



ANBC 2024

Aguman Ning Belwan Conferences

BOOK OF ABSTRACTS

First International Multidisciplinary Research Conference

April
17-19
2024

Quest Plus Conference Center Clark, Pampanga
and via
Zoom Teleconferencing





This book contains all of the abstracts of the research papers presented during the **Aguman Ning Belwan 2024: 1st International Multidisciplinary Research Conference**, held on April 17–19, 2024, at the Quest Plus Conference Center Clark, Mimosa Leisure Estate, Pampanga, Philippines.

CONFERENCE OBJECTIVES

This conference aims:

- (1) to provide an avenue for further exploration and development of research outputs;
- (2) to provide a forum for the productive exchange of ideas and sharing of experiences among academicians, practitioners, and stakeholders;
- (3) to provide opportunities for researchers to disseminate relevant research in a wide range of discipline within the country; and,
- (4) to enable participants to establish networks and mutually beneficial partnerships with professionals from other HEIs and the stakeholders across national and international borders

RESEARCH AREAS

- Responsive Health System
- Food Safety and Security
- Science, Technology, and Innovation
- Art, Business, Education, Social Sciences, and Policy Formulation
- Environmental Management and Disaster Risk Reduction

MESSAGE FROM THE CONFERENCE CONVENOR



Robert V. Marcos, Ph.D.

As your conference convenor, in behalf of the host institution, **Tarlac State University**, and esteemed partner universities, the **Ming Chi University** of Taiwan, and the **Hankuk University** of Foreign Studies of South Korea, warmest greetings!

I humbly take the distinct pleasure and honor of cordially welcoming each of you to the **Aguman Ning Belwan (ANBC) 2024: 1st International Multidisciplinary Research Conference** with the theme “**Fostering resiliency, innovation and collaboration through meaningful research**” - our prestigious assembly that crosses boundaries and unites bright minds from all over the nation and the world.

We are starting a path of mutual learning, teamwork, and creativity as we get together here today. We can exchange ideas, discoveries, and insights at this conference that could influence not only our own domains but also those of future research and development.

The significance of international communication and collaboration in an increasingly interconnected society cannot be overemphasized. We build relationships, promote understanding, and develop answers to the problems our world faces today through platforms such as the ANBC.

Over the coming days, I encourage each of you to be fully involved, to question presumptions, to look for areas of agreement, and to motivate one another. Let's work together to create a more sustainable and brighter future by utilizing the collective wisdom in this assembly.

Once again, thank you for joining this conference. May we have insightful conversations, meaningful connections, and enduring memories during our time together.

Thank you.

A handwritten signature in black ink, appearing to be 'R. Marcos', written below the 'Thank you.' text.

MESSAGE FROM THE UNIVERSITY PRESIDENT

Dr. Arnold E. Velasco
UNIVERSITY PRESIDENT
TARLAC STATE UNIVERSITY
HOST INSTITUTION



Today marks a significant event as the Office of University Research Development (OURD) has come up with the **1st International Multidisciplinary Research Conference**.

Through the OURD, the university spearheads this conference in partnership with Ming Chi University of Technology and Hankuk University of Foreign Studies. Through this, we can fully influence professional growth, partnership, and innovation opportunities.

It offers a conference for interaction with others, up-to-date information on developments in your expertise, and knowledge expansion.

Our plenary speakers will undoubtedly contribute to our knowledge and understanding as they offer their expertise in Multidisciplinary fields. The respected lineup of speakers will enlighten, inspire, and ignite discussion in their respective fields!

Let's take steps in this direction to have the opportunity to learn from the experts. I look forward to following our researchers' endeavors and hope they will join more conferences.

Thank you very much, and I wish you continued success and inspiration in your research endeavors.

MESSAGE FROM PARTNER INSTITUTION

Prof. Dr. Thu-Hua Liu
UNIVERSITY PRESIDENT
MING CHI UNIVERSITY OF TECHNOLOGY
PARTNER INSTITUTION



Respected President, Dr. Arnold E. Velasco, Professors and Distinguished Guests of Tarlac State University,

Our heartfelt congratulations on hosting this significant joint international research conference. Since our signing of the Memorandum of Understanding and the 3+2 Memorandum of Agreement in April of last year, our collaboration has flourished, and this conference marks another milestone in our partnership.

The theme of this conference, **“Warranting a Future-proof Society through Academic and Research Innovations,”** reflects our shared commitment to knowledge exchange and cross-border research. In this era of globalization, we firmly believe that this conference will foster our academic collaboration, inspire new ideas, and provide innovative solutions to address contemporary societal challenges.

We are sincerely grateful to Tarlac State University for diligently organizing this event which further allows us to share and advance academic research collaboratively. We look forward to continued collaboration in the future, creating a broader platform for academic exchange for students and faculty from both institutions.

Wishing the conference great success and hoping that all participants gain rich academic insights.

MESSAGE FROM PARTNER INSTITUTION



Prof. Dae Geun Lim

**DEAN, COLLEGE OF CULTURE & TECHNOLOGY
HANKUK UNIVERSITY OF FOREIGN STUDIES**
PARTNER INSTITUTION

Greetings!

I sincerely appreciate the honor of being invited to speak at the Aguman Ning Belwan 2024: International Multidisciplinary Research Conference. It is truly a privilege to participate in an event dedicated to fostering academic innovation and shaping a future-oriented society through research and collaboration.

Above all, I would like to express my gratitude to Tarlac State University for their proactive approach in organizing such a significant conference. By providing a platform where researchers from diverse fields can converge and exchange ideas, you are not only fostering intellectual discourse but also paving the way for collective advancement.

As a representative of Hankuk University of Foreign Studies, I feel deeply humbled to have the opportunity to address esteemed colleagues and scholars. The conference theme, "Warranting a Future-Proof Society through Academic and Research Innovations," resonates deeply with our university's commitment to academic excellence and foresight.

This conference will provide an opportunity to explore the intersectionality of globalization, technology, and sustainable development and share the important outcomes of interdisciplinary research in addressing the complex challenges of the 21st century. By leveraging the collective expertise and insights from diverse academic fields, we can transcend traditional boundaries and build innovative solutions for a more resilient and equitable future.

I am genuinely excited about collaborating with esteemed researchers and stakeholders participating in Aguman Ning Belwan 2024. Together, we have the opportunity to catalyze innovative change and chart a path towards a more inclusive and sustainable society.

Once again, I extend my gratitude for the opportunity to participate in this conference. I hope that by breaking down the boundaries of academia and discussing various issues of our time with scholars from around the world, we can open the door to a brighter future in the 21st century.

Thank you.

MESSAGE FROM THE GOVERNOR

(PROVINCIAL GOVERNMENT OF TARLAC)

Gov. Susan A. Yap
**GOVERNOR
TARLAC PROVINCE**



It is with great pleasure and pride that I extend my warmest Congratulations to the organizers, presenters, participants, and delegates of the AGUMAN NING BELWAN 2024: 1st international Multidisciplinary Research Conference. This momentous event with the theme “Warranting a Future-proof Society through Academic and Research Innovations” is a testament to the collective dedication and commitment to advancing knowledge and fostering academic and research excellence.

As we navigate through the complexities of the modern world, it is imperative to underscore the role of academic and research innovations in shaping a future-proof society. The contributions of scholars, researchers, and professionals in various disciplines are vital in ensuring sustainable development, resilience, and progress for our communities and the global society as a whole.

I commend the efforts of Tarlac State university (TSU) Office of University Research Development in spearheading this conference, which serves as a platform for intellectual exchange and provision of best practices across different disciplines leading to cross-fertilization of knowledge, new insights, and breakthroughs. Moreso, this also serves as a means for expanded collaborations and networking, as well as the dissemination of cutting-edge research and ideas promoting diversity of perspectives that can lead to more comprehensive and holistic approaches to further address complex global challenges, at the same time, providing innovative solutions to problems that cut across traditional disciplinary boundaries. Your commitment in fostering a culture of innovation and excellence is truly commendable, and I am confident that the outcomes of this conference will yield significant impact and contribute to the advancement of knowledge and the betterment of society.

I am optimistic that the insights, knowledge, and solutions generated from this gathering will resonate beyond the confines of academia and research, and will find their way in propelling us towards a future that is sustainable, inclusive, and resilient.

I extend my best wishes for a fruitful and successful research conference. May this event serve as a catalyst for transformative ideas and linkages that will redesign a future-proof society for generations to come.

**MABUHAY ANG AGUMAN NING BELWAN! MABUHAY ANG MANANALIKSIK AT AKADEMIKONG
TARLAKENYO AT PILIPINO!**

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ABSTRACTS



IN-PERSON ORAL PRESENTATION

Experiences of the Alternative Learning System (ALS) Students and Teacher's Adjustments in Using PAPPG (Prepare-Attain-Practice-Participate-Gauge) Strategy in Science 10

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The DepEd Alternative Learning System (ALS) in the Philippines offers inclusive and equitable education, especially for marginalized youth, in line with the Sustainable Development Goals (SDGs) of the United Nations. In the face of obstacles, like the COVID-19 pandemic-induced shift to modular learning, ALS works to give instructors and students more power. To solve these issues, educational academics suggest creative strategies like the Prepare-Attain-Practice-Participate-Gauge (PAPPG) Strategy.

With a focus on physical science education, this study investigates how the PAPPG Strategy might be used to ALS students and instructors at Rizal National High School. Using a combination of quantitative and qualitative phenomenological descriptive methods, the study evaluates the effect of the technique on student learning outcomes and teacher and learner experiences.

The PAPPG Strategy has been found to have a positive impact on the academic performance of ALS students and to improve their comprehension of difficult scientific concepts like the "Rock Cycle." Participants have positive opinions of the strategy and acknowledge its usefulness in promoting learning and engagement. The significance of unambiguous information delivery and teacher support in optimizing the strategy's advantages is emphasized by thematic analysis of interview transcripts.

The study emphasizes how important it is to incorporate cutting-edge teaching strategies into ALS, such as the PAPPG Strategy, in order to promote inclusive and superior education. This research advances progress towards SDG 4 by addressing the unique needs of ALS learners and teachers. It also advances continuing efforts to enhance educational equity and possibilities for lifelong learning.

Keywords: Alternative Learning System (ALS), Strategy, Intervention

Optimizing the Travelling Salesman Problem: A Genetic Algorithm Enhanced with Tabu Search

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The pivoting of the logistics industry caused by the pandemic surely raised the pressure on delivery providers to resolve decreasing the travel time while still having optimal ways to deliver each parcel. Traveling salesman problem (TSP) is a common problem encountered in the logistics industry. It is known that the traveling salesman needs to choose the most efficient route to travel all of the said locations and return to the original city where the salesman started. The study aims to improve the quality of solutions for TSP instances by leveraging the complementary strength of the Genetic Algorithm (GA) and Tabu Search (TS). Genetic algorithms are commonly used for optimization that stimulates searching techniques that are observed in natural evolution. The main objective of the study is to enhance the genetic algorithm in order to further optimize the routing problem present in TSP and still be able to present efficient and optimal results. Specifically, the study focuses on the algorithmic enhancement, solution quality improvement, and convergence speed of the offspring producing suboptimal solutions using Tabu search. The results show that the current algorithm still produces the same optimal solution and its convergence rate and Root Mean Square Error (RMSE) remains an inconsistency that needs improvement. Moreover, the proposed algorithm produces multiple optimal solutions compared to the current method. The proposed algorithm also shows great reliability in its solutions. This output demonstrates the algorithm's ability to produce consistent results despite variations in convergence rate.

Keywords: Genetic Algorithm, Tabu Search Algorithm, Travelling Salesman Problem, Optimization

Assessing Local Government Support for Efficient Policing: The Case of Selected Municipal Police Stations in the Province of Ifugao, Philippines

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The Philippine National Police (PNP) has been constantly struggling with meager budget allocation for their operational services. Indeed, in the provinces, the local police quarterly fund allotment for their Maintenance and Other Operating Expenses (MOOE) is not far inadequate to cover the whole quarter it is intended for. This budgetary issue poses various challenges to the PNP personnel delivering efficient police services. This study aimed to assess the dynamics of local government support for efficient policing in the selected municipal police stations in the province of Ifugao, Philippines. Anchored in the principles of modern policing, particularly emphasizing the importance of public support, the study investigates the forms of support extended by local government units (LGUs) to local police stations. The study utilizes the qualitative case study design using focused group discussion in gathering data from four selected local police stations with the chiefs of police, investigators, logistics and supply officers, and the police community relations officers as participants. The results reveal that financial aid, information sharing, and technical services are common forms of support provided by LGUs. Moreover, the study identifies significant impacts of this support, including enthused motivation among local police personnel, improved civic collaboration, and reciprocity or mutual benefit between LGUs and local police personnel. However, challenges such as political variability, interpersonal issues, and aggressive lobbying hinder the process of seeking LGU support. In sum, the findings of the study underscore the critical role of LGU support in enhancing the quality and efficiency of local policing services and in fostering positive relationships between and among the LGUs, community members, and the police.

Keywords: Local Government Support, Local Police Station, Efficient Policing

SENSORY EVALUATION OF CHAYOTE (*Sechium edule*) PIE

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The main thrust of this study was to determine the sensory characteristics and level of likeness of Chayote *Sechium edule* Pie in terms of appearance, aroma, taste and texture of the three treatments: Treatment 1 with 30g of chayote flour and 100g of fresh chayote; Treatment 2 with 60g of chayote flour and 100g of fresh chayote; and Treatment 3 with 90g of chayote flour and 100g of fresh chayote. This study used an experimental parallel group design, employing the questionnaire as an instrument for gathering the data and applying the 9-point Hedonic Scale. There were 60 respondents in the study composed of food technology students, food technology instructors, food entrepreneurs, and local consumers. To determine the sensory characteristics and level of likeness of the product, the gathered data were tabulated using the weighted mean. The findings revealed that the ingredients, tools and equipment are readily available on the market. The proximate analysis result shows that for every 100g of chayote pie, it contains 33.6g of moisture, 1.37g of ash, 5.30g of protein, and 19g of fat. The researcher observed that the Chayote Pie has longer shelf life when stored in a refrigerator compared to that kept at room temperature. Treatment 3 was most preferred by the respondents, and it was aptly described as golden brown, very pleasant, sweet and slightly flaky. However, it was found that there was no significant difference among the three treatments in terms of appearance, aroma, taste and texture. Thus, the study's null hypothesis is accepted. The researcher concluded that the Chayote Pie in different treatments was preferable to the respondents. With the availability of ingredients, tools, equipment, and the respondents' level of likeness of the product, the production of chayote pie is feasible. It is recommended that chayote-related studies may be developed and conducted.

Keywords: Chayote, Pie, Sensory Evaluation, Sensory Characteristics, Level of Likeness

Adsorption of Lead (II) Metal Ion from Aqueous Solutions Using Activated Carbon Made from *Leucaena leucocephala* Bark

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In this study, a detailed examination was made to remove the Pb(II) solution by utilizing activated carbon made from *Leucaena leucocephala* bark. Fourier transform infrared (FTIR) and scanning electron microscope (SEM) spectroscopy was utilized in the characterization of activated carbon. Numerous batch adsorption tests were carried out under various conditions to explore the influences of factors such as pH, contact time and initial lead concentration. The kinetic behavior of the process and equilibrium adsorption isotherms have been studied. As shown by its point of zero charge (PZC) of 8.9, the negatively charged surface of the produced activated carbon was able to rapidly attract cations such as Pb(II) with a pH value less than 8.9. The data obtained indicates that the ideal condition for the absorption of Pb(II) in an aqueous solution was achieved with a pH solution of 4.0, contact period of 100 minutes, and an initial lead concentration of 15 mg/L. Langmuir adsorption isotherm has obtained a Q^2 of 0.9319 having a maximum adsorption capacity of 8.741 mg/g. The kinetic adsorption revealed that the PSO model was well-suited based on the results of the experiment. The study shows that activated carbons generated from *Leucaena leucocephala* bark may function as another adsorbent for the adsorption of lead metal ion.

Keywords: *Leucaena leucocephala*, bark, adsorption, Pb(II) ion

Unveiling the Island Teaching Chronicles: Exploring Post-Pandemic Instruction Through the Eyes of Primary Educators

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Primary teachers in island schools located in the northern part of Iloilo province were preparing to resume physical classroom instruction amidst a multitude of challenges. This phenomenological study investigated the lived experiences of these primary teachers during post-pandemic instruction. Utilizing face-to-face semi-structured interviews, participants shared personal experiences and insights on instructional preparation, assessment strategies, encountered challenges, and coping mechanisms within the post-pandemic instructional environment. Thematic analysis was employed to dissect interview data, revealing various themes and subthemes. Notable themes concerning instructional preparation included the importance of visual and engaging materials, motivation and engagement techniques, effective reading instructional strategies, adaptation to learners' needs, and the integration of technology and multimedia. Furthermore, the study shed light on the production of daily reading materials and the utilization of varied approaches in reading instruction. Assessment strategies emerged as another pivotal theme, with subthemes highlighting the efficacy of assessment methods, adaptation to diverse learner needs, challenges faced, and adaptations made during the pandemic. Challenges spanned various domains such as instructional materials and preparation, student behavior, understanding students' emotions and circumstances, travel logistics, patience, perseverance, and collaboration among colleagues. Coping mechanisms were identified as an important theme, showcasing the resilience and resourcefulness of teachers in overcoming these challenges. The findings emphasized the importance of instructional preparation, assessment strategies, coping mechanisms, and addressing challenges in post-pandemic instruction. Recommendations were provided to support primary teachers in island schools, contributing to a deeper understanding of their experiences. Additionally, these insights offered valuable guidance for future research and interventions aimed at enhancing teaching practices in the post-pandemic instructional landscape.

Keywords: Island school, lived experiences, instructional preparation, coping mechanisms, primary teachers

Maritime Policing: Experiences of Coast Guard Personnel During Covid-19 Pandemic

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This study aimed to explore the lived experiences of Coast Guard Personnel in Maritime Policing during Covid-19 pandemic. Specifically, sought answers to the following sub-problems: experiences of the informants in maritime policing during Covid-19 pandemic, addressing the problems encountered in maritime policing, and aspirations of the informants to improve their performance in maritime policing.

In this study, phenomenological and qualitative approach was used as the primary data collection method using interviews. There were ten (10) coast guard personnel chosen. Four (4) of them were interviewed individually, while the remaining six (6) were included in the Focus Group Discussion (FGD). They were chosen at random but met the minimum qualifications. The research takes place in the Tubigon coast guard sub-station in Tubigon, Bohol, and the Talibon coast guard sub-station in Talibon, Bohol. For the purpose of transcribing the informants' responses, a validated interview guide was utilized in conjunction with a voice recorder. Colaizzi's method, a phenomenological analysis procedure, was used to analyze the informants' responses during the interview.

For the experiences of the informants in maritime policing during covid-19 pandemic, the themes generated were on positive experiences: Skills and Knowledge Enhancement and Favorable Outlook; and negative experiences: Rigors in Decision-Making and Difficulty in Dealing with People. In addressing the problems encountered in maritime policing, the following themes were created: Collaboration with Agencies and Open Communication Lines. For the aspirations of the informants to improve their performance in maritime policing, themes created were: Up-Skill Trainings, Upgraded Equipment and Facility, and Expanded Alliance.

Keywords: coast guard personnel, maritime policing, covid-19 pandemic, phenomenological, lived experiences

Problems Encountered and Suggested Needs Assessment on the Intervention Programs for Children in Conflict with the Law

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Intervention programs for children in conflict with the Law (CICL) offer various transformative and vital services to rebuild children's lives. With the help of the Philippine government laws, the social workers and their co-partners acted on it and ensured that the established goals were implemented and executed well. Somehow, challenges are still met upon the implementation of the programs. Thus, this study determines the problems encountered in implementing community and center-based intervention programs. The study also explored the respondents' suggested needs for the program for further enhancement. The study utilized a descriptive research design with fifty-one (51) social workers and co-partners as the respondents. An adapted survey questionnaire was used to answer the research objectives. The findings of the study identified the serious problems encountered, such as the availability of human resources for PASS and ESS and the residential/physical facilities for PASS, ESS, and HES of the community-based service operations; however, the center-based respondents determined the availability of human resources of PASS and ESS and government financial support of PASS, ESS, and HES as the serious problems. Another problem encountered is the lack of a drop-in center that will serve as a temporary shelter for the CICL. Further, both service providers suggested strengthening the family's involvement in the programs, additional allocated funding, human resources, facilities and equipment, and capability training for the social workers and their co-partners. Results provide a baseline knowledge of what specific actions are needed to continually support various programs and improve offered services for the CICL.

Keywords: Challenges encountered; Children in Conflict with the Law; Intervention Program; Social worker; Suggested needs

Mental Health Program Implementation of Local Universities and Colleges (LUCs) in Zambales: Basis for Action Plan Development

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The local universities and colleges (LUCs) crafted local policies and developed programs on mental health to prioritize the well-being of workers and to adhere to the provisions of RA 11036, otherwise known as the Mental Health Act, and CSC MC 4 s. 2020, otherwise known as the Mental Health Program in the Public Sector. These initiatives are anchored on the behavioral public administration approach. The government's compliance with the mandates of the law signifies good governance.

The study aimed to describe the extent of implementation and effectiveness of mental health programs (MHPs) in LUCs and explore their effects on public service delivery and good governance. It used a mixed-method research design that analyzed quantitative and qualitative data. The research instruments used were validated and pilot-tested. The data were gathered through surveys among 49 school managers and 60 rank-and-file from the three LUCs in Zambales.

Results show that the mental health programs are implemented, as revealed by the weighted mean of 3.21 (SD= 0.66) for Management, the weighted mean of 3.04 (SD=0.72) for Technical Package, the weighted mean of 3.04 (SD=0.83) for partnerships, and the weighted mean of 3.04 (SD=0.77) for communication. Likewise, these MHPs are effective, as revealed in the Effectiveness-weighted mean of 2.97 (SD=0.52) and the Dimensions-weighted mean of 2.95 (SD=0.52).

Highlights of the study's findings revealed that Management and rank-and-file experienced benefits in implementing MHPs. These MHPs strengthen public service and promote productivity. Meanwhile, when it comes to good governance, the MHPs support the workers and promote a positive work culture. The Action Plan serves as the study's output, addressing the areas needing improvement through doable interventions.

Keywords: MH Program Implementation, MH Program Effectiveness, Public Service Delivery, Good Governance

Resilience Behind Bars: A Qualitative Narrative Study on the Coping Strategies of Aging Male Detainees in Santiago City District Jail

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Jail is a tough and difficult place to live in especially for aging persons deprived of liberty awaiting court trial and verdict. Being detained in jail poses numerous challenges particularly a prolonged period of confinement that can adversely affect a person's social, physical, spiritual, and mental well-being, alluding to the status quo of life uncertainties. This study aimed to explore the coping strategies of aging male detainees at Santiago City District Jail. Through a qualitative narrative research design, interviews were conducted with seven aging detainees, purposely selected to represent diverse backgrounds and socio-economic circumstances. The data was analyzed using both inductive and deductive approaches within an integrated theoretical framework. Three main themes emerged from the thematic analysis: difficulties of incarceration, adaptation mechanisms, and determinants of adjustability in detention. Detainees faced multifaceted challenges such as acceptance of their situation, economic hardship, and marital discord. However, they also demonstrated resilience by actively participating in reformation programs, regulating their thoughts, envisioning their futures, and employing religious coping mechanisms. Moreover, the length of stay and religious commitment appeared to have enhanced their adjustability while in detention. Despite the harsh realities of incarceration, these aging male detainees have found ways to adapt and cope. Their strategies underscore the importance of supportive programs from government and non-government organizations and fostering commitment in detention facilities to aid detainees' adjustment. This research provides valuable insights into the lived experiences of aging detainees and the coping strategies they employ, contributing to the broader understanding of resilience in challenging environments.

Keywords: Aging, detainees, coping strategies, resilience

Impact Assessment of Extension Program: A Pivotal Action in Enhancing Community Engagements

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The main purpose of this study is to assess the degree of impact of the 'Adopt-a-Barangay' extension program conducted by a satellite campus viewed in terms of change in the socio-economic conditions of the beneficiaries. It also aims to evaluate the effectiveness of the program in causing positive change in knowledge, attitude, skills, and aspirations (KASA) of beneficiaries, and to collect information that will help enhance processes in community engagements. This study adopts a mixed method, convergent-parallel, multi-level design to draw information from the beneficiaries, the barangay officials, and faculty extensionists. Validated, pilot-tested researcher-made questionnaire, translated to participants' native language, was utilized. Reliability test of items yielded acceptable Cronbach's alpha coefficients ranging from 0.71 to 0.90. Semi-structured, open-ended guide questions were utilized in the focus group discussions and in-depth interviews. Overall, the implemented extension program, provided in the form of livelihood skills training, is moderately effective in causing change in KASA among its beneficiaries. Analysis yielded a significant, moderate impact in the socio-economic conditions of the recipients. Results are attributed to the fact that most of the beneficiaries were unable to translate the gained knowledge to economic activities that generate additional income for the family. Nature of the beneficiary-participants factored in the disparity in the degree of impact per implemented extension project under the program. Deficiency in monitoring and evaluation after the trainings and the lack of partner industries who could provide the trainees short-term experiences constrained the extent of positive impact of extension program on the lives of its beneficiaries.

Keywords: extension, socio-economic, skills training, assessment, evaluation

Experts' Evaluation for Security and Fire Alarm Systems Trainer (SFAST)

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The experts' evaluation of Security Fire Alarm Systems (SFAST) Trainer as an Instructional Innovation in Teaching Electrical Technology along Electrical Installation and maintenance Courses. It was evaluated by the selected experts during Focus Group discussion, documentary analysis and interview. The device was evaluated by Six (6) experts from different fields three (2) of them are DepEd teachers, another two (2) evaluator and Tainer from TESDA, the two (2) instructional material developer and Representative from Research and Development Management Division (RDMD) of the University. These experts' evaluators also act as respondents in answering the questionnaire as to the technical aspect of the device and the pedagogical aspect as a teaching resource material such as manipulative, interactive, and used of local materials.

The evaluation findings suggest that the developed Security and Fire Alarm Systems Trainer serves as an effective instructional device for training individuals in security and fire alarm system. It facilitates knowledge acquisition, skill development, and engagement, while also ensuring safety and cost-effectiveness in the training process. The incorporation of such advanced instructional devices in vocational training programs can contribute significantly to the overall quality of education in the security and fire alarm systems industry. However, continuous updates and improvements to the device based on user feedback are recommended to ensure its continued efficacy and relevance.

Keywords: Security Systems, Fire Alarms, Evaluation, Safety, Trainer

SPA for eJ: Soap Provisions and Allocation for EveryJuan

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The SPA for eJ: Soap Provision and Allocation for everyJuan is a research-based project approved and funded by Commission on Higher Education through its Higher Education Development Fund (CHED-HEDF) and implemented by Ifugao State University (IFSU) as a responsive action and participation to Proclamation No. 922 and RA 11469 Bayanihan to Heal as One Act in the Philippines. The project produced 19,050 antibacterial soaps at 130 grams from the target of 16, 500 significantly to fight local transmission of COVID-19 through handwashing. The production started last July, 2020 at IFSU Potia Campus and distribution ended last October 9, 2020. Proper coordination was done as to allocation and delivery of soaps. The Office of the Mayor was the designated delivery point and responsible for the allocation of the soaps per barangay. Recipients appreciated and thanked IFSU and CHED for the free soaps. The soaps were counted essential need to the municipal and barangay quarantine facilities since number of Locally Stranded Individuals (LSIs) are recorded increasing. There were problems encountered during the implementation of the project but managed responsibly and inspired to the outcome- reduction on the spread of virus.

Keywords: SPA for eJ; antibacterial soaps, COVID-19; provision, allocation

Development of Learner's Guide for Security and Fire Alarm Systems Trainer (SFAST)

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It is important to ensure the safety of everyone in your home or workplace. When it comes to safety, you cannot afford to take shortcuts, and this is a significant concern. A security and fire detection system are necessary even if you live alone. The importance of fire and security alarm systems goes beyond what can be put into words. A couple of seconds can spell the difference between life and death when you are dealing with a fire. It can make a difference whether you can get the people you love out of the house if the system is in place, and it can help you get out safely.

The Security and Fire Alarm System Trainer consisted of five information sheets and ten learning activities. Each Learning Activity contains instructions, objectives, procedures and working plan/diagram. Before the students should perform the instructions, they should read first the information sheets provided in the Learners Guide. The teacher would assess the competence of the students. He will check if they have acquired the necessary knowledge to perform the skill portion of the learning activity. The SFAST was tested using the learning activities develop and it was found out that the Trainer is functional by performing all the learning activities in the Learners Guide of Security and Fire Alarm System Trainer. The trainers follow a structured learning progression, starting with basic concepts and gradually introducing more complex scenarios. This approach helps learners build a solid foundation before moving on to advanced topics, ensuring effective learning outcomes.

Keywords: Security Systems, Fire Alarms, Learner's Guide, Safety, Trainer

An Enhancement of P. Yildirim and D. Birant's K-Linkage Method Applied to Dendrograms

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This study introduces an enhancement of the K-Linkage method for agglomerative hierarchical clustering, addressing the limitations of traditional linkage methods in accurately reflecting complex data relationships. Traditional linkage criteria, including single, complete, and average linkages, often produce suboptimal clustering results due to their simplistic approach to measuring cluster distances. The enhanced K-Linkage method, building on the foundation laid by P. Yildirim and D. Birant, proposes a nuanced strategy by focusing on the k-closest (k-min) and k-farthest (k-max) pairs of observations between clusters. This method provides a more comprehensive evaluation of cluster similarity, thereby accommodating diverse data structures and mitigating outlier influence.

The effectiveness of this enhanced method was tested on benchmark datasets, notably the IRIS dataset, comparing it against conventional linkage criteria. The assessment was based on cluster quality metrics like the Davies-Bouldin index, cophenetic correlation coefficient, and silhouette scores. Results indicated a notable improvement in clustering quality with the enhanced K-Linkage method, as evidenced by better alignment with the inherent data grouping, higher silhouette scores, and lower Davies-Bouldin indices. Additionally, the implementation of the Connectivity-Based Outlier Factor (COF) for outlier detection further refined the clustering accuracy.

In summary, the enhanced K-Linkage method significantly outperforms traditional linkage criteria by providing a detailed and accurate measure of cluster distances, leading to improved clustering outcomes. This advancement offers a more meaningful analysis of complex datasets, potentially benefiting various research and application fields. The study highlights the importance of developing refined clustering algorithms to extract deeper insights from data, paving the way for future innovations in unsupervised machine learning.

Keywords: Agglomerative Hierarchical Clustering, K-Linkage, Dendrogram, Connectivity-Based Outlier Factor, Cluster Quality.

Design and Evaluation of Security and Fire Alarm Systems Trainer (SFAST)

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To provide a collection of experiences to aid the students and trainers learning growth experience, this study was designed and evaluated the Security and Fire Alarm Systems Trainer as an as an instructional device and a specialized training tool designed to simulate and teach the operation, installation, maintenance, and troubleshooting of security and fire alarm systems. The trainer typically consists of a physical setup that replicates a real-world security and fire alarm system, including various components such as control panels, detectors, sensors, annunciators, and other related equipment. It may also include interactive interfaces to enhance the learning experience. Specifically, it sought answers based on the following objectives: First, the SFAST developed as an instructional innovation in teaching Electrical technology and Engineering courses with the Trainer, and Learning Guide and second the pedagogical principles applied in dealing with the lessons using the manual.

The study used the Descriptive and the Design methods of Research. The Design method was used in the construction of a functional prototype, designed specifically to serve as systems training for students' simulation exercises. Descriptive method with the use of a survey instrument in the analysis of the data gathered. The analysis of data revealed the findings that the Security and Fire Alarm Systems Trainer provides an effective platform for students and professionals to acquire and enhance their knowledge and skills in the security and fire safety domain. The use of its Learners guide in learning the concept of the pedagogical principles and approaches applied in this study aided the researchers based from the findings and conclusions, the following recommendations were offered: The Security and Fire Alarm Systems Trainer will be a comprehensive training system designed to provide learners with a realistic and immersive experience in understanding, installing, and troubleshooting security and fire alarm systems. It will incorporate a combination of theoretical knowledge, practical exercises, and simulated scenarios to ensure learners gain a deep understanding of the subject matter.

Keywords: Security Systems, Fire Alarms, Safety, Trainer, Technical Skills

Dried Fish Consumption Habits and Histamine Levels: Insights from Northern Iloilo, Philippines

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Dried fish is a cost-effective, high-quality protein source for the impoverished population, notably in near-shore Filipino communities. However, a prevalent livelihood activity, dried salted fish production, faces challenges due to susceptibility to contaminations, potentially compromising product quality and safety. Histamine, a crucial biochemical property, serves as an indicator of quality and safety in fish products. This study focuses on determining the histamine content in commonly consumed dried fish in Northern Iloilo, utilizing a descriptive research design. A Food Frequency Questionnaire gathered consumer responses, and dried fish samples from major sources were analyzed in the laboratory. The study identified twenty-five commonly consumed dried fish in the region, with top commodities including tabagak, baringon, danggit, sap sap, and Dalian. Results indicated that some samples exceeded the FAO's regulatory limit of 200 mg/kg for histamine content. Notably, "baringon" from Carles and "tabagak" and "baringon" from Concepcion exceeded the limit, emphasizing the need for quality control in dried fish production.

Keywords: dried fish, consumers, histamine, food safety, Iloilo Philippines

Gauging the Employability of Graduates of the Seafarer Rating Course Towards Enhancing the External Productivity of Ifugao State University

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The effectiveness of an academic program hinges on the caliber of its graduates. To assess this, the researcher conducted a tracer study among Seafarer Rating Course (SRC) graduates at Ifugao State University (2012 -2019). This investigation encompassed graduate employability, faculty assessment, curriculum evaluation, and facility analysis. This study employed a quantitative descriptive research design, utilizing a survey questionnaire as the primary data collection method. A total of 91 Seafarer Rating Course (SRC) graduates from 2012 to 2019 participated as respondents. Results found that at least 50% of the respondents are employed. However, only three (3) individuals find themselves in maritime-related jobs. The study revealed also that among the three factors contributing to the employability of SRC graduates, effective relationships were rated very satisfactory rating for all its components. Graduates consistently rated the importance of interpersonal relationships as a factor in career advancement. While the other two factors, applied knowledge and workplace skills, were mostly rated as satisfactory. On the other hand, graduates encountered challenges in seeking employment such as insufficient hands-on experience in terms of the curriculum, lack of influential support, and other applicants are more qualified compared to those who only completed a two-year SRC course. With this, the recommendations include IFSU investing more in basic facilities for the SRC program and hiring more faculty. Lastly, a framework is proposed outlining the activities covering the facilities, curriculum, and faculty, to be undertaken to enhance the SRC program for its TESDA accreditation that will eventually improve the employability of its graduates.

Keywords: graduates, employability, external productivity

Students' Satisfaction on Blended Learning During the New Normal: Input to Curriculum Review

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Blended learning has been popular during this new normal. It is a mixture of online and face-to-face mode of learning. This study assessed the level of students' satisfaction in blended learning and its effect to the academic performance of college freshmen. A concoction of quantitative and qualitative approach was used in this study. In quantitative approach, descriptive-correlation design was employed. Sixty students enrolled in Mathematics in the Modern World of Bachelor of Science in Fisheries were respondents of the study. Findings showed 62 percent are male, 93 percent are single, most or 45 percent have available internet connection but sometimes stable, 78 percent use mobile data connection and smartphone found to be the rank 1 available gadget at home; the mean grade of students is 85.88 with standard deviation of 5.5; the over-all satisfaction level of students with the used of blended is 4.31 describes very much satisfied. The grade of students differ when grouped according to sex. Sex and classroom interaction significantly associated in the improvement of students performance in mathematics. It is concluded that teaching and learning process at this new normal is very challenging however all teachers need to take the challenge of teaching in order to achieve the maximum satisfaction and optimum academic performance as well. Blended learning has been difficult to implement but once instruction is done with all-out interaction where every learner are encourage to raise their doubts and clarified by teacher, where instructions are effective, instructors welcome all members to be comfortable during discussions, where there is observance of proper discipline and when the gadgets being used are in good technical condition. If students have sufficient and advanced technology as well as robust internet access, the blended learning system would have been an effective learning and teaching approach.

Keywords: Blended learning, online learning, face-to-face, interaction, course management.

Detection and Characterization of Microplastics in Slipper-cupped Oyster (*Crassostrea iredalie*) and Corneous ark (*Scapharca cornea*)

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Microplastics are a result of the breakdown of large plastic debris during the transport process and are generally less than 5mm. Bivalves such as oyster and cockles are susceptible to ingesting microplastics and are essential to coastal ecosystem. However, published studies of microplastic contamination in marine bivalves are scarce at this moment. Thus, this descriptive research was conducted to detect and characterize the presence of microplastics in two bivalves specifically the Slipper-cupped oyster *Crassostrea iredalei* and Corneous Ark *Scapharca cornea*. This study employed both stereoscopic microscopy and FTIR analyses to identify and characterize the microplastic forms and polymer types, respectively. While the relationship between the presence of microplastics in non-burrowing and burrowing bivalves and sampling periods was determined using the Pearson Chi-Square Test. The result showed that fragments were dominantly observed in both bivalves, followed by fibers and the least pellet/beads. Moreover, FTIR spectroscopy identified three microplastic polymers – polyethylene (PE), polyester, and polystyrene (PS) identified in Corneous ark and two polymer types – PE and PS were present in Slipper-cupped oyster. The statistical analyses revealed that there is no relationship between the presence of microplastics in two bivalves, and the sampling period due to the constant and homogenous detected microplastics between the bivalves tested from December 2019 – February 2020. Therefore, there was no safe marine compartment for bivalves whether it burrowed or not, microplastic pollution was still present. The conclusive evidence of microplastics in this study contributes to the assessment of microplastic contamination in bivalves used as seafood for human consumption.

Keywords: microplastics, bivalves, detection, characterization, marine compartment

An Enhancement of GloVe Algorithm for Extractive Text Summarization of News Articles

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This thesis addresses the limitations of the GloVe (Global Vectors for Word Representation) algorithm in the context of extractive text summarization, focusing on mitigating sparsity issues and enhancing contextual representation. The study begins by identifying three key challenges faced by GloVe: sparsity issues impacting representation accuracy, high computational demands, and difficulties in capturing contextual semantics. To overcome these challenges, the thesis proposes a novel enhancement approach.

Firstly, the study introduces methods to mitigate sparsity issues in GloVe embeddings. By focusing on handling out-of-vocabulary words and improving the representation of rare terms, the algorithm aims to provide a more comprehensive representation of the entire corpus. Techniques such as subword embeddings and adaptive learning rates are employed to address this challenge effectively.

Secondly, to address the computational intensity and memory requirements of GloVe, the thesis incorporates dimensionality reduction techniques, specifically t-distributed Stochastic Neighbor Embedding (t-SNE). By reducing the dimensionality of the word embeddings, the algorithm achieves significant improvements in processing speed and memory efficiency without sacrificing summarization quality.

Finally, the study enhances the contextual representation learned by GloVe for text summarization purposes. By weighing rare words and giving them better representation, the algorithm improves its ability to capture contextual semantics, thereby enhancing the quality of extractive text summarization.

Through a series of experiments and evaluations using real-world news article datasets, the proposed enhancements are thoroughly validated. The results demonstrate notable improvements in the summarization performance of the enhanced GloVe algorithm compared to traditional GloVe implementations. The findings of this thesis contribute to advancing the state-of-the-art in extractive text summarization techniques and provide valuable insights for future research in natural language processing and machine learning.

Keywords: Natural Language Processing, Extractive Text Summarization, GloVe Algorithm, Word Embeddings, News Articles

The Role of Access to Entrepreneurial Finance on the Perceived Financial Performance of Small Enterprises in Metro Manila, Philippines

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The contribution of small enterprises is widely recognized in the overall economic development of a nation. However, the lack of funding and restricted access to credit may impede growth, innovation, and entrepreneurship of small businesses. In the Philippines, small enterprises are those businesses with asset size ranging from over P3 million pesos to P15 million pesos or enterprises with 10 to 99 employees. This paper explores the role of access to entrepreneurial finance options, i.e., equity funding, debt funding, funding from informal investors, funding from venture capitalists, and private lending, on the perceived financial performance measured in terms of company profitability, sales, profit growth, increase in market share, and innovation, of 286 small enterprises in Metro Manila, Philippines. Using regression analyses, the study showed that equity funding positively influences company profitability, turnover or sales, profit growth, and innovation. Funding from venture capitalists significantly influences on all dimensions of perceived financial performance except sales. Debt funding, funding from informal investors, and private lending did not exhibit any statistical significance on perceived financial performance. The optimal regression model shows that equity funding and funding from venture capitalists positively influenced the financial performance of small enterprises. However, debt funding, funding from informal investors, and private lending did not exhibit any significant influence on the perceived financial performance of small enterprises. The key contribution of this study is the identification of financing structure for perceived financial performance of small enterprises.

Keywords: Business Financing Options, Access to Entrepreneurial Finance, Perceived Financial Performance, Small Enterprises, Metro Manil

Comparative Analysis of Mechanical and Physicochemical Properties of Cellulose Derivative Fillers in Arrowroot Starch-Based Bioplastic Films

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In the modern world, plastic pollution has become a serious problem that impacts both the environment and human health. Uncontrolled plastic garbage disposal has led to serious ecological imbalances, including landfills and ocean pollution. Starch-based bioplastics have emerged as a promising alternative to petroleum-based plastics due to their biodegradability and renewability. Despite their potential, the mechanical properties of starch-based bioplastics are inferior but can be improved by using new formulations to overcome these limitations. Arrowroot (*Maranta Arundinacea* Linn) contains a high content of amylose and the starch extracted from it can be blended, plasticized with other polymers, and reinforced fibers to improve its properties as a bioplastic. The incorporation of natural fibers such as cellulose or chitosan can improve the mechanical properties of the bioplastic, thus, the researchers used carboxymethyl cellulose (CMC) and microcrystalline cellulose (MCC) to test their firming and compacting properties when added to the starch. On the other hand, the researchers utilized glycerol as a plasticizer to improve the flexibility and ductility of the bioplastic. The samples were subjected to mechanical analysis (tensile strength test), physicochemical analysis (moisture content test, water absorption test using water and alcohol as a separate test), biodegradability analysis, and thermal analysis. Upon characterization and subject to various methods of analysis, CMC-filled bioplastics were found to have the best quality films by having the highest tensile strength value, absorbing the least moisture, least solubility in water and ethanol, and most stable biodegradation values. MCC-filled bioplastics, on the other hand, were not found to be suitable for use because of the water insoluble nature of the filler.

Keywords: Bioplastics, Mechanical Properties, Physicochemical Properties, Plasticizers, Tensile Strength

Mapping Out the Licensure Examination for Fisheries Graduates

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One of the factors that contributes to the status of an educational institution is the quality of its former students and faculty members. The purpose of this research was to track down former students who had completed their Bachelor of Science in Fisheries degrees at the Cagayan State University in Aparri. During the process of carrying out the study, the research method known as descriptive analysis was put into practice. A good example of the descriptive method of research would be a fact finding study that offered an acceptable and accurate interpretation of the data. The graduate students who took part in the survey were under the notion that the instructional methods utilized by the faculty involved the application of pertinent learning strategies such as positive attitude and critical thinking. The respondents believe that practicing and reviewing the four subject areas are the most important steps in the process of getting ready for the license examination. Those who had already attended graduate school among the respondents believed that a general education curriculum ought to be regarded essential for passing the LEFT. On the other hand, they argued that the major courses should be seen as having the utmost significance, while NSTP and PE should be regarded as having some significance. Respondents were under the assumption that they were expected to do seatwork, quizzes, major examinations, recitations, assignments, oral and written reports, and portfolios in order to pass the course.

Keyword: Licensure examination, mapping out, learning strategies, instructional methods

Teachers' and Students' Perceptions on the Effectiveness of ICT Integration in Teaching-Learning Process

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Integrating Information and Communication Technology (ICT) enables educators to modernize traditional teaching methods to align with the increasing demand for technology-driven coaching and advanced learning resources. This study aims to investigate the effectiveness of ICT integration in enhancing the teaching and learning experience by examining the perceptions of both teachers and students in the classroom setting.

The researcher employed a quantitative methodology, developing a survey questionnaire administered to targeted respondents across Ifugao State University campuses. The study included 166 education students and 56 faculty members as participants. Data for this quantitative analysis were examined using both descriptive and inferential statistics.

The study revealed a consensus among teachers and students regarding the effectiveness of ICT integration in the teaching and learning process. Results demonstrated that ICT integration enhances teaching quality, improves learning materials, and fosters student creativity and imagination, ultimately leading to more effective learning and teaching experiences. Based on these findings, it is recommended that teachers undergo a digital literacy assessment followed by hands-on activities to support the objectives of the "No Teacher Left Behind on ICT Integration" program. Additionally, for students to fully benefit from ICT in learning, conducting action research among students to identify and address challenges associated with ICT use in teaching and learning is suggested.

Keywords: ICT Integration, perceptions, effectiveness, teaching-learning process

The Relevance of the Existing Career Placement Services of Apayao State College

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The career and placement services rendered by Apayao State College are embedded in the guidance and counseling office. Since it is embedded, the said program is somewhat not given more time and budget considering the fact that ASC do not have yet a permanent guidance counselor to seat in the office. With this scenario, the College should allocate budget for it for the services to be well implemented. This research study was conducted to assessed the existing Career and Placement (CAP) services of Apayao State College. The researcher employed the mixed method approach in which the qualitative and quantitative research designs. The findings demonstrate that the stakeholders perceive the existing Career and Placement Program at Apayao State College (ASC) to be highly relevant and effective. The positive perception reflects stakeholders' recognition of the program's alignment with their expectations, particularly in assisting students in career exploration, job placement, document preparation, and providing access to career-related information. Moreover, stakeholders value the program's counseling support, establishment of job linkages, and alumni tracking, highlighting its success in facilitating job placements for graduates. It is recommended that Apayao State College (ASC) continue to invest in and expand its Career and Placement program with a focus on enhancing career exploration seminars and skill development workshops.

Keywords: Career placement services

Factors and Obstacles Affecting English Oral Communication Skills Among the Grade 11 Senior High School Students of Apayao State College - Conner Campus SY 2022-2023

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This study was conducted to determine the factors that affects the English oral communication skills of Grade 11 senior high students of Apayao State College - Conner Campus. Qualitative and descriptive design was used. Using total population sampling, this study identified 100 Grade 11 students as respondents. Frequency, percentage, ranking, weighted mean, Parson's r Moment Correlation, T-test and One-way Analysis of was used to analyze the data gathered. Results revealed that majority of the respondents are male composed 32% of the population while female comprised the 68%. Most of the respondents are at the age of 16 years old composed of 66% of the population and majority of the respondents are in the STEM academic strand with 85% of the overall respondents. Furthermore, results yielded that teacher factors and student factors are the top factors that is responsible for the development of their oral communication skills with the mean of 3.64 and 3.48 that was interpreted as much agree. Also, results showed that anxiety was the top most identified obstacles encountered by the respondents that affects the development of their oral communication skills with a mean of 3.71. It was also found out that there was a significant difference between the factors that affects the English oral communication of students when group according to sex and strand. There was also a significant difference among the factors affecting the English oral communication skills among the students along curriculum factors, teacher factors, and student factors and lastly, there was a significant relationship between the identified factors and the encountered obstacles on the English Communication skills of the Grade 11 students.

Keywords: Factors, English oral communication

Addressing the Quality Assurance Divide: A Mixed-Methods Exploration of Faculty-Administrator Perceptions in a Philippine University

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Internal quality assurance is crucial for higher education institutions (HEIs). This study explores faculty and administrator perceptions of these initiatives at a Philippine university, aiming to contribute to the limited understanding of perception gaps in this context. Understanding this gap is critical for improving quality assurance effectiveness. A mixed-methods approach was employed. A survey using a Likert scale (n=229) assessed perceptions of administrative support, human resources, and documentation for quality assurance initiatives. Semi-structured focus group discussions explored challenges faced by HEIs. Accreditation and CHED Recognition were the primary quality assurance initiatives. Administrators and staff expressed high satisfaction with these initiatives, while faculty satisfaction was moderate. This perception gap suggests potential challenges in implementing quality assurance. The varying perceptions highlight the need for improved communication and collaboration between faculty and administrators regarding quality assurance practices. Addressing this gap may be crucial for ensuring the effectiveness of quality assurance efforts. Existing literature on faculty-administration perception gaps in quality assurance, particularly within the Philippine higher education context, is limited. Additionally, the specific aspects of quality assurance initiatives where these gaps emerge require further exploration. This study identifies a faculty-administration perception gap regarding quality assurance at a Philippine university, potentially contributing to a more nuanced understanding of this issue in the Philippine context.

Key Words: Quality Assurance, Perception Gap, Higher Education Institutions, Faculty, Administration

Challenges of Community-based Forest Management: The Case of Laur, Nueva Ecija, Philippines

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Forests are critical ecosystems, providing essential ecological services like air and water purification, climate regulation, and resources that underpin human societies. In the Philippines, they are recognized as a national resource base for sustainable development. Forest management has transitioned from centralized governance to a more participatory approach, with Community-Based Forest Management (CBFM) programs empowering local communities. This study aimed to identify challenges and strategies associated with CBFM in Laur, Nueva Ecija, Philippines. Data collection employed qualitative analysis guided by Colaizzi's method to identify key themes. The research revealed several challenges faced by CBFM in the area, including forest fires, limited community member participation, and small-scale illegal logging. Conversely, the study also identified successful forest management strategies implemented by the people's organization, such as reforestation initiatives, fire management protocols, and active community engagement in monitoring and enforcement activities. These findings can inform policymakers by providing a baseline for developing and strengthening CBFM policies and action plans. The results hold promise for informing sustainable forest management practices not only in the Philippines but potentially across other countries implementing similar programs.

Keywords: Colaizzi's method; Community-based; Forest resources management; Government support; Small-scale illegal logging.

Community Health Policy: Zero Open Defecation Implementation in Selected Barangays of Bauang, La Union

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The study is about the implementation of the Zero Open Defecation (ZOD) Ordinance in Brgy. Pugo, Brgy. Sta. Monica, and Brgy. Santiago in Bauang, La Union. It aims to examine the level of awareness of the households and the level of implementation as perceived by the households, as well as the challenges encountered in its enforcement. An explanatory sequential design was used, through a survey questionnaire and interview to accumulate the needed data. It was conducted in the Municipality of Bauang, La Union, with 325 respondents and 10 key informants. The households have slight awareness on the provisions of the ordinance; the households perceived the extent of the policy's implementation as slightly implemented; inadequate regulatory actions and pervasive cultural and social norms were the general themes obtained; and the proposed information education VLOG and pamphlet can contribute to inform and encourage the residents to engage for the betterment of the implementation of ZOD Ordinance.

Keywords: Community Health Policy, Zero Open Defecation, policy challenges, policy implementation, community health

Servicescape: A Manifestation for Customer Loyalty of Restaurants in Batangas Province

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This study is intended to assess the restaurants' capability to gain customer loyalty. Further, it also aimed to determine the factors that manifest customer loyalty based on servicescape. A relationship between a business profile and manifestation of servicescape for customer loyalty was presented.

In this study, the descriptive survey method was used with 325 restaurants, which derived the sample size of 125 respondent-managers through online G-Power self-calculator. It applied the stratified random sampling to determine the size allocated for Batangas, Lipa, and Tanauan cities. It also used the stratified proportional allocation to identify the scope of restaurants classified as casual dining, fast-casual, and quick service for each city. A questionnaire was the main instrument used in gathering data and supplemented by an interview with the use of an interview guide. The statistical tools applied were frequency, weighted mean, multiple regression, Cronbach Alpha (α), and four-point scale. The study found that most restaurants have an asset size of 10,000,001 – 100,000,000, employed 10-49 staff, and earned an average daily sale of 50,000 and below, and operating three to five years and belong to quick-service restaurants which located in Lipa City. In terms of manifestation of servicescape for customer loyalty, it was generally assessed by managers to a great extent and found dependent on the asset size and number of employees. Likewise, a consideration of asset size should focus on state-of-the-art interiors and exteriors to create a welcoming ambiance and atmosphere to every customer that must be kept by sizeable employees are suggested.

Keywords: servicescape, manifestation, customer loyalty, restaurant

Exploring Structural Nexus on Factors Contributing to Technostress Among Science Teachers in Higher Education: Informing Instructional Revitalization Strategies

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This study explores the intricate domain of technostress among science educators in higher education institutions, utilizing Structural Equation Modeling (SEM) to unveil the influential factors affecting their technostress levels. Three central determinants emerge. First, possessing Technological Pedagogical Content Knowledge (TPACK) significantly reduces technostress. Higher TPACK levels correlate with reduced technostress, emphasizing the need to enhance educators' competency in technology integration. Second, teachers' Computer Self-Efficacy lessens technostress. Strong self-efficacy lowers the likelihood of technostress by boosting confidence in navigating technology challenges. Comprehensive support from educational institutions, both administratively and technically, is the third determinant. Adequate support reduces technostress, empowering educators to integrate technology seamlessly. In conclusion, this research sheds light on technostress in science educators. It underscores the importance of enhancing TPACK and computer self-efficacy, along with the critical role of comprehensive institutional support in reducing technostress. These insights have implications for technology integration in education, creating a less stressful and more productive environment.

Keywords: TPACK, PLS-SEM, technostress, school support, science educators

Application of LabVIEW and Arduino Control System Computations and PID Simulation

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This study focuses on the integration of LabVIEW and Arduino for control system computations and simulations, tailored explicitly for the feedback and control systems course in Philippine electronics engineering. Emphasizing the crucial role of control systems in technological advancements, the research explores the design and development of a LabVIEW-interfaced Arduino platform. The platform covers essential numerical computations and PID controller simulations, aligning with educational objectives. The hardware unit, featuring components like Arduino Mega and sensors, is efficiently designed with a printed circuit board. The LabVIEW-created graphical user interface facilitates seamless communication, enabling real-time control and visualization. Simulated results validate the accuracy of control system computations and showcase successful PID simulations for beam balancers and various motors.

Keywords: LabVIEW, Arduino, Control System, PID, Numerical Computation



IN-PERSON POSTER PRESENTATION

Investigating the Potential of Dragon Fruit Peels (DFP) Biochar as a Lead Sequestering Agent

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The increase in heavy metal pollution in local areas such as Iloilo, Philippines, has contributed to various problems in human life. Utilization of water with high levels of heavy metals may accumulate in the human body, leading to adverse health implications. Adsorbents derived from plant waste have become rising adsorbents due to their capability to remove heavy metal ions from wastewater. Dragon Fruit Peels (DFP) were determined to have metal sorption capabilities. It has been used to sequester heavy metals such as lead, cadmium, chromium, and other heavy metals and was determined to be an effective adsorbent. A popular modification of plant adsorbents is the conversion of biomass into biochar. Its potential as a biochar material and efficiency in sequestering heavy metals warrants an investigation. This study examines the potential of DFP-derived biochar as a lead sequestering agent. Through pyrolysis, the study produced DFP-derived biochar at 500, 650, and 800°C. This study utilized Fourier Transform Infrared Spectroscopy and Ash Content analysis to characterize the produced biochars based on their functional groups and ash content. The change in pyrolysis temperature affected the characteristics of the material. Jar tests showed that all DFP-derived biochars pyrolyzed at all temperatures can significantly absorb lead from the simulated wastewater with DFB500 having the highest percent removal of lead and is associated with the high presence of oxygen-containing functional groups and relatively low ash content. The results imply that the capabilities of DFP-derived biochar can help reduce heavy metal pollution in the environment.

Keywords: Dragon Fruit Peels, Biochar, Pyrolysis Temperature, Characterization, Lead Sequestration

Evaluating the Antibiofilm Activity of the Methanol Crude Extracts of *Ulva reticulata* (Ribbon Sea lettuce) Sourced from Two Locations within Western Visayas

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Bacterial biofilms remain a serious health concern due to their multicellular structures contributing to the antimicrobial resistance of human pathogens. In response, various antibiofilm alternatives are being investigated. The seaweed *Ulva reticulata* (ribbon sea lettuce) exhibits bioactivity due to the phytochemicals and secondary metabolites the algae produces as a defensive action against environmental stress. These affect bacterial regulatory mechanisms and disrupt the initial biofilm attachment to surfaces. However, such bioactivity may vary depending on environmental conditions inducing the production of phytochemicals. Thus, the present study investigated the antibiofilm consistency of *U. reticulata* methanolic extracts as a result of geographic variation. The samples were sourced from two locations in Western Visayas: Tiabas, San Dionisio (Site A), and Badiango Island, Concepcion (Site B). Notably, environmental conditions measured on-site during collection presented higher nitrate content and turbidity in Site B with high amounts of waste observed in the site. Collected samples were then extracted with methanol, tested for their minimum inhibitory concentration, and subjected to the crystal violet assay to determine their antibiofilm inhibition and eradication activity. Extracts from both Site A and Site B presented significant antibiofilm activity with inhibition percentages at $90.34\% \pm 0.99\%$ and $91.91\% \pm 2.26\%$, respectively. The eradication percentages from each site were also significant at $90.77\% \pm 1.94\%$ and $87.63\% \pm 1.47\%$, respectively. Both extracts as well tested positive for alkaloids and tannins, which are known to prevent biofilm adhesion and increase antibiotic penetration. The study presents that the methanolic extract of *U. reticulata* provides significant antibiofilm activity against *S. aureus*, which remains consistent despite sourcing the seaweed samples from two geographic locations. For nuanced differences, further research is necessary to observe the consistency of antibiofilm activity between several sites while monitoring site conditions over an extended period.

Keywords: Antibiofilm, Seaweed extracts, *Ulva reticulata*, *Staphylococcus aureus*, Consistency

The background of the image consists of a series of wavy, horizontal lines that create a sense of movement. The color of these lines transitions from a deep blue at the top to a bright yellow at the bottom. In the center of the image, there is a horizontal, rounded rectangular box with a teal or light blue gradient. Inside this box, the words "ONLINE PRESENTATION" are written in a bold, white, sans-serif font, stacked in two lines.

ONLINE PRESENTATION

Currently Available Point-Of-Care Devices for Kidney Function Testing

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Testing performed inside the laboratory and following the traditional stages of pre-examination, examination, and post-examination remains to be the standard procedure for measuring different analytes crucial for diagnosis and treatment of patients. However, with the evolution of healthcare system, the need for a more robust and rapid method of testing arose giving birth to point-of-care testing (POCT). POCT allows for rapid processing of specimens thereby having shorter turnaround time to provide guide for clinicians in their decision making. POCT has been widely applied to measure different analytes and assess different conditions, one of which is kidney function. This study aims to assess and to review the application of Point-of-Care Testing and the different POCT devices for kidney function testing in order to determine the current standing of Point-of-Care Testing in terms of kidney function testing. Eight POCT devices were analyzed which included those used to measure estimated glomerular filtration rate (Nova StatSensor, Abbott iSTAT), nonprotein nitrogenous compounds (epoc Blood Analysis System, Radiometer ABL90 FLEX PLUS), electrolytes (GEM Premier ChemSTAT Analyzer, POC-K⁺), and urine specific gravity and pH (Clinitek Dipstick Analyzer, Hipee S2 Dipstick Analyzer) – all of which are utilized traditionally to assess renal function. The study concluded that while there are some inherent bias and limitations present in these analyzers, they remain as useful sources of data which could serve as basis for clinical decisions. Most of their results also do not significantly differ from the results produced by routine automated machines used in laboratories, thereby cementing their reliability in healthcare practices.

Keywords: Kidney function test, point-of-care, analyzers

Livelihood Vulnerability Index to the Hazards of Climate Change of Selected Coastal Communities in Virac, Catanduanes

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The geographical location of Catanduanes makes it known as the island of howling winds. As the years passed, typhoons came to the island more frequently and with higher magnitudes due to climate change. With this phenomenon, Catandunganons faced risks not just for their lives but for their sources of income. Mixed methods of research were used through a community-participatory approach and non-probability sampling method using a purposive sample to include participants who represent a wide range of experiences and perspectives related to the vulnerability, exposure, and sensitivity of the communities for the past ten years (October 2010- October 2020). Findings revealed that selected coastal communities in Virac experienced typhoons very frequently for the past ten years; Magnesia del Norte was considered highly sensitive in terms of biophysical and socioeconomic aspects while communities such as Magnesia del Sur, Marilima, and Batag were considered moderately sensitive. The coastal communities of Magnesia del Norte and Marilima have an extremely high adaptive capacity. This implies that these communities can easily adapt to the hazards of climate change; Magnesia del Norte and Marilima were the coastal communities that were extremely vulnerable to the hazards of climate change. It was further recommended that selected coastal communities be considered in providing sustainable livelihood programs since they are extremely vulnerable to the hazards of climate change. Furthermore, coastal communities must also be engaged in disaster-risk reduction training to raise their awareness of responding to a disaster; bottom to top management be adopted so that communities can participate in planning, design, implementation, monitoring, and evaluation of disaster risk activities as they play key roles in identifying the risks they may face during a disaster, and enhance the capacities of the local communities to lessen the vulnerability.

Keywords: climate change, livelihood vulnerability, livelihood vulnerability index, resiliency, sustainability

Effects of Multimedia-Assisted Instruction in Teaching Manipulative Movement Skills in Physical Education

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The purpose of this study was to examine the efficacy of using multimedia-assisted instruction for teaching and demonstrating manipulative movement skills to first-year students in physical education, as well as the students' attitudes about this method of learning. A quasi-experimental design was utilized. Sixty (60) students from two intact, heterogeneous classes participated in the study. A validated researcher-made performance and attitude questionnaire instrument was used to collect data. The data were processed using descriptive statistics, including mean, median, standard deviation, and analysis of covariance (ANCOVA). Findings revealed that students' manipulative movement skills were initially deemed "poor" under the demonstration method, both pre and post-test. Wherein the performance level of students exposed to the multimedia-assisted instruction method was interpreted as poor during the pretest and satisfactory during the posttest. The data revealed that the students exposed to the multimedia method have a satisfactory level of manipulative movement skills. After controlling for pre-test scores, a notable statistical difference emerged between post-test results of students under demonstration versus multimedia-assisted instruction. However, exposure to MAI led to a shift towards a "positive" attitude post-instruction, indicating a significant enhancement in attitude towards physical education. Conclusively, the integration of multimedia in physical education classrooms emerges as an efficient strategy for augmenting students' manipulative movement abilities. It not only improves performance but also fosters a positive attitude towards physical education. Therefore, incorporating multimedia-assisted instruction stands as a valuable pedagogical approach in enhancing the learning experience and outcomes in physical education settings.

Keywords: manipulative movement skills, multimedia-assisted instruction, demonstration method

Evaluation of ACE-V Methodology in Fingerprint and Questioned Document Examination Process

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ACE-V methodology plays a pivotal role in forensic science examination by ensuring accuracy, reliability, and scientific validity. By adhering to this standardized approach, examinations can contribute valuable results that upholds ethical standards in promoting justice. This descriptive-correlational study aimed to assess the respondents' orientation and utilization of ACE-V Methodology in Fingerprint and Questioned Document examination process. The respondents were the purposively selected 30 criminology instructors working at Higher Education Institutions (HEI) offering criminology program for the year 2022. Data were obtained using a researcher-made instrument, validated and pilot-tested for reliability. Results revealed that respondents from any HEI exhibited Basic Orientation of the methodology in both the Fingerprint and Questioned Document Examination. Meanwhile, as to the length of teaching experience, the same level of basic orientation has been yielded but only varied as to the result in fingerprint, wherein those who has five years below experience perceived to have advance orientation. In the utilization of ACE-V methodology, results indicated that it is Highly Utilized in the examination of Fingerprint and Questioned Document, however it is Moderately Utilized by the respondents from State Universities and Colleges and those who have more than 5 years teaching experience. As to the inferential statistics, no significant differences have been noted on the respondents' orientation in both fields, but a significant difference manifested in the utilization of the methodology in relation to their length of teaching experience. Further, the results also revealed that a positive correlation existed in the relationship of orientation and utilization of ACE-V methodology in fingerprint and questioned document examination process. In the end, this study encourages commencement of an updated and homogeneous instructional manual for ACE-V methodology meant for each field to develop the advance orientation for each instructor handling the subjects and how to properly utilize it.

Keywords: ACE-V Methodology, Fingerprint, Questioned Document, Orientation, Utilization

Optimizing Cacao Milk Chocolate: Enhancing Flavor and Nutritional Value Through the Use of Honey as a Natural Sweetener

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This study explores the sensory attributes and general acceptability of cacao milk chocolate infused with honey, utilizing resources abundant in the Municipality of Conner, Apayao. Through sensory evaluations, including texture and flavor analyses, participants assessed different treatments, ranging from control to various honey-enriched formulations. Results revealed a progressive improvement in texture and flavor as honey content increased. The general acceptability scores affirmed the positive reception of honey-infused cacao milk chocolate, with treatments T3 and T4 exhibiting the highest favorability. Notably, Treatment 4 consistently emerged as a frontrunner across aroma, color, texture, and flavor, characterized by a very appealing color, a very fine texture, and a very flavorful taste. These findings suggest that precise adjustments in the formulation significantly contribute to an elevated overall sensory profile, enhancing both the visual and gustatory qualities of the chocolate. The conclusions drawn from the sensory evaluations suggest that the incorporation of honey positively influences the overall quality and desirability of cacao milk chocolate. Respondents perceived the chocolates as fine to very fine in texture and slightly to very flavorful, indicating a potential market appeal for these products. The study also highlighted the crucial role of honey in enhancing the general acceptability of cacao milk chocolate. It is recommended that considering the success of the T4 chocolate formulation, initiating mass production as an Income-Generating Project for the College is recommended, leveraging its market potential. It is recommended also that a crucial aspect to address is the determination of the chocolate's shelf-life, necessitating a comprehensive study to ensure the product's quality and safety over time.

Keywords: cacao milk chocolate, honey-infused chocolate, product development

Geometric Morphometric Investigation in the Leaf Shape Variability of *Caladium bicolor* (Aiton) Vent.

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The elucidation of biological diversity has been greatly enriched by the application of geometric morphometrics, an analytical approach that transcends traditional morphological studies by providing a quantitative framework for shape analysis (Adams *et al.*, 2004). An exploration was done utilizing geometric morphometrics to delve into the intricate terrain of intraspecific variation within *Caladium bicolor*, a species that has captured the attention of botanists and ecologists alike. *Caladium bicolor* renowned for its vibrant foliage and intriguing patterns, provides a compelling subject for investigation. The importance of unraveling the intraspecific variation within *Caladium bicolor* opens a window into the species' adaptive strategies, response to environmental cues, and potential implications for its ecological interactions. The main aim of this study is to describe and quantify the variation in shape within varieties of *Caladium bicolor*. This can help identify and analyze patterns of shape variation.

An integrative approach to elucidate variations of the leaves of *Caladium bicolor* was explored using landmark geometric morphometric analysis. The study utilized 540 scanned leaf images establishing 13 putative homologous landmark points and were analyzed in the Principal Component Analysis (PCA) and Canonical Variate Analysis (CVA). The results were further subjected to confirmatory Discriminant Analysis (DA). The methods were used to test subtle differences in the leaf shapes of *Caladium bicolor*. Findings showed that Geometric morphometrics also differentiated the species significantly based on Canonical Variate Analysis (CVA) with significant p values. However, results of Discriminant Analysis (DA) showed low percentage values highlighting the similarities of the leaf shapes of the six (6) identified *Caladium bicolor* varieties. The current findings highlight the applicability of landmark analysis as a possible complement to traditional methods of species identification.

Keywords: *Caladium bicolor*, Landmark Geometric Morphometrics, Principal Component Analysis

Effective Online Marketing Strategies Used by Food and Catering Establishments in Conner, Apayao: Basis for Proposed Marketing Program

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It is well-known that traditional (offline) marketing strategies are already widely used by different establishments around the world and there are almost no new options for fostering competition. Here comes online marketing with almost unlimited possibilities and options. With the voluminous growth of internet users and the growing trend of online marketing, it seems indispensable to run a business without an online presence. This is due to the fact that “consuming in shops” is changing to “online consuming”. Different establishments nowadays are using different online marketing strategies to attract prospective consumers. This paper focuses on the effective online marketing strategies used by food and catering establishments in Conner, Apayao as a basis for the Proposed Marketing Program. A mixed Method of Research was used in this study. It describes the effective online marketing strategies used by food and catering establishments. The results show that Facebook is an effective platform for promoting Food and Catering establishments, and that discount is the most successful marketing method for persuading clients. Furthermore, the efficiency of online marketing methods has successfully boosted the number of visitors to their website, generating conversion, patronage, and revenue, while additionally enhancing brand visibility and awareness. The study also discovered that there is no significant variation in the efficiency of internet marketing techniques whether grouped by management type or years in operation.

Keywords: online marketing, strategies, food, catering

Psychological Risk Assessment of Residents in Flood/Landslide-Prone Areas in the Province of Bukidnon

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Natural disasters like floods and landslides are potential threats to both the physical and emotional well-being of individuals. The psychological effect could influence the way people look at themselves and adapt to any untoward incidence in the future. The study aimed to assess the residents' psychological state in terms of depression, anxiety, and stress in the aftermath of a disaster. Also, it assessed the adaptive capacity of affected populations to disaster; and recommended a program for disaster mitigation on psychological resilience at the barangay level. Questionnaires were used to gather data on disaster risk reduction elements, which determined the hazard, exposure, and vulnerability of the populations. With these variables, the risk and the adaptive capacity were computed. The adopted 42-item DASS questionnaire of Lovibond and Lovibond (1995) measures the three subscales of psychological health conditions which are depression, anxiety, and stress. Results showed that most of the respondents are on the normal scale in the three subscales. Of the three negative emotional states, the anxiety scale was consistently higher than depression and stress scales among respondents of the five barangays. The risk assessment of the five barangays showed that among the barangays, Barangay Batangan had the highest hazard and exposure. However, vulnerability was low in this barangay due to the high readiness factor, thus resulting in a higher adaptive capacity compared to the other four barangays.

Keywords: disaster risk reduction, psychological health condition, risk, adaptive capacity, flood

Bio-organic Hydroponic Cultivation of Curly Greens Leaf Lettuce (*Lactuca sativa* L.)

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Hydroponic cultivation is considered to play a significant role in solving the global food -resource-environment trilemma. Several high value crops like leafy vegetables and herbs have been successfully grown in hydroponic systems on commercial levels despite the limited knowledge on their potential for healthier organic cultivation. This study has successfully described the effects of indigenous bio-organic nutrient solutions on plant growth and development of leaf lettuce (*Lactuca sativa* L.) 'curly green' grown under hydroponic cultivation. Five nutrient solution treatments using combinations of chemical and bio-organic fertilizers i.e., chemical fertilizer, vermitea, chemical-vermitea, IMO-vermitea, and FAA-vermitea were used. The pure vermitea nutrient solution showed the highest plant height, number of leaves leaf width, leaf length, shoot fresh weight, shoot dry weight, and root dry weight at 28 days after transplanting (DAT). Whereas the longest root, root fresh weight, and root dry weight were observed to be highest in lettuce plants fed with chemical-vermitea nutrient solution. Plant growth parameters of lettuce grown using chemical and vermitea nutrient solutions were significantly higher than those that were grown using vermitea with indigenous microorganisms (IMO) and fish amino acids (FAA). Our data showed that using pure vermitea organic nutrient solution resulted in good plant growth and development of lettuce. Lettuce grown organically showed remarkably higher growth improvement compared to lettuce plants grown using chemical fertilizers. The enhanced growth and development of organically produced lettuce using various indigenous and locally-available nutrient solutions provide new insights to better understand the mechanisms and explore effective techniques in organic cultivation of hydroponically grown crops.

Keywords: Bio-organic, nutrient solution, hydroponic cultivation, lettuce, organic fertilizer

Quality of Pedagogic Strategies in Teaching Multigrade Classes in the Division of Quezon

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The study focused on the Quality of Pedagogic Strategies in Teaching Multigrade Classes in the Division of Quezon. The study applied descriptive survey method for the study with the Questionnaire as the main data gathering tool. A total of 81 respondents participated in the study. Statistical tools were utilized such as frequency count, mean scores, Mann Whitney U-Test and Kruskal Wallis H-Test. The study revealed that a typical respondent comprised of age 21 to 30 years old, female-dominated, married individuals, with Master's Units, were in Teacher I position, and served the school for 1 to 5 years. Also, the study concluded that quality of pedagogic strategies in teaching multigrade classes was given a very good rating in the Division of Quezon. When it comes to Peer Teaching or Tutoring, it showed that the administrators and teachers apply differentiated learning instruction to ensure learning will take place in school. According to Competency-based Learning, it stated that competency-based education is applied by the Multigrade teachers following the K-12 Curriculum and MELCs based competencies. In terms of Direct Instruction, it elicited that multigrade Instruction is evaluated or assessed through formative and summative assessments for the period. In addition, the study concluded that the respondents often encountered the problems in using pedagogic strategies in teaching multigrade classes in the Division of Quezon. This showed that the students lack of gadgets to be used for internet classes for differentiated learning approach. Next item elicited that there are problems with the internet connectivity for differentiated approach. This was followed by the statement which said that the location of Multigrade schools are the reasons why facilities and other construction are not readily available. And, there is no significant difference on the respondents' assessments on the quality of pedagogic strategies in teaching multigrade classes in the Division of Quezon according to profile except for Teacher's Rank on Peer Teaching or Tutoring which is statistically significant on the respondents' assessments on the quality of pedagogic strategies in teaching multigrade classes in the Division of Quezon according to profile.

Keywords: Polytechnic University of the Philippines, Master in Education Management, Multigrade Classes, Pedagogic Strategies, Quality, Teaching Strategies

Risk Assessment of Basic Social Services in the Province of Bukidnon

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This study conducted a risk assessment and formulated a model to measure the disaster risk reduction of selected flood-prone and landslide-prone barangays in the Province of Bukidnon. It specifically focused on the basic social services on food, water, electricity, and health. Primary and secondary data were used to establish hazard and population density maps to determine the exposure of communities during disasters. Further, the adaptive capacity (CA) of a local government unit (LGU) to respond to disasters was computed. Key findings revealed that exposed communities could be classified into various levels of susceptibility. Using the model, results revealed that the reduction of risk depends on the adaptive capacities and risks of LGUs. Further, efficiency to address risk is a ratio between the adaptive capacity and risk. Thus, the higher the adaptive capacity of LGUs would mean better efficiency in disaster risk reduction.

Keywords and phrases: Disaster risk assessment, adaptive capacity, hazard, social services, reduction

Investment Practices and Prevailing Challenges of the Hybrid Entrepreneurs

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Small-medium enterprises are vital for the economic development of the countryside and boosting local tourism. The preference of hybrid entrepreneurs for investment practices matters for the success of the respective businesses. The study used a descriptive research design and a total enumeration comprising thirty-seven full-time faculty-entrepreneurs of the Higher Educational Institutions in Capiz, Philippines. The researcher-made questionnaire was used to determine hybrid entrepreneurs' investment practices and prevailing challenges. It was validated using Lawshe's Content Validity Ratio (CVR) by five experts composed of business owners, bank managers, and DTI personnel. The investment practices, which consist of improvement of the facility and business processes, indicate respondents' commitment to improving their business to promote progress in the local economy. The most prevailing challenges faced by hybrid entrepreneurs were that they became victims of fraudulent investment schemes and entrants to new competitors in the local market. These prevailing challenges hybrid entrepreneurs encounter affect their operational efficiencies, reduce profits and heighten competition. There are specific issues that the local government unit can address, like providing financial literacy programs, access to financial services, and assistance in upgrading to new emerging technologies. Support for hybrid entrepreneurs in the appropriate forms is essential at all stages of the business life cycle to enable these businesses to start up, develop and grow, and contribute to employment, growth, and social inclusion. Calculated risk of business opportunities, business knowledge, and technical skills are essential for surviving in the business. The study recommends designing a financial literacy program and a five-year financial plan for hybrid entrepreneurs.

Keywords: hybrid entrepreneurs, faculty-entrepreneurs, financial literacy, financial plan, descriptive research

The Indigenous Knowledge, Systems, and Practices in Banaue Rice Production through the Lens of Ethno-stem

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In line with its thrust to promote culture-based education, various institutions support academic curriculum which has links to indigenous knowledge and practices. Thus, the study aimed to identify ethnoscience elements from the Banaue rice production practices. Specifically, it identified the indigenous knowledge systems and practices of Ifugaos on Banaue rice production and the science concepts from the Banaue rice production practices in the selected places in Banaue, Ifugao. Using the ethno-STEM approach and ethnoscience in qualitative design, the researcher employed observation, interviews, documentary analysis, and literature study to investigate the concepts of science from the Banaue rice production practices. Purposive sampling was used in identifying respondents that are especially knowledgeable about or experienced with the phenomenon of interest. The respondents were distinguished indigenous holders and elders in the community. The findings of the study revealed that the stages in Banaue rice production practices consist of various scientific concepts in life science, physics, chemistry, and earth science. Furthermore, the science concepts can be integrated into science learning using the Science, Technology, Engineering, and Mathematics (STEM) Approach. The study concludes the Indigenous knowledge of Ifugaos has developed from understanding and documenting the processes in nature. An iteration of practices over time has led to products and processes that are based on sound scientific principles. It is hoped that this study serves as a reference in designing a science curriculum based on Banaue rice production practices. It is recommended that further studies be conducted on other Ifugao indigenous knowledge systems and practices.

Keywords: ethnoscience, Banaue rice production, STEM Approach

Job Satisfaction and Performance of Faculty Members in Apayao State College: A Correlation

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To evaluate the job satisfaction of faculty members in relation to their performance. The study used the descriptive correlational research design. Modified survey questionnaire was used. Frequency, percentage, weighted mean, T-test, One-way ANOVA, and Pearson-r coefficient of correlation was utilized. The performance of faculty was determined through computing the general average, and to determine the problems encountered and the degree of seriousness of the respondents', weighted mean was used guided with a five-point Likert scale. Findings revealed that profile of faculty majority are experienced female, married with an average of 2-3 children, who holds master's degree and have moderate to high monthly income and received a low take-home pay. Faculty members established a greater job satisfaction in areas of relationship with supervisor, job security, relationship with colleagues, salary received, promotion and work itself. And they have least job satisfaction in other areas particularly recognition and rewards and policies. There is no significant difference in the level of job satisfaction between male and female thus, the hypothesis is accepted. There is no significant difference in the level of job satisfaction to the age, civil status, length of service, educational attainment, monthly income, take home pay, and no. of children thus, the hypothesis is accepted. There is no significant relationship between the level of job satisfaction and performance of the faculty thus, the hypothesis is also accepted. The problems that have serious effect to job satisfaction of faculty includes lack of laboratory rooms, apparatus, equipment and other requirement, lack of classrooms and internet connectivity. Thus, the study concluded that job satisfaction of faculty members in Apayao State College is high and their performance is very satisfactory.

Keywords: Job satisfaction, performance, faculty

Strengthening Seismic Performance Evaluation: Exploring Response Modification Factors in Reinforced Concrete Special Moment-Resisting Frame Using Incremental Pushover Analysis

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Previous studies have highlighted the limitations of relying solely on code-based response modification factors to accurately predict a structure's behavior under seismic forces. These limitations are often attributed from variations of the structure's material properties, structural geometry, and site-specific attributes. Consequently, this study aims to determine the response modification factor, denoted as the R-factor, for a prototype 10-storey three-dimensional concrete special moment-resisting building frame.

The methodology employed in this study involves an analysis and design process aligned with the seismic provisions outlined in the National Structural Code of the Philippines (NSCP 2015). Both static and dynamic seismic calculation methods are integrated, incorporating dynamic response spectrum analysis that considers both code-based and site-specific response spectra to evaluate the structure's inelastic behavior. Nonlinear incremental static pushover analysis, by means of MIDAS Gen software, is utilized to assess the structure's elastic response. Crucial parameters such as the ductility factor, redundancy factor, and over-strength factor are calculated utilizing a MATLAB algorithm. This algorithm employs a bilinear curve-fitting technique applied to pushover curve data. Subsequently, these derived parameters are instrumental in evaluating the R-factor of the structure.

The results demonstrate that the R-factor derived from site-specific seismic parameters exceeds the values obtained from code-based provisions, indicating a more significant reduction in elastic seismic force. This underscores the importance of incorporating site-specific characteristics during seismic analysis and design processes.

The methods employed in this study offer a straightforward means of quantifying the R-factor, which can be applied across various building configurations and geographical parameters. By enhancing the accuracy and reliability of seismic assessments, this approach contributes to the development of safer and more resilient structural designs.

Keywords: Response modification factor, site-specific response spectra, pushover analysis

Epidemiological Typing and Antibigram Trends of *Klebsiella* species in Relation to Clinical Findings from European Intensive Care Units (ICU)

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Healthcare-acquired infection is a significant cause of illness among admitted patients in a hospital, and *Klebsiella pneumoniae* is known to be one of its causative microorganisms. Due to its ability to spread rapidly in a hospital setting, nosocomial outbreaks of Multidrug-resistant *Klebsiella* spp. often occur and become an exceptionally concerning healthcare dilemma. Along with the widespread misuse of antibiotics, this problem has escalated due to the rise of antibiotic resistance. Multidrug-resistant *K. pneumoniae* has been a significant contributor to nosocomial pneumonia and due to its nature, even combinations of therapy often yield unsatisfactory outcomes against the resilient strain. In Europe, isolated Enterobacteriaceae species from intensive care units (ICU) and non-ICU patients were analyzed using the Study for Monitoring Antimicrobial Resistance Trends (SMART). The findings indicated that *K. pneumoniae* is one of the most prevalent multidrug-resistant organisms (MDRO). Moreover, Carbapenemase-producing *K. pneumoniae* was reported to propagate across 15 hospitals in Greece. Infections with Carbapenem-resistant *Klebsiella pneumoniae* (CRKP) are linked to high rates of illness and death, particularly among individuals who have undergone an extended hospital stay and have been exposed to invasive medical devices and procedures. The antibiogram conducted among the isolates from the ICU revealed that its propagation involved different strains of *K. pneumoniae*, indicating its wide range of resistance patterns. Numerous evidence and conducted field research show consistent significant connections between the occurrences of diseases in European ICUs and the antibiogram patterns of *Klebsiella* spp. As supported by findings, the microorganism is then established as one of the major leading causes of hospital-acquired pneumonia across ICUs in European countries, causing a significant influence on the rising disease cases in context of intensive care. Considering the alarming increase in nosocomial diseases caused by antibiotic-resistant strains of *K. pneumoniae*, it is imperative to improve healthcare protocols to address this issue consistently.

Keywords: Antibiogram patterns, Europe, ICU, *Klebsiella* spp.

Grants vs. Economic Status: The Civil Society Organizations (CSOs) Experience

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Utilizing the descriptive-comparative-correlational designs, this study gathered information on the profile of CSOs, officers, and members as well challenges encountered in implementing the grants received from sponsors. In addition, the descriptive comparative design was used to compare the level of the economic status of CSOs before and after the grants when grouped by CSOs profile and type of respondent. The grants' level of implementation and the recipients' economic status before and after the grants were tested for significant correlation. The study revealed that the characteristics of the respondents and the CSOs were diverse, which can be a vital factor in successfully running the CSOs' business enterprise. Some provisions in the CSOs' Constitutions and By-Laws were marginally applied, which posed major challenges for the organizations, such as the inability to recover availed grants within the required period in the form of savings, organizational and financial management training profit sharing. Some determinants of the business management capability had to do with the type or area expertise of the CSOs and profile. The CSOs economic status in terms of income was poor, which also redounded to the economic status of the CSOs members. Indicators of CSOs profitability such as type of organization, municipality, grants received, years of establishment, and the number of members were considered vital in the flourishing of the CSOs enterprise before and after implementing the grants. The degree of implementation and economic status before and after the grants highly influenced the financial management strategies of the CSOs. Lastly, the CSOs faced diverse challenges, which were considered vital factors that influence the business performance of the CSOs in Mountain Province.

Keywords: business management, civil society organizations (CSOs), economic status, grants

Digital Technology as Strategy for Economic Inclusion of Rural Women Micro-Entrepreneurs: Investigating the Landscape of Partido District of Camarines Sur, Philippines

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Women entrepreneurs are making significant contributions to the global economy. The emergence of digitalization through digital learning, the rise of various digital platforms and applications, improvements in telecommunications and connectivity bode well for the economic inclusion of women. The study sheds light on the impact of digital technology on the micro-businesses operated by rural women entrepreneurs. Specifically, it aimed to describe the socio-demographic and business profile of rural women engaged in micro business enterprises; to examine the extent and factors of the use of digital technology; and to explore the economic inclusion of women entrepreneurs and its factors. The study utilized descriptive measures, logistic and ordinal regression for the analysis of the data. The drivers to economic inclusion of women in the rural areas of Partido, based on the results of the study, are age, marital status, training, working on established businesses, and having multiple income sources and a bank account. Moreover, results reveal that drivers to the adoption of digital technology are home-based location, diverse income sources and formal access to financial services evidenced by having a bank account. This finding shows that promoting digital technology among rural women-entrepreneurs, especially among the untapped group of older entrepreneurs with long-time businesses, can have multiplier effects that can scale-up their economic inclusion. A follow-up study on the barriers to digital technology adoption will help inform policymakers, information technology (IT) firms, and the formal banking sector on the ways to tailor-fit the design and delivery of digital technology to the needs and challenges faced by rural women entrepreneurs.

Keywords: Rural women entrepreneurs, digital technology, economic inclusion, micro-businesses/ enterprises

Assessment of Competency in Recognizing Mechanical and Chemical Erasures in Questioned Documents

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The identification and analysis of alterations play a crucial role in determining the authenticity and integrity of written or printed materials. To find and examine changes in disputed documents, forensic specialists in question document examination use a range of techniques, such as chemical and mechanical analysis, imaging technologies, and microscopic inspection. In the situations of fraud, forgery, or the authenticity of a document constitutes an issue, the identification of mechanical and chemical erasures is crucial. In order to guarantee the accuracy and reliability of documentary evidence offered in various legal proceedings, this serves as an essential instrument for criminology student, legal professionals and law enforcement organizations. This descriptive-correlational study aimed to assess the competency level in identifying mechanical and chemical erasures in questioned documents. The participants consisted of 200 criminology students randomly selected from state universities and colleges in Iloilo Province during the 2021-2022 academic year. The classification variables included gender and school type. To gauge competence levels in terms of both knowledge and skills regarding the identification of mechanical and chemical erasures, the researcher utilized a self-designed questionnaire that underwent validation and reliability testing. Descriptive data analysis involved the use of mean and standard deviation, while inferential analysis utilized t-test and Pearson's r with a significance level set at 0.05. The results indicated that, overall, the competency level in identifying mechanical and chemical erasures in questioned documents, in terms of both knowledge and skills, was deemed competent. This held true when the participants were further categorized based on gender and school type. Notably, no significant differences were observed in the competency level regarding knowledge and skills when considering gender and school type. Furthermore, the study revealed no significant relationship between knowledge and skills in the identification of mechanical and chemical erasures in questioned documents.

Keywords: Mechanical and chemical erasure, questioned document and alteration.

EducTok: A Gamified Resource Package in Set Theory

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The aftermath of the pandemic has posed further obstacles to the pursuit of the United Nations' objectives and the goals of Philippine educational institutions. However, as technology continues to advance, there has been a growing interest in integrating game components into educational settings [1]. This trend is further supported by the widespread use and influence of social media – specifically TikTok. Aurora is not an exception in terms of the academic struggles of both students and teachers. Because of the pandemic, the shift happened. Demographically, not all the places within Aurora were reached by strong telecommunication signals – only enough to receive standard text messages, but not strong enough to secure a good data network connection. This poses an external problem for the teaching and learning process because, initially, learning is done online.

This paper utilized the developmental research design with the incorporation of the ADDIE model in the creation of the learning resource package. Document analysis, utilization of educational technology, and videography tools were used throughout the phases. Descriptive method of research was used to track data of the respondents. The study was conducted at Aurora, particularly in Aurora State College of Technology located in Brgy. Zabali, Baler, Aurora. The institution – Aurora State College of Technology, commonly known as ASCOT, served as the locale of the study. Experts from the said school were asked to participate in the verification of the developed learning resource package.

It was determined that there indeed existed an instructional gap in terms of delivery of learning; the selected learning solution was to create instructional materials that adhere to the recommendations from past accreditation papers; the learning resource package was developed which consisted of TikTok videos, a module, and additional materials implemented for 9 sessions and evaluated by the experts with the Learning Resource Package features resulting to Highly Considered on both groups: Content (3.95), Instructional (3.90), and Technical quality (3.91) for the Experts and Module Content (4.97), Teaching and Academic Support (4.99), Assessment and Feedback (4.98), Organization (5.00), Resources (4.98), and Overall Satisfaction (4.97) for the students.

Keywords: college, gamification, learning resource package, Logic and Set theory, TikTok

Disaster Risk Reduction and Management Mechanisms for School Aged Children in Flood and Landslide Vulnerable Areas in the Province of Bukidnon

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This study assessed the disaster risk reduction and management mechanisms of schools in the province of Bukidnon, analyzed the adequacy and gaps of the disaster risk reduction and management mechanisms implemented in schools, and proposed a model of school-based disaster risk reduction and management network. The findings showed that the five priority actions established by the Hyogo Framework for Action on which the Department of Education Manual was anchored were not substantially achieved. Moreover, the DRRM mechanisms on disaster prevention, disaster mitigation, and disaster preparedness were fairly adequate, while disaster preparedness was somewhat adequate. Based on the findings, an integrated model of school-based disaster risk reduction and management (SBDRRM) network of vulnerable communities was proposed emphasizing a bottom-up approach, three-focal point system representing the susceptible areas under the school divisions of Bukidnon, Malaybalay and Valencia, multisectoral collaboration, and inclusion of DRRM in school curricula.

Keywords: disaster prevention, mitigation, preparedness, response, recovery, reconstruction

Social Entrepreneurship Sustainability Framework for Indigenous Peoples Cooperative: A Case of Bukidnon-Tagoloanon Tribe

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Social entrepreneurship is a game changer for sustainable development of the Indigenous Peoples. This paper aims to develop a framework for Indigenous Peoples cooperatives using the case of *Bukidnon Tagoloanon Mula Hay Ha Kabukalagan Agricultural Cooperative* of the Bukidnon-Tagoloanon Tribe. The framework is developed using the entrepreneurial characteristics of the tribe, their practices in the governance and management of the cooperative, and the challenges they have faced. The researchers used a narrative case study design in the conduct of the study involving internal and external stakeholders as participants. Findings reveal the uniqueness of the IP cooperative as seen in their customary practices such as their indigenous leadership, observance of community values, concept of communal property and profit sharing, and concern for the community. A framework of sustainability is developed highlighting the customary practices as the bedrock of the sustainability of an IP Cooperative.

Keywords: *Social Entrepreneurship, Indigenous Peoples Cooperative, Framework, Customary Practices*

Lexical Evolution: Media, Community, and the Shaping of Igorot Identity

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This research investigates the intricate dynamics surrounding the term "Igorot" within the context of the Cordillera Administrative Region (CAR) in the Philippines. Despite its origins as a neutral descriptor for various indigenous tribes, the term has been marred by historical misrepresentations and stereotypes perpetuated through media, literature, and educational materials. Through a qualitative-descriptive approach, including content analysis, interviews, and focus group discussions, the study delves into media representations, community perceptions, and the construction of Igorot identity. The findings reveal persistent misrepresentations of the Igorot community, perpetuating stereotypes and fostering discrimination. Educational materials, media presentations, and cinematic portrayals often reduce the rich cultural heritage of the Igorots to simplistic clichés, reinforcing negative stereotypes and misconceptions. Despite efforts such as legislative protections and international frameworks affirming indigenous rights, misconceptions persist, hindering the community's social inclusion and perpetuating marginalization. The study highlights the complex nature of Igorot identity, with divergent views within the community regarding the term "Igorot." While some embrace it as a link to their cultural heritage and communal lifestyle, others prefer tribal-specific identifications or reject the term due to negative connotations. The research underscores the need for portrayals that reflect the diversity and authenticity of Igorot culture, fostering understanding and respect. The findings of the research call for educational reforms to accurately reflect Igorot heritage and sensitization programs for media professionals to promote authentic representations. Collaborative efforts between the Igorot community, scholars, and media organizations are recommended to ensure respectful portrayals and combat stereotypes effectively.

Keywords: Igorot Identity, Media Representation, Cultural Misconceptions, Indigenous Rights, Community Perceptions

Organizational Culture and Human Resource Management and Development Practices in the Hotel Industry in Tarlac City

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This study used the descriptive correlational method to determine the relationship between the organizational culture and human resource management and development practices in the hotel industry in Tarlac City. 108 respondents from hotel businesses participated in the study. Findings revealed that the employees of the hotel industry in Tarlac City were mostly young male adults. There were more employees assigned at the front office and housekeeping than in the other areas, and most of them had served the hotels for less than 6 years. The respondents strongly agreed that the physical, social, climate, and welfare aspects of the organizational culture in the hotel industry were met and were favorable to them. Likewise, they strongly agreed that the human resource management and development practices of their company were standard, fair, and objective in general. Most importantly, the study revealed that there was a moderate correlation and significant relationship between physical, social, climate, and welfare factors and HRM practices highlighting the multifaceted nature of effective human resource management of the hotel industry in Tarlac City. Based on the findings, the following were recommended: strengthening of employee retention (longer length of service) by providing more effective incentive packages; sustaining the organizational culture in terms of the physical, emotional, climate, and welfare needs of the employees; regular and fair evaluation of employees and giving recognition to the deserving ones; attending intensive trainings on human resource management and development; strengthening and adding more employee compensation, benefits, and incentive packages; and conducting extensive empirical research on human resource management and development practices in the hotel industry and other establishments, private or state-owned, along areas on recruitment and selection, training and development, promotion, performance management, and compensation and reward system may be conducted.

Keywords: Organizational Culture, Human Resource Management and Development Practices, Hotel Industry, Employee Welfare

The Effects of Covid-19 Pandemic on the Goods Food Manufacturing Businesses in the 1st District of Davao de Oro: A Post-COVID Assessment

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This study employed descriptive quantitative research to provide a comprehensive overview of Micro, Small, and Medium Enterprises (MSMEs) in Davao de Oro, focusing on demographics and operational characteristics. Twelve registered MSMEs from five municipalities were included utilizing convenience sampling. The analysis revealed a dynamic entrepreneurial landscape in the 26-30 age range, with a significant presence of female entrepreneurs. Maragusan and New Bataan emerged as central hubs, reflecting diverse geographical distribution. The duration of operations indicated a mix of newer and established enterprises and a substantial portion of surveyed businesses operated with moderate monthly expenses. Perceptions regarding the impact of lockdown measures were consistent, with a significant proportion of respondents perceiving severe negative effects, particularly at Level 5. The study underscores the challenges MSMEs face due to the COVID-19 pandemic, emphasizing the need for tailored policies to support diverse business needs. Policymakers are urged to leverage these insights for evidence-based interventions, considering the urgency of addressing economic repercussions and promoting resilient recovery in Davao de Oro. Suggested strategies include financial assistance, business continuity programs, and capacity-building initiatives to alleviate hardships and foster economic recovery post-COVID-19.

Keywords: Descriptive Quantitative Research; Micro, Small, and Medium Enterprises (MSMEs); Covid-19 pandemic; Lockdown Measures

Social Media, Learning Styles and Academic Performance of Students: Basis for Enhancement of Guidance and Counseling Program

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Social media has become an essential component of college students' daily lives in today's digitally connected society. To establish a basis for enhancing guidance and counseling program, this study explores the complex relationship between social media, learning styles, and academic performance among students.

Results of the study showed that in general, the majority of students used Facebook (81.7 %), YouTube (50.7%), and Google+ (26.0 %). The mean and standard deviation of not using Google+ ($M=2.05$, $SD = 0.024$) and using Google+ ($M=1.91$, $SD =0.039$). The computed t-value was 3.056 with a p-value of 0.002 which is significant at 0.05 level. This suggests that using Google+ as a social media platform significantly affects the student's academic performance. The findings also showed a significant difference in the Academic Performance of the participants and their Learning Styles using the F-test, the computed value was 3.190 and with a p-value of 0.005, significant at 0.05 level. The findings reveal that participants who are collaborative and participative have a higher level of academic performance while the avoidant participants have the lowest level of academic performance.

The findings paved the way for the enhancement of guidance and counseling programs, ensuring students are better equipped with the necessary skills and strategies to thrive academically in the digital age. It calls for the development of guidance interventions that are adaptive to individual learning styles and responsive to the challenges posed by excessive or inappropriate social media use to improve their academic performance.

Keywords: Social Media, Learning Styles, Academic Performance

Lecture-Demo Video on Teaching Residential and Industrial Wiring System Concepts

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Technology application in the 21st Century teaching and learning setting substantially promotes quality education. The study determined the acceptability and efficiency of the developed localized lecture-demo video as a learning material in teaching BSIT ELC 1-B in selecting electrical materials and supplies and their specifications. The analysis sought to investigate the outcomes of the assessment rating of the prepared lecture-demo video and the impact of implementation. Teacher experts, student experts, and regular students from North Eastern Mindanao State University were the study subjects. The study's tool was the standard evaluation rating tool for non-print materials obtained from the Surigao del Sur Division Learners Resource Management and Development Office, the developed lecture demo video, and the pretest and posttest questionnaires. The study employed a developmental-quasi experimental design. The developed lecture-demo video was rated Very Satisfactory in content, instructional and technical quality. Analyses found that students who utilized the created lecture-demo video with learning activity sheets outperformed those who used the learning activity sheets on the posttest. The study concluded that the developed lecture-demo video has a positive learning outcome in learners' competency mastery. Likewise, it is widely accepted and recommended for learning purposes as experts evaluate content, instructional, and technical quality.

Keywords: localized, lecture-demo, wiring system, contextualized, video lesson

Socratic Questioning in Nominal Group Technique: A Strategy to Improve the Critical Thinking Skills of Grade 10 Students in Science at PHINMA Araullo University

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The K-12 Curriculum emphasizes the importance of honing Junior High School students' critical thinking skills before moving on to Senior High School. The study aimed to use Socratic Questioning in Nominal Group Technique (SQ + NGT) as a learning strategy to enhance the critical thinking skills of Grade 10 Science students at PHINMA Araullo University. The intervention was divided into two phases, each consisting of three sessions for two different disciplines taught (Physics and Biology), with SQ + NGT being utilized by both students and researchers. Each session's whole discussion was recorded and transcribed before being submitted to two experts who evaluated the students' answering quality according to the cognitive domains in Revised Bloom's Taxonomy of Education Objectives. The word count of the students' responses was also quantified by the researchers. In addition, students were given a pre-test and post- test using Lawson's Classroom Test of Scientific Reasoning before and after the strategy implementation.

The results showed that the students' answering quality increased in accordance with the cognitive domains in Revised Bloom's Taxonomy of Education Objectives throughout the sessions, with "Creating" being more frequent at the end of each phase. On the other hand, all of the students' word counts increased until some of them decreased after the second session in both phases. Data analysis revealed a significant correlation between the two variables, students' answering quality and their response word count, which were used to measure the extent to which students' critical thinking skills were enhanced. It was also noted that the intervention's two phases are significantly correlated, suggesting the effectiveness of SQ + NGT.

Furthermore, a significant difference between the students' pre-test and post-test scores was demonstrated. The research findings could make a significant contribution to the Philippine Education system's ongoing efforts to strengthen the students' critical thinking skills.

Keywords: Critical Thinking, Socratic Questioning, Nominal Group Technique, Science

Self-Compassion as a Moderator Between Perfectionism and Depression among Adolescents as Basis for an Intervention Program

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Presently, there has been an alarming increase in the number of people worldwide experiencing depressive symptoms, as well as perfectionistic tendencies, including adolescents. One of the emerging strategies targeting perfectionism and depressive symptoms that psychological practitioners take interest in is self-compassion. However, there are only limited local literature and studies on its moderating role to perfectionism and depressive symptoms. With this, among 1,003 junior and senior high school students from private institutions in Lipa City, this study investigated their self-compassion levels and the prevalence of perfectionism and depressive symptoms among them, and whether self-compassion can moderate the relationship between perfectionism and depressive symptoms. Utilizing a quantitative approach and three standardized questionnaires – the Self-Compassion Scale (SCS), Revised Almost Perfect Scale (APS-R), and Beck-Depression Inventory-II (BDI-II) – the study yielded the following key findings: majority of the respondents have moderate self-compassion levels and are not perfectionists, but have severe levels of depressive symptoms; and that self-compassion does not moderate the relationship between perfectionism and depressive symptoms. In response to these findings, the Specialized Program for Perfectionism and Depressive Symptoms (SPPeD) was developed, with the aim of providing an intervention for high school students who have perfectionistic tendencies and experience depressive symptoms, as well as prevention for those with low levels of both perfectionism and depressive symptoms.

Keywords: Adolescents, depressive symptoms, high school students, perfectionism, self-compassion

Governance Issues on Disaster Risk Reduction of LGUs' Controlled Social Services of Selected Barangays in the Province of Bukidnon

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Disaster Risk Reduction Management (DRRM) concepts are difficult to get across to the community leaders, especially to the residents themselves. In the past, competence in disaster preparedness cannot take off in the barangay level due to an apparent lack of education as noted by the Department of Interior and Local Government (DILG). Local government units (LGUs) recognize the importance of disaster risk reduction management. However, issues on policies that have bearing on the pre- implementation, implementation, and post-implementation activities are deemed important. Thus, the study explored the governance issues on disaster risk reduction of local government units' basic social services of selected barangays in the Province of Bukidnon. Focus Group Discussion (FGD), interviews, and checklist were used in gathering the data to answer the following objectives: (1) assess the pre-implementation, during the implementation, and post-implementation of the disaster risk reduction management policies focusing on the basic social services such as food, water, electricity, and health in the identified barangays; (2) identify issues on the implementation of the DRRM based on the pillars of good governance; and (3) recommend appropriate measures to respond to governance issues. Findings reveal that the local government units of the Province of Bukidnon showed preparedness in disaster risk reduction in pre-implementation, during the implementation, and post-implementation of the disaster risk reduction management policies. Governance issues were identified, namely, distribution of basic services, relocation site, list of households in the community, and accessibility of information. However, appropriate measures were recommended to respond to the identified governance issues.

Keywords: Governance issues, disaster risk reduction management, local government units, basic social services

From Small Plots to Diversified Farm Enterprise: A Case of a Rural Based Organization

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Community gardens are considered as small food baskets in many households of the country. These gardens are maintained by people's organization (PO) whose officers and members are committed to cultivate food crops to combat malnutrition and hunger as well as augment their income. This paper is a process documentation of the transition from community gardens into a diversified farming engaged by the Tangaro Young Farmers Association (TYFA) in the Municipality of Catarman, Province of Camiguin from June 2020 to December 2023. The main objective of the study is to describe how and why the TYFA started their community gardens and eventually ventured into diversified farming such as food processing, egg production, tilapia production, and even ventured into sari-sari store business. It utilized quantitative and qualitative methods such as conduct of survey, focus group discussions, key informant interviews, data mining and participant observation. Findings show that the association was organized through the efforts of the Research and Innovation and the Extension and Training Offices of Camiguin Polytechnic State College as part of the COVID 19 Quick Response Project. The association has received recognition and appreciation in the local and regional levels such that various technical and financial support from the local government units and national agencies poured in. Cooperation, collaboration, coordination and co-existence are considered the core actions to achieve sustainability and resilience of the enterprise.

Keywords: enterprise, peoples' organization, rural development, women empowerment

Parents' Involvement in the MTB-MLE Reading Intervention Program of Grade One Learners in the Division of Quezon

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The study determined the parents' involvement in the MTB- MLE reading intervention program of Grade One learners in the Division of Quezon. The study employed a descriptive method of the study. A questionnaire was utilized by the study as the primary data gathering instrument. A total of 370 respondents participated in the study. Statistical tools were used to analyze the data such as percentage, mean, and Kruskal Wallis H-Test. The study revealed that a typical respondent comprised mainly of those 31-40 years of age, female dominated, were in their regular positions in their job, College graduates, were earning 15,000 and below, has family members of 3 to 4, and was engaged in the PTA. Moreover, the parents participated in the reading intervention program of Grade One learners. Based on Oral Language Development, it indicated that the respondents teach their child the different sounds of the letters in the alphabet and words. In addition, the respondents sometimes encountered the problems met in the parent's involvement in the reading intervention program of Grade One learners. It stated that limited instructional materials are present in the schools and at home. And there is no significant difference on the respondent's assessment on parent's involvement in the MTB- MLE reading intervention program of the Grade One learners when grouped according to profile except for occupation and educational attainment which has significant difference on the respondent's assessment on parent's level of participation in reading intervention program of Grade One learners when grouped according to profile.

Keywords: PUP Open University, Parents Involvement, Reading Intervention Program, Grade One Learners, Division of Quezon

Resilience: 3D Animation for Disaster-Risk Reduction in Flood Preparedness, Prevention and Mitigation

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Frequent flooding in Bukidnon, Philippines, has resulted in substantial damage and loss of life. Conventional flood risk education methods may not be sufficient to address this ongoing issue. Therefore, this study explores the potential of utilizing 3D animation as a unique tool for disaster preparedness. A specialized 3D animation program tailored specifically for Bukidnon Disaster Risk Reduction (DRR) was developed and evaluated. This tool, which provides information on flood causes, impacts, and mitigation measures, aims to educate the public, raise awareness, and promote proactive decision-making. The development process followed the Multimedia Development Life Cycle (MDLC) methodology, incorporating phases such as planning, design, and evaluation. Initial testing received positive feedback from users and stakeholders, indicating the animation's effectiveness in improving flood preparedness comprehension and usability. Respondents of all age groups found the animation responsive, user-friendly, and impactful. The evaluation, which yielded the highest weighted mean of 4.93, confirmed the animation's smooth functionality and technical reliability. Furthermore, stakeholders endorsed the animation's effectiveness in engaging users in the learning process about flood preparedness, as evidenced by a weighted mean of 4.67. The successful development of this 3D animation tool for flood preparedness in Bukidnon underscores its efficacy in achieving its objectives. The positive evaluations underscore its effectiveness in raising awareness, enhancing preparedness, and empowering individuals to make informed decisions. This innovative approach holds significant promise for bolstering community resilience to floods and fostering a safer environment in Bukidnon.

Keywords: 3D Animation, Flood Preparedness, Prevention, and Mitigation, Disaster Risk Reduction.

Foreign Teachers' Adversity Quotient, Socio-Cultural Challenges, and Professional Competency: Basis for a Program Development

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The teachers' professional competence and adversity quotient became a popular issue since the Covid-19 pandemic. Hence, this study investigated the level of adversity quotient, socio-cultural problems, and professional competency of foreign teachers as the basis of program development. The study used the descriptive survey research design with the questionnaires as a research tool in determining the level of adversity quotient, socio-cultural problems, and professional competency of foreign teachers as the basis of crafting the proposed faculty development program.

The study's findings showed that most of the foreign teacher- respondent is in her mid-adult age, a female, a graduate of a bachelor's degree major in science, with adequate length of teaching experience in the USA receiving a comparable monthly salary schedule. The Foreign teachers working in the USA had a low level of adversity quotient, and they agreed on the socio-cultural problems they encountered in the USA. The level of professional competence of foreign teachers was proficient. There was a significant difference in the socio-cultural challenges of foreign teachers in terms of attitudes, self-awareness, attribution and communication with peers when grouped according to length of teaching experience. There was a significant relationship between the socio-cultural challenges encountered and professional competency of foreign teachers. There was a significant relationship between the adversity quotient of foreign teachers and the socio-cultural problems they encountered. There was no significant relationship between the adversity quotient of foreign teachers and their professional competence. The developed program aimed to increase the level of adversity quotient of foreign teachers in the USA. Along with the findings and conclusions, the researcher recommends that teachers need to reflect on their awareness about their adversity quotient so that they can improve their resiliency to increase their capacity to accept challenges, setbacks, and other future adverse situations. The more effectively and constructively they respond to life's difficulties the more they have strong resiliency. Based on the findings it is suggested to enhance the Control dimension of their AQ is the most scored Below Average to increase performance and take positive actions especially on adverse situations. Since that overall Adversity Quotient scored "low" it can be enhanced by improving one's motivation and strengthening their capacity to cope up on adverse situations. School administrators may set or create programs that will help teachers to improve their Adversity Quotient and engage in activities that will enhance their socio-cultural adaptability such as seminars and workshops and encourage teachers to participate in training programs specifically designed to improve teachers' adversity quotient, professional competence, and socio-cultural adaptability. The developed program of this study may be adopted to increase the level of adversity quotient of foreign teachers. Further studies on teachers' adversity quotient, socio-cultural challenges and professional competency may be conducted involving different variables and a wider scope of sample and research locale.

Keynotes: adversity quotient, professional competence, socio-cultural adaptability, professional development

End User Computing Satisfaction and User Job Performance of Accounting Business Process Outsourcing Employees

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Accounting software is essential to the organization as it helps accountants to record, classify, and summarize accounting information needed by managers in making business decisions. End user computing satisfaction (EUCS) is a great metric to determine whether it is performing well this intended purpose to the organization. User job performance (UJP) is also a good measurement as it indicates whether the accounting software is contributing to the efficiency, effectiveness, and creativity of employees. The study utilized the descriptive-comparative-correlational research design. Employees in the accounting business process outsourcing (ABPO) companies were chosen as the participants of the study due to the large contribution of the industry to the Philippine economy. Based on the results of the study, a total of 201 employees participated. Majority are female, belongs to the generation of millennials, and with less than one year of working experience. Overall, employees were satisfied with the accounting software. They also agree that the accounting software is improving their performance. Test of differences showed that there is a significant difference between male and female regarding their efficiency in using the accounting software ($p = 0.021$). Male employees exhibited higher level of efficiency compared to female employees. There was no significant difference in the EUCS and UJP of employees between other demographic profile variables. Using Pearson's Correlation at $\alpha.05$ level, EUCS had strong correlation with UJP ($r = 0.66$, $p = <.001$). Satisfaction with the accounting software is associated to the agreement of employees that their performance was improved by the accounting software. The management of ABPO companies may consider regularly looking into the satisfaction level of their employees as this was highly correlated with their performance. They may also conduct trainings periodically to ensure that the employees are properly equipped with up-to-date knowledge and consequently improve further their performance.

Keywords: Accounting Business Process Outsourcing, Accounting Software, End User Computing Satisfaction, User Job Performance

Designing a Framework for Predictive Analysis System: A Web – based Platform for Poverty Alleviation in Samar Province, Philippines

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Poverty is a complex problem that has affected millions of people around the world for centuries. The abrupt increase in population and the unavoidable rise in inflation rate due to economic problems and other factors are clear indicators of poverty. Poverty remains a pressing issue in many parts of the Philippines, and Samar Province is no exception. This study aimed to design a predictive analysis system framework for poverty alleviation in Samar. A quantitative data analysis methodology was used in this study to identify the primary determinants associated with poverty in Samar. The gathered data was utilized to design a predictive analysis system framework. The result revealed that the proposed framework served as the foundation for the development of a web-based predictive analysis system that has the capacity to automate the collection of data, predict and analyze a wide range of data sources, including demographic data, income levels, education, healthcare access, and historical poverty data, locate the poorest area of the province through GIS, and have an integration of SMS for alerts and notifications. The proposed system is crucial for policymakers to make informed decisions about where and how to allocate resources effectively and will aid in the development of a more comprehensive and improved poverty alleviation program in the Philippines' province of Samar. Local governments can use the technology to make informed, data-driven decisions, resulting in more efficient, effective, and community-focused policies. The said system represents an important step toward realizing the full potential of data-driven government in the province of Samar and its local communities.

Keywords: Data analytics, Information system framework, Graphical Information System (GIS), SMS notification, Sustainable Development Goal 1 (SDG 1)

Salinwika: Isang Kagamitang Modyul sa Pagkatuto ng Pagsasalin-Wika sa Filipino

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Ang pananaliksik na ito ay tungkol sa pagbuo at balidasyon ng kagamitang modyul isang kagamitang pampagkatuto na magagamit ng mag-aaral sa paglinang ng kanilang kasanayan at kaalaman tungo sa malalim na pag-unawa sa pagsasaling wika, panitikan at iba pang aspeto nito.

Gumamit ng disenyong pinaunlad na pananaliksi at palarawang pananaliksik. Ang modelong ADDIE ang naging batayan sa prosesong ng pagsasagawa ng pag-aaral. Pinabalido ito sa limang (5) ekspertong guro upang matukoy ang kalidad ng nabuong modyul. *Random sampling* ang paraan na ginamit sa pagpili sa dalawampu(20) mag-aaral upang matukoy ang antas ng pangtanggap sa modyul.

Batay sa mga resulta, nakabuo ng isang kagamitang modyul sa mas lalong ikauunlad nang kakayahan ng mga mag-aaral at kahusayan ng asignaturang nililalang kasabay ng kanilang pagkatuto. Batay sa kinahitnan ng balidasyon ng mga eksperto sa modyul ay nagkamit ng pagkalahatang mean na 4.95, na may interpretasyong berbal na lubos na balido. Nakakuha ng *weighted mean* 4.93, na may interpretasyong berbal na pinakamataas na katanggap-tanggap sa mga mag-aaral. Ito ay nangangahulugang ang nabuong kagamitang modyul ay may kaangkupan, kaayusan at katugunan sa pagpapaunlad ng kaalaman at kasanayan sa pagkatuto nang mga mag-aaral sa pagsasaling wika at sa iba pang aspeto nito.

Sa kabuuan, ang nabuong modyul ay may malaking kapakinabangan sa mga guro ng asignaturang Filipino at sa ikauunlad ng pagkatuto ng bawat mag-aaral na naging tugon sa nararanasang hamon sa edukasyon sa kasalukuyan. Hinihikayat din ng mananaliksik na bumuo pa ng ganitong klaseng kagamitang pampagturo tungkol sa kalinangan sa wika, panitikan at iba pang aspeto nito na makatutulong sa mabilis na pagkatuto ng mga mag-aaral.

Keywords: Pagsasalin kagamitang modyul, Kagamitang pampagkatuto, Balidasyon SALINWIK

Attitude and Preparedness Towards the Teaching Profession of Pre-Service Teachers: Basis of Formulation of Pre-Service Teacher Development Training

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This study employed a descriptive-correlational research design to investigate whether there exists a significant relationship between attitude and preparedness towards teaching profession of teacher education students. A total of 153 students from various teacher education programs in a state university in Bicol have been surveyed for the present study. A correlation analysis was used to test if there exists relationship between attitude and preparedness towards the teaching profession.

Results of the study show that teacher education students like several aspects of teaching, including workplace conditions, benefits, and job responsibilities. Most participants rated these attributes highly, indicating a positive view of teaching as a career. Teacher education students had more diverse views on benefits than other qualities. Generally, teacher education students view teaching as a good career. The study also found that Teacher education students are well-prepared for teaching. With good scores across multiple criteria and little variability, these future teachers have a solid foundation. This shows that teacher education and training prepare teacher education students with the knowledge, skills, and attitudes to succeed as educators. Results of the correlation analysis revealed a significant relationship between attitude and preparedness towards teaching profession. This finding suggests that a teacher education student's preparedness for the teaching profession is highly connected to their attitude towards the teaching profession. Fostering a positive attitude towards teaching may lead to improved preparedness, and vice versa. Educators and teacher training programs could benefit from improving both attitude and preparation simultaneously through various strategies. Results of this study could serve as basis in formulating a pre-service teacher development training.

Keywords: attitude, preparedness, teaching profession, pre-service teachers

Performance and Feedback of the Master of Arts in Teaching Mathematics Graduates in a State University, Cordillera Administrative Region

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This study was conducted in order for the College of Advanced Education - Ifugao State University to profile their graduates at the same time gather feedback as a basis for reflection and improvement on the quality of education they provide. It particularly looked into the profile, work and employment, as well as career advancement of the MAT Mathematics graduates from the years 2015-2023. It also looked into the graduates' feedback and applicability of the course curriculum in terms of skills and competencies developed and as applied in their careers. This study utilized the complete enumeration where a survey instrument was adopted and slightly modified from the Graduate Tracer Study questionnaire of the Commission on Higher Education. Results revealed that 100% of the graduates are employed and 89% have enjoyed promotion/reclassification or employment to permanent positions due to their degree and the skills and competencies they have gained from the program. Further, all of the respondents agreed that the degree finished is relevant and significant to their jobs and career progression. Findings also showed that the MAT Mathematics program of the university has contributed to a high extent to the personal and professional growth of the graduates.

Keywords: graduates' feedback, tracer study, performance of graduates

Employers' Feedback on Teacher Education Graduates of a State University in the Cordillera Administrative Region

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Employer's feedback can generate evidence on the quality of graduates, their capabilities and performance in the school, and it can provide information on proficiencies and qualities they considered very important and useful in the workplace (Butler, Singh & Choo 2012). As a university producing human resource for the industry, it is important to gather feedback from employers as basis towards an industry-based and standards-based curriculum for the teacher education courses. This study then determined the perceptions of employers regarding the academic preparedness and competence of Bachelor of Elementary and Secondary Education graduates from a state university in the Cordillera Administrative Region. Employers/supervisors from both public and private schools participated. A survey questionnaire was the main tool in data collection focusing on communications and technological skills, pedagogical knowledge and subject expertise. The strengths and weaknesses of the graduates in terms of workplace performance were rated. Results revealed that the general strengths identified by employers include: persistence, adaptability, and leadership skills. On the other hand, the weaknesses include low level of classroom management and communication skills. The findings provided an employers'/supervisors' perspectives, guiding the formulation of recommendations to enhance the curriculum and quality of instruction provided to the teacher education students. Moreover, the study provided valuable insights into the alignment of academic programs with industry standards and highlights area for improvement in preparing graduates for the workplace. Enhancement trainings and instructional remedies are recommended to ensure that all skills necessary in the workplace are mastered.

Keywords: Employers' feedback, teacher education graduates, graduate performance

Constructive Alignment of Higher Education Curricula: The Case of a Philippine State University

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Constructive alignment is an approach to outcome-based education that involves examining curriculum, discipline, and/or course level initiatives. This research sought to assess the match among the institutional outcomes, program outcomes, performance indicators, assessment, evaluation methods, and standards in 20 undergraduate curricula. Qualitative methods like document analysis, curriculum mapping, and online focused group discussions were employed. Findings revealed a high alignment of the curricula in the university, with five out of six components being constructively aligned. The participants underscored the significance of using the institution's vision, mission, and goals as anchorage in crafting the institutional outcomes. The participants highlighted that they based their performance indicators on CHED's policies, standards and guidelines. The programs' syllabi were valuable in determining their assessment methods for their performance indicators. Distinguishing between assessment and evaluation posed a challenge, as both involve measuring learning. Assessment focuses on appraising a student's performance, while evaluation gauges the degree of outcome attainment against set standards. The study found that the outcomes were relevant to 21st-century learning, covering most competencies except for computing technology. Since there is a high constructive curriculum alignment in the university, it is concluded that the five elements of the curriculum, namely, the institutional outcomes, program outcomes unique to a particular specialization, performance indicators, assessment, and standards are highly coherent except for the evaluation methods. It is recommended that evaluation method shall be continually calibrated to ensure its coherence with the other dimensions and that computing technology shall be mainstreamed in the curricula across all programs.

Keywords: Constructive alignment, outcomes, performance indicators, assessment, evaluation methods, standards

Biochemical Profiling and *In vitro* Pharmacological Investigations of *Anodendron borneense* (King & Gamble) Stem Ethanolic Extract

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Medicinal plants have long been recognized as a source of bioactive agents, and they continue to be a valuable resource for developing new drug prospects. In Mindanao, many indigenous plants are still used in treating multiple health issues. One of them is *Anodendron borneense* (King & Gamble) D.J. Middleton, locally known as “Lunas tag-uli” or “himag”. Even with numerous ethnomedicinal uses of this species, its pharmacological properties still need evaluation. This study's primary objective was to understand some of the basis of the ethnomedicinal claims by assessing the extract's antioxidant, antibacterial, and antifungal properties, including a qualitative identification of bioactive compounds. The results showed growth inhibition against the positive bacteria *Staphylococcus aureus* and two fungal organisms - *Candida albicans* and *Aspergillus niger*. Phytochemical screening revealed abundant flavonoids and saponins and a moderate level of steroids but showed weak antioxidant activity. Twenty-five (25) bioactive compounds were reported in many studies to have varied pharmacological activities and importance. The research findings may highlight the significance of the ethnomedicinal value of *A. borneense* and as a potential source of compounds with medicinal importance.

Keywords: Antimicrobial activity, antioxidant activity, GC-MS analysis, Luna tag-uli, Indigenous plant

Sinag-Sipat: Lundayan ng mga Teknik, Estratehiya't Dulong sa Global na Pagtuturo ng MAEd Filipino

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Ang pandemya ay naging malaking hamon sa lahat ng sektor ng pamahalaan. Naging bukas na kamalayan ito sa lahat upang tuwirang magamit ang teknolohiya sa patuloy na pag-ikot ng komersyo, merkado at edukasyon. Ang proyekto ng pamahalaang AMBISYON NATIN 2040 na nagsimula noong 2015 ay isang matagalan at malayuning hakbang sa ikauunlad ng bawat mamamayan na nilahukan ng iba't ibang sektor ng pamahalaan. Sa di inaasahang pandemya, ang industriyalisasyong 4.0 ang naging daan upang humanap ng solusyon at matukoy ang sagot sa hamon ng panahon. Ang kaunlaran sa paggamit ng teknolohiya ay tuluyang nagbukas ng pagkakataon sa lahat na makasabay sa pagbabagong ito. Ngunit, kaakibat ng mga pagbabagong ito ay ang kakulangan ng mga kagamitan partikular sa sektor ng edukasyon. Sa bagong mukha at modality ng pagtuturo't pagkatuto ang pagbuo ng mga kagamitang materyal sa pagtuturo ang nakitang solusyon ng mga opisyal sa edukasyon upang maka-angkop sa pagbabago. Ang SINAG-SIPAT ay isang modyul na makatutugon sa mga mag-aaral sa MAED Filipino sa kursong Pagtuturo ng Filipino na kung saan natukoy ang antas ng pagtanggap at balidasyon nito. Naitala ng mga eskperto na may pinakamataas na antas ng katanggap-tanggap ang nilalaman at disenyo na may 4.8 *mean* maging ng mga gradweyt na mag-aaral sa gayo'y masabing lubos na balido ang nabuong modyul. Ang pagtataya't organisasyon ay higit na katanggap-tanggap din kung kaya't tinanggap ang modyul at iminumungkahing ipagamit upang mataya rin ang kabisaan nito sa mga susunod na pananaliksik. Ang mahalagang ambag ng pananaliksik na ito ang patuloy na magpapaunlad at magpapanatili ng kamalayan sa mga guro't propesor at opisyal sa larang na edukasyon na maaring makagawa pa ng ganitong mga kagamitan sa iba pang mga kurso o sa iba't ibang larang, dulong at treknik ng isang gurong mananaliksik upang higit na mapabuti ang pagtuturo't pagkatuto na naaayon sa umiiral na kurikulum.

Susing-Salita: Estratehiya't Teknik, Dulong, Pagbuo at Balidasyon, Modyul, Sinag-Sipat

Site Evaluation of Flood Evacuation Centers in Southern Leyte, Philippines: A Suitability Analysis Using Geographical Information System (GIS)

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Southern Leyte, despite being the region's second least populated area, faces significant flood-related disaster risks. Recognizing the importance of emergency response, this analytical study evaluated 605 existing flood evacuation sites in Southern Leyte, Philippines, using Geographical Information System (GIS) and weighted overlay analysis. The flood analysis considered factors like digital elevation model (DEM), land use, rainfall, slope, drainage density, and soil type. Suitability analysis factored in slope, elevation, land use, road networks, distance to water sources, electrical suppliers, and proximity to gas stations. The study found that only 3.02% of the area had an extremely high vulnerability to flooding. Suitability analysis revealed that just 0.00038% of the study area (0.63 hectares) in Maasin City was highly suitable for flood evacuation sites. Additionally, 86.52% of the evaluated sites were unsuitable, 12.27% were moderately suitable, 1.21% were low suitable, and none met the high suitability criteria for flood evacuation sites. The abundance of unsuitable evacuation sites in flood-prone areas highlights the necessity for rigorous assessments of makeshift centers. These assessments should verify their suitability as temporary evacuation sites during disasters, strengthening disaster preparedness and response. Local authorities must take corrective actions and make essential enhancements to align centers with their intended functions. Therefore, this study underscores the significance of using spatial distribution and GIS analyses for flood evacuation center identification, offering a thorough assessment before on-site surveys.

Key Words: Geographic Information System (GIS), evacuation centers, Southern Leyte, philippines, flood analysis, suitability analysis, weighed overlay analysis

Development of Pigeon Pea (*Cajanus cajan*) Paste

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The study aimed to develop a low glycemic load sweet paste utilizing pigeon pea (*Cajanus cajan*) and replacing sugar by stevia at various levels (%S): 0%, 2%, 4%, 6%, and 8%. All five treatments were tested for (1) sensory evaluation (appearance, flavor, texture, taste, aftertaste, and general acceptability); (2) physico-chemical properties (pH, water activity, color and texture profile); (3) proximate composition (moisture, protein, fat, carbohydrates and ash); (4) dietary fiber of the most acceptable treatment (5%S) and (5) computation of glycemic load. The most acceptable pigeon pea paste is formulation 5 (F5-8%S) rated as '7-like moderately' by the consumers based on 9-point hedonic scale. In terms of physico-chemical properties, the pH value of the paste has not changed significantly ($p < 0.05$) across all treatments and were categorized as low acid ranging from 6.7 to 5.9. Meanwhile the a_w of F5 is considerably different from all other treatments ($p > 0.05$). Generally, the color of the product is dark (ave. L-value = 33.16) due to the blackish color contributed by pigeon pea, with the average a-value = 7.75 and average b-value = 7.47. The hardness texture are the same in all treatments except for F1 (0%S) that is slightly firm and dry due to the absence of stevia. The % MC of pigeon pea paste decreased from 69.58% to 63.86% as the amount of stevia in the formulation increases. Also, the protein and ash contents decreased as the amount of stevia increases. One serving (20g) of pigeon pea paste provides 2.21grams of dietary fiber equivalent to 8.83% of the Daily Value (DV) and considered as "good source" based on the USFDA guidelines. The developed paste has a low glycemic load (GL = 5) on diet compared to 'mungbean' paste that has a high glycemic load (GL = 67) due to the presence of sugar.

Keywords: pigeon pea, stevia, physicochemical properties, glycemic load, proximate composition.

Advancing Microbial Research Capabilities through the Establishment of ParSU-MTL: (Microbiology Testing Laboratory) in Partido State University

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Partido State University has successfully established the ParSU-MTL (Microbiology Testing Laboratory) through a research grant from the Department of Science and Technology-Philippine Council for Industry, Energy and Emerging Technology Research and Development (DOST-PCIEERD) as part of its Institutional Development Program. The university acquired and installed various laboratory equipment with a total value of P4,868,000.00. The inauguration of the laboratory took place on June 30, 2022.

The laboratory equipment has played a pivotal role in facilitating and completing research projects, resulting in the publication of scholarly articles. Additionally, ParSU-MTL has forged collaborations with UPLB-BIOTECH, focusing on a project aimed at enhancing fish gut nutrition. The laboratory has not only granted access to state-of-the-art equipment but has also conducted training sessions to enhance researchers' skills.

Functioning as a valuable resource for microbiology classes, the laboratory has introduced students to sophisticated equipment and provided a platform for supervised experiments. Moreover, it has offered practical training opportunities for on-the-job training (OJT) students pursuing a Bachelor of Science in Biology and Grade 12 students. The equipment's significance extends to a range of microbiological experiments, encompassing antimicrobial assays, enzymatic analyses, and food analyses. The establishment of the laboratory has not only fostered fruitful research collaborations but has also enriched educational experiences for students, thereby contributing to an enhanced academic environment at ParSU.

Keywords: microbiology, collaborations, research grant, DOST-PCIEERD

Development of Pigeon Pea (*Cajanus cajan*) Curd

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The study developed bean curd using a sustainable source of plant-based protein. Pigeon pea, a plant-based protein source, was utilized as a raw material in combination with soybeans in developing the bean curd product. Five (5) formulations were evaluated: Control (0% pigeon pea, 100% soybeans), F1 (25% pigeon pea, 75% soybeans), F2 (50% pigeon pea, 50% soybeans), F3 (75% pigeon pea, 25% soybeans), and F4 (100% pigeon pea, 0% soybeans). The product tests conducted include (1) physical properties (color, texture profile analyses), (2) proximate composition (moisture, protein, fat, carbohydrates, and ash), (3) sensory evaluation of the different proportions of pigeon pea and soybean curd (color, texture, taste, general acceptability), and (4) production cost through simulation. In terms of color, the results showed that as the amount of pigeon peas increased, the color of the bean curd became darker. In terms of texture, as the amount of pigeon pea increases, hardness decreases while springiness, gumminess, and chewiness increase. One (1) serving (175g) of the most acceptable formulations (F1 and F2) of pigeon pea and soybean curd provides approximately 57.75 grams of protein, which is equivalent to 100% for an average sedentary man and woman, respectively. Bean curd formulations 2, 3, and 4 can be considered low-fat foods, as evident by having 1.85 to 2.94 grams of fat content per 100 grams. For the most acceptable pigeon pea and soybean curds (F1 and F2), the computed daily energy value is 22% per serving based on the Philippine Dietary Reference Intakes (PDRI). Formulations 1 and 2 were acceptable to the consumer and were not significantly different compared to the control. Its production costs (F1 and F2) are lower than the price of the existing tofu (soybean curd) on the market.

Keywords: plant-based protein, bean curd product, pigeon pea, physico-chemical properties, sensory evaluation

Study Habits, Perception on Retention Policy, and Academic Performance of Mathematics Teacher Education Students

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This quantitative study employed a descriptive-correlational research design to investigate the effect of study habits as a moderator variable on the relationship between academic performance and perception on retention policy of mathematics teacher education students. A total of 100 mathematics teacher education students in a state university in Bicol have been surveyed to determine their study habits and perception on retention policy. The general weighted average of the students was requested to determine their academic performance. A survey questionnaire was employed to determine the study habits and perceptions on retention policy of teacher education students.

The moderation analysis results indicate a strong and negative association between academic performance and impression of retention policy, which reinforces the idea that study habits have a moderating role in this relationship. Individuals with varying study habits may interpret the retention policy differently, thereby affecting its influence on their academic achievement. The moderation analysis results offer empirical evidence that study habits influence the relationship between academic performance and perception of retention policy. Recognizing the significance of study habits is important for assessing how academic performance and perception of retention policy impact students' educational results.

Keywords: retention policy, academic performance, study habits, moderation analysis

Satisfaction Index of Pre-Service Teachers on the Student Services Offered in their University

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Student services in higher education institutions are of paramount importance in ensuring a balanced life cycle for the students. Accordingly, support services programs provided to students help increase the number of college students who complete a program of study (U.S. Department of Education). Commission on Higher Education (CHED) reiterates that student affairs and services must systematically and deliberately attain the end objective of producing citizens suited to the aims of the country, Philippines, and humanity. Anchored to the vision, mission, and goals of the university, and to ensure a continuous improvement in the services being offered, this study is conducted to determine the level of satisfaction of the students enrolled in the teacher education programs in the university, and the identify problems and limitations. This will serve as a guide for educators, policymakers, and administrators in ensuring quality student services. This study utilized a quantitative research design, using a survey questionnaire as the main tool in data gathering. A total of 240 pre-service teachers have participated and were selected through random sampling. Results showed that in the university under study, the level of satisfaction vary across the different student services. The students are moderately satisfied with the student services including admission, guidance and counseling, health and wellness, multi-faith, student organizations, information and orientation, safety and security, scholarship and financial assistance, as well as housing and residential services. However, they reported a slight satisfaction on the food and internet facility/connectivity. Results also revealed that male and female students do not vary in their level of satisfaction of the services. Moreover, the students' year level is not related to their satisfaction of the services.

Keywords: students' satisfaction, student services, satisfaction index

Encroachment of Industrial Tree Plantations Affecting Species Diversity and Carbon Density of Claro Cortez and Calaitan Riparian Zones in Andanan Watershed Forest Reserve, Agusan Del Sur

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The riparian zone serves as the interface between the land and a river or stream. These zones play crucial roles in various ecological and environmental processes. This study used a systematic sampling method comprising 12 sampling quadrats and generic allometric equations to assess tree species diversity and estimate the carbon density of riparian zones in the Barangay Claro Cortez and Calaitan section of the Andanan River Watershed Forest Reserve. Two hundred and eighty-eight individuals, represented by 32 species from 17 families and 27 genera, were documented and identified from the study area. The tree species comprised fourteen (14) indigenous, five (5) Philippine endemic, and thirteen (13) exotic species where twenty-one species were listed on the Philippine Red List or the IUCN Red List of Threatened Species. Tree diversity assessment revealed that the riparian areas of the barangay had a moderate Shannon-Weiner diversity index value ($H' = 2.76$). The estimated carbon content was only 85.292 ± 32.836 Mg/ha-1. The findings of this study indicated that a significant portion of the riparian zones of the protected areas had already been converted into industrial tree plantation areas, replacing natural forest species. Policies should be in place to maintain a balance between natural and planted tree species, especially in protected areas, conserve natural biodiversity, effectively capture carbon, and mitigate climate change.

Keywords: Carbon Analysis, Riparian zone, Tree Species Diversity

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