape responsible financial habits.

METHODOLOGY

The study employs a quantitative-descriptive correlational design to collect data and support the findings with statistical analyses. Purposive sampling was employed to select participants for the survey questionnaires. A total of 300 respondents (100 from Bacoor, 100from Imus, and 100 from Dasmariñas) participated in the study.Frequency and percentage distributions were used to characterize the respondents' demographic profile. Means and Standard Deviations were used to assess the level of awareness and understanding of Green Finance concepts and respondents' savings behavior. A 4-point Likertscale was used toidentify the level of assessment of Gen Z individuals on Green FinanceEducation, including green finance concern, green finance attitude, and green finance knowledge, and to assess factors affecting their savings behavior, such as financial literacy, peer influence, parental influence, and self-control.

Spearman's Rank Correlation was also used to test the correlation between Green Finance Educationand the savingsbehavior of Generation Z individuals. The Chi-Square Test wasused to examine the relationships between respondents' demographic profiles and their levels of Green Finance awareness and savingsbehavior. These statistical methods provided a systematic, data-driven approach to assessing the influence of Green Finance Education on the savings behavior of Generation Z individuals in selected cities in Cavite.

RESULTS AND DISCUSSION

The demographic profile of the 300 Generation Z respondents from Cavite reveals a predominantly female group (62%), single (92%), and aged between 21 and 33 years old (43.6%). Most participants are well-educated, with a 46% being at the college level and 32.33% having already graduated. In terms of financial standing, more than half are employed, through a significant portion (36,33%) earning a monthly income below Php 10,000. Despite these modest earnings, diversified saving habits were observed, with nearly half of the respondents successfully saving between 1% and 10% of their monthly income.

The study further establishes a strong link between Green Finance Education (GFE), and the saving behavior of these individuals.Respondents demonstrated a positive attitude and general awareness of green finance concepts, recording an overall mean of 3.15. Statistical analysis confirmed a significant relationship between this awareness and improved saving habits. Particularly through factors like financial literacy and self-control. While most demographic variables did not impact savings behaviors, civil status and employment status emerged as notable exceptions. Specifically, civil status was found to influence financial literacy and self-control, while employment status, significantly affected the level of peer influence on individual saving practices.

SUMMARY

Green Finance education significantly influences the savings behaviorof Generation Z in selected cities in Cavite, Philippines. Understanding and awareness of Green Finance, specifically participants' attitudes, concerns, and knowledge, contribute to more responsible and sustainable financial practices. More knowledgeable participants demonstrate stronger concern for Green Finance and tend to make more informed decisions regarding their savings and financial management, reflecting the impact of education on behavior.

The study also shows that some limitations remain. While most respondents demonstrate a fair level of awareness and positive saving behavior, their practical understanding of Green Finance concepts remains limited. In addition, certaindemographic factors, such as civil status and the percentage of income saved, are associated with specific aspects of awareness and behavior, while other demographic characteristics, including age, gender, education, occupation, and income, show little to no effect. These findings suggest that education, personal discipline, and financial literacy play the most important roles in promoting sustainable saving practices among Generation Z

CONCLUSION

The researchers concluded that Green Finance education influences the savings behavior of Generation Z in selected cities in Cavite. It guides young adults to combine financial responsibility with environmental awareness, transforming ordinary saving habits into more sustainable practices. While respondents generally show positive attitudes and concern toward Green Finance, practical knowledge of its concepts remains limited.

The researchers suggest that programspromoting financial literacyand Green Finance awareness are needed to strengthen understanding and encourage informed, environmentally responsible saving. Personal factors such as civil status, employment, and savings habits also affect financial decisions. By integrating educationwith personal circumstances, Generation Z
can develop disciplined, responsible, and sustainability-oriented financialpractices that benefit both themselves and the environment.

RECOMMENDATION

To strengthen the alignment with sustainable finance policies, future research should expand its scope to include a wider range of demographic and financial variables, such as debt-to-income ratios and specific savings allocations, while also evaluating the effectiveness of existing green finance programs across various institutions. Gen Z individuals are encouraged to leverage digital banking and fintech platforms that prioritize ESG investments and impact-driven savings to balance personal financial stability with environmental stability.Furthermore, educational institutions should transition toward mandatory green finance integration in their curricula, supplemented by practical workshops hosted in partnership with green banks and fintech firms to bridge the gap between theoretical knowledge and practical application.

Financial institutions are recommended to develop accessible, digital-first products such as eco-savings accounts and sustainable credit options, tailored specifically to the preferences of Gen Z. These institutions should also foster deeper collaborations with universities through mentorship and campus campaigns to enhance literacy and research support. Simultaneously, government agencies like Bangko Sentral ng Pilipinas (BSP) must provide consistent monitoring and clear ESG reporting standards to ensure the growth of green finance awareness across sectors. Finally, the role of parents and guardians remains vital, by reinforcing sustainable values and initiating discussions on financial responsibility at home, they can help solidify the lifelong savings habits and environmental consciousness developed through formal education.

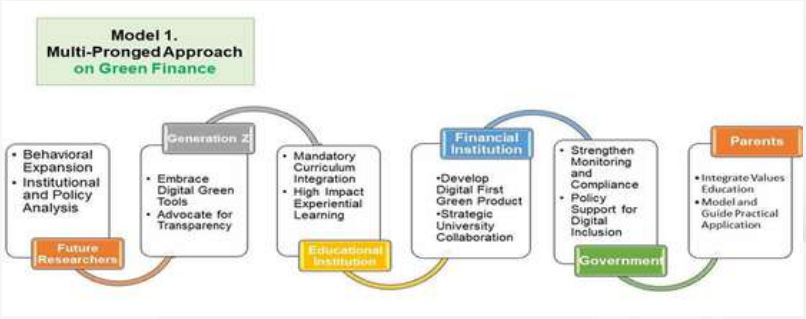

Figure 1. Multi-Pronged Approach on Green Finance

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