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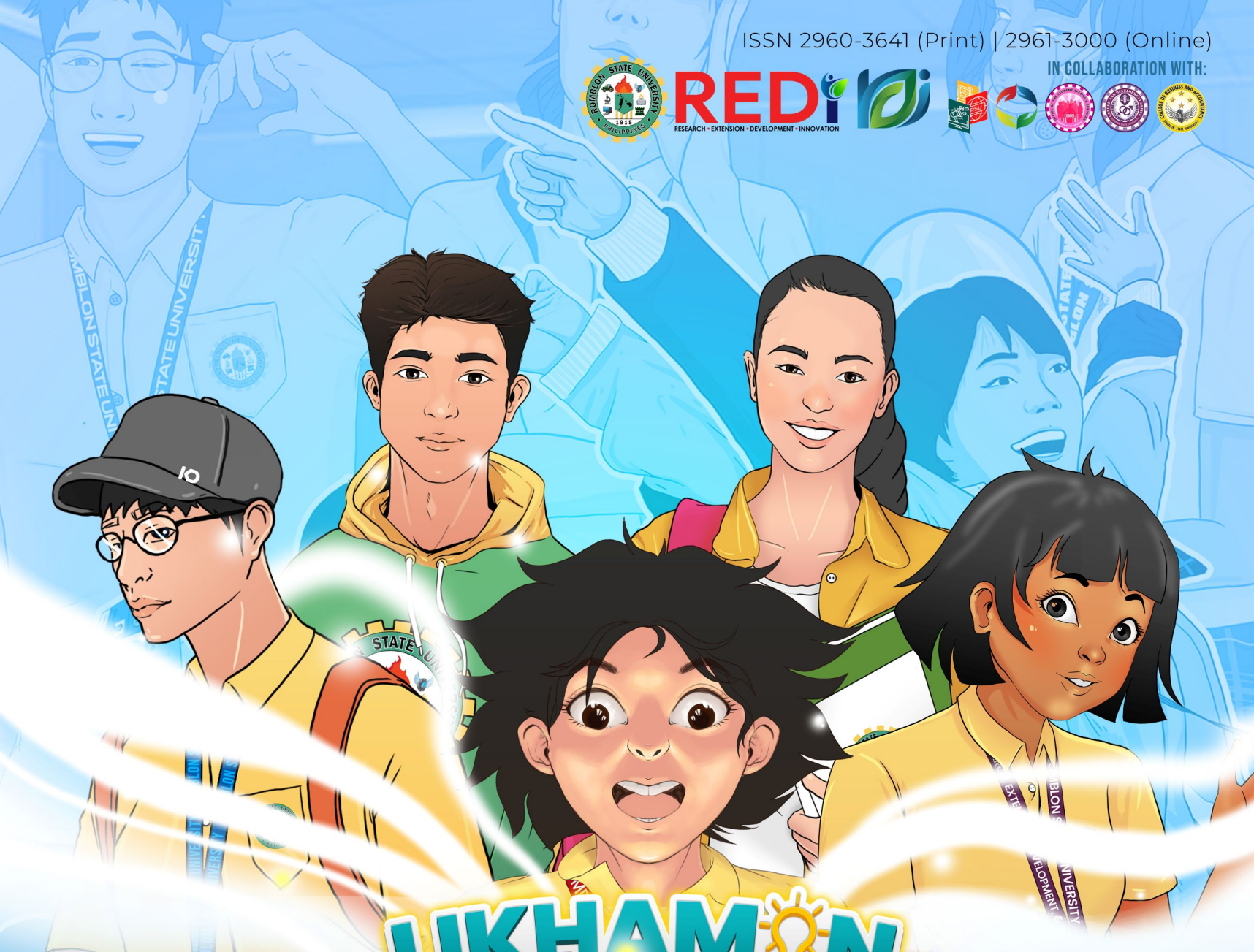

LIKHAMON 2024

BOOK OF ABSTRACTS

MAY 2-3, 2024 | ROMBLON STATE UNIVERSITY

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Engineering, Development and Innovation

Social Science, Humanities and Education-Supervision, Administration, Leadership and Management

Message of the President

Good morning. I'm 'squealing' with joy to see you all here in this amazing event. I hope you understand the pun that goes with my greeting for all of you today.

Now more than ever, we have been experiencing the constantly evolving paradigm of competency in our education sector. We are witnessing a significant shift towards establishing a nexus between the practical, theoretical, and technical dimensions of teaching and learning.

In this modern age of education, co-curricular events such as hackathons and research competitions are becoming increasingly prominent because of the optimal academic environment that itprovides, connecting classroom learnings to real-life scenarios.

Various researches have proven that participation in co-curricular activities is associated with a stronger sense of school belonging, better character development, more social and human capital, superior academic performance, and increased employability chances.

Romblon State University takes immense pride in bringing out the best in our students through their involvement in Likhamon 2024. Likhamon, a portmanteau of 'likha', meaning to create, and 'hamon', a challenge. This two-day event serves as an opportunity for our student researchers and innovators to challenge themselves. Competitions and other events held in this two-day program aim to brainstorm ideas, develop products, and build technologies for social good.

Likewise, through unique and unprecedented ideas of our dynamic youth scientists, we build capacity to accelerate discoveries, and contribute to the solution of pressing problems in our country.

As we look forward to Likhamon 2024, we are equally ecstatic to showcase the research, innovative spirit, and creativity of our students. Our students are a reflection of us, the educators. Therefore, it is our responsibility to pass on the creative spirit and enthusiasm for research and innovation to our students.

As educators, we need to take advantage of these kinds of competitions to flex our students' gifts and skills that they have learned and gained from us. Likewise, winning innovations and products from these events have high chances of becoming patented and trademarked products that can yield profit for entrepreneurs and business enthusiasts.

This year, we are honoring pigs in various forms - in cuisines such as the ever-famous lechon, region-specific pork delicacies; through research in breeding, production, and healthcare; and innovation through related products and services. We have a lineup of exciting events including the Pigandahan: Faswine Show, Photographic Contest, Perfechon: Finest Lechon Competition, Oink Palate: Ultimate Pig Cook-Off, Innovision Expo: Research Development Innovation Showcase, and the PigChing Competition: Pig Research Ideas and Completed Research Studies.

I would like to take a moment to express my deepest gratitude to the Research, Development, and Innovation (RDI) unit for their relentless efforts and unwavering commitment towards enhancing the academic experience for our students. Their dedication to pushing forward this significant academic endeavor has not only enriched our curriculum but also opened up new avenues of learning and exploration for our students. The RDI unit's initiative has undoubtedly instilled a sense of curiosity and a thirst for knowledge among the students, encouraging them to delve deeper into their respective fields of study.

Cheers to the RDI unit. Your efforts are truly making a difference, and for that, we thank you.

In conclusion, Likhamon is the Romblon State University's expression of our steadfast commitment to serve our RSU Community and the MIMAROPA region with honor and excellence.

Let us pig-out on all the knowledge, piggyback on each other's ideas for fruitful discussions, and may all of you 'sow' the seeds of creativity and innovation today.

Let us all come together to make Likhamon 2024 a grand success!

Thank you and good morning.

MERIAN P. CATAJAY-MANI, ED. D., CESE
University President

Message of the Vice President for Research, Extension, Development and Innovation

Welcome to Likhamon 2024: Student Researh Congress; Pitching Competition; and Pigfest. This is the world cup of student research and innovation among 9 campuses of Romblon State University. We are now on the third year and we commit to have this event continued so long as there are research leaders among us who will push the boundaries of research and innovation in our academic community! I would like to express my gratitude to all our participants, sponsors, judges, partner units(ETASO, GAD, OSA, OMPA, CBA, ILMO) and of course the ever-REDI team for making this event possible!

There was this definition of research that captures the essence why we have this congress. Research is a systematic investigation made public. Made public! Which means that all your sleepless nights, all your efforts and the resources that you put into your thesis must end up being communicated to the public. But how are we going to disseminate our research findings if there are no channels, no venues, no opportunities to do so. Thus, as observed, ingbubukbok kag mga thesis sa library (our thesis are gathering dust in our library shelves). This is what LIKHAMON is for, a concatenation of LIKHA (creation) and HAMON (challenge), LIKHAMON aims to provide all of you an avenue to showcase your problem-solving abilities and your research powers, tapping on your creative energies, and harnessing your unlimited potential to be the world's next Mark Zuckerberg of Meta, Elon Musk of SpaceX or Larry Page of google. Well, these icons of innovation literally run the world today!

But we have the likes of them in our own country. Younger. Aggressive. And more good-looking. Here with us today is the CEO of Jeremake, a startup that aims to make science instruments accessible to all. I cannot think of any other keynote speaker who will personify LIKHAMON and STUDENT CONGRESS combined than this young Filipino engineer whose name is already making waves in the international community. We are bringing him to you for you to realize through his experience that you are all unlimited. His journey as an innovator is one for the books!

One significant highlight of the Likhamon 2024 is the launching of the Native Pig R&D Project funded by the DOST-PCAARRD under the Livestock Research Division. Soon, we will have our own brand of native pigs and our Agpudlos Extramural

Campus with its committed and talented animal and crop science researchers will be known as the best producer of high quality native pigs in the country creating limitless opportunities for our native pig raisers in the countryside. We can only do just this much with our meager resources, but with the support of DOST-PCAARRD, we can do more as a research institution. We can make a difference. We can make an impact!

Sometimes, we ignore or lose sight of our strong selling points because we are busy watching what's going on with our neighbors. Halos ganyan din ang ating mindset pagdating sa ating mga native products, lalong Lalo na sa ating native animals, like pig, chicken, goat, etc. But the trend now is going native. Pag native, mas mahal! Sanaol native! Kidding aside, we see our native pig project as the unifying theme where all our other expertise in business, engineering, IT, education, criminology and even fishery can come together and make the native pig project the banner program of Romblon State University!

There are so many things that will happen simultaneously today, as our students have diverse interests, so LIkhamon is a many splendored festivity. I encourage everyone to participate in the congress activities such as paper and poster presentations, pitching competitions, and networking sessions. Go beyond the idea that this is a competition, but instead, look at LIkhamon 2024 as a platform to learn from each other and foster connections. Seize this opportunity to showcase your talents and highlight your meaningful contributions to your various fields of discipline.

In 2023, the Philippines ranked 56th out of 132 economies surveyed in the Global Innovation Index. LIKHAMON 2024 is our university's initiative to contribute to the national innovation agenda and this global ranking! RSU is now an IPOPHIL's franchise for Innovation and Technology Support Office. We can now assist you in securing applications for your inventions and other intellectual properties. Likewise, RSU will be a technology business incubator soon, especially in the area of industrial manufacturing courtesy of our engineers snd their school factories.

What we showcase today reflects the future of our University research and innovation ecosystem. Let us celebrate with pride this festival of talents and creativity towards the flourishing of research culture in the university and the attainment of our vision - as a research-based academic institution.

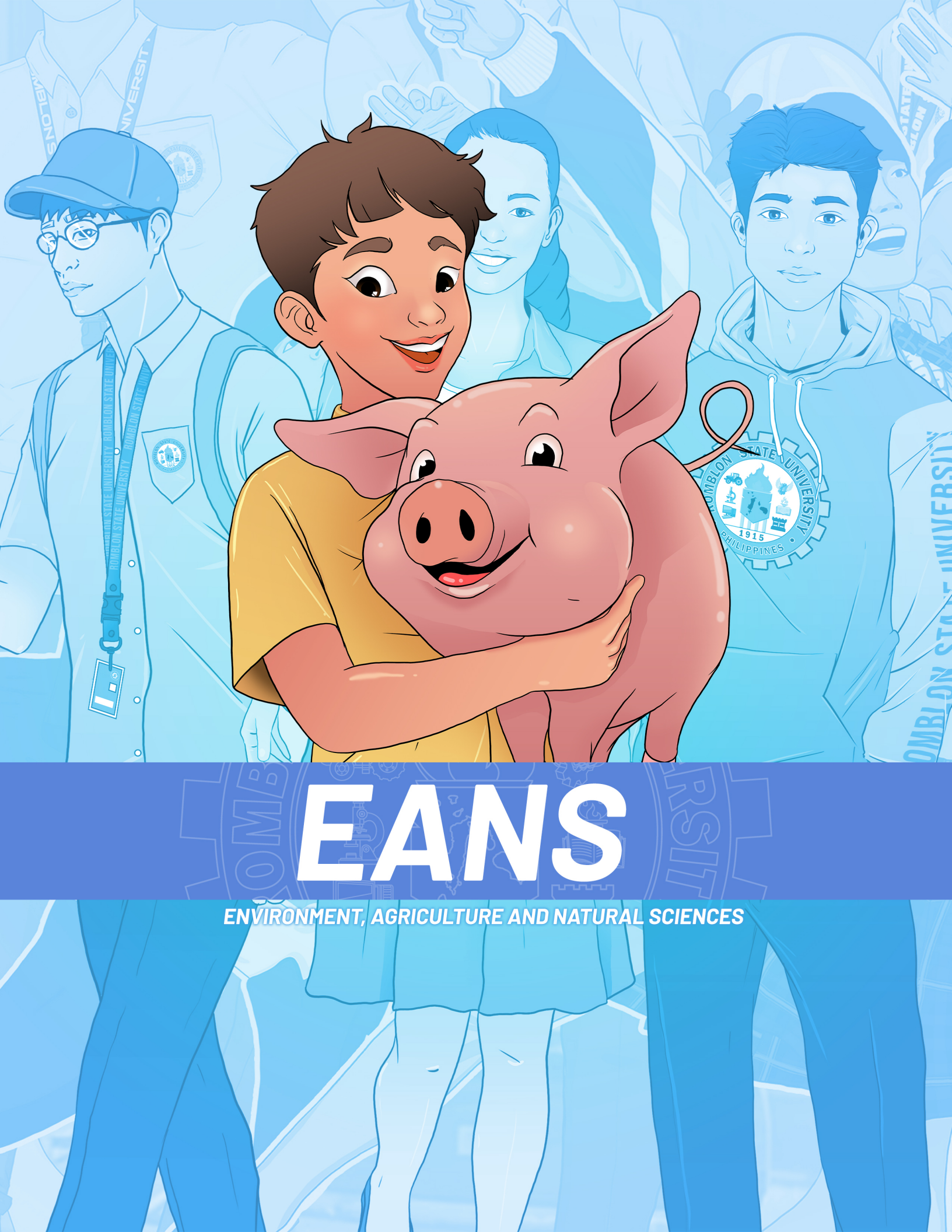
What we showcase today reflects the future of our University research and innovation ecosystem. Let us celebrate with pride this festival of talents and creativity towards the flourishing of research culture in the university and the attainment of our vision - as a research-based academic institution. Malayo pa pero malayo na! There is so much more to do.

Isang malakas na palakpakan para sa ating mga
future scientists and innovators!

Isang masigabong palakpakan para sa
LIKHAMON 2024!

Thank you and good morning!

EDDIE G. FETALVERO. PH.D
Vice President for Research, Extension,
Development and Innovation



EANS

ENVIRONMENT, AGRICULTURE AND NATURAL SCIENCES

BIO-EFFICIENCY OF INEDIBLE BIOMASS WASTE AS SUBSTRATE FOR MUSHROOM PRODUCTION

Elyssa Mae R. Aquino*, Jesabel E. Gacu, Joy G. Mojado, Aljoy Vicente, Jolyn F. Visca, & Jayson F. Enciso, M.Sc.

Romblon State University – College of Arts and Sciences

Inedible plant biomass (IPB) waste as a substrate for mushroom production can represent a source of energy and carbon. Therefore, instead of burning inedible plant wastes, it can be used to produce mushrooms that will not only save the environment by minimizing agricultural waste but can also help skilled farmers earn additional income from mushroom production. In this regard, the study IPB wastes as a substrate for growing Oyster mushrooms (Pleurotus ostreatus), which is a very popular commodity in the Philippines due to its ease of growth. This study aimed to determine the bio-efficiency of IPB substrate in mushroom production. The study was laid out following a 4 × 9 Single-Factorial Design (SFD) in Complete Randomize Design (CRD) with four (4) treatments and nine (9) replications: T1= Tiger grass (TG) × Cogon grass (CG), T2= Tiger grass (TG) × Rice straw (RS), T3= Rice straw (RS) × Cogon grass (CG), T4= Rice straw (RS) × Cogon grass (CG) × Tiger grass (TG). Results showed that T3 = Rice straw (RS) × Cogon grass (CG) is the most efficient substrate for cultivating oyster mushrooms based on yield (2,262.9 g). Hence, combining rice straw (RS) and cogon grass (CG) proved an effective alternative substrate for mushroom production. It could give the highest yield of white oyster mushrooms in a week, and maintain productivity until the third week of harvest. Moreover, it requires a low initial investment, making it an ideal option for farmers that can generate passive income.

Keywords: agricultural waste, mushroom, inedible plant biomass, substrate, yield

CONNECTING ETHNOBOTANY AND SDG 2: EXPLORING THE EDIBLE PLANTS USED BY DIFFERENT TRIBAL GROUPS OF MANGYAN IN MINDORO ISLAND, PHILIPPINES

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Romblon State University – College of Arts and Sciences

The Mangyan tribe, comprising various groups like Hanunuo, Alangan, and Buhid, among others, inhabits Mindoro Island, Philippines, with an estimated population of 280,001. This study explores the ethnobotanical knowledge of edible plants from different tribal groups of Mangyan that aligns with SDG 2 - Zero Hunger. Nazareno (2019) recorded 14 wild plant species consumed by Hanunuo and Buhid Mangyans, primarily fruits due to declining traditional knowledge. Villanueva and Buot (2020) highlighted Alangan practices, focusing on root crops, grains, legumes, and cultivated vegetables, showcasing a diverse food system. However, there's a gap in understanding edible plants among other Mangyan groups like Iraya, Gubatnon, Bangon, and Tadyawan. Ethnobotanical studies play a pivotal role in achieving zero hunger by documenting traditional knowledge, preserving biodiversity, promoting food security, supporting indigenous communities, and enhancing sustainable agriculture. By understanding which plants are utilized for sustenance and how they are cultivated and consumed, ethnobotany provides crucial insights into culturally appropriate and sustainable food systems. These insights contribute to policy-making, community-based conservation efforts, and the advancement of research, all of which are essential for achieving SDG 2 targets, particularly in Indigenous territories where traditional knowledge is deeply intertwined with food security and sustainability. Thus, embracing and integrating ethnobotanical knowledge into broader strategies for achieving zero hunger is imperative for creating resilient and equitable food systems worldwide.

Keywords: ethnobotanical knowledge, zero hunger (SDG 2), Indigenous communities, sustainable agriculture, food security

ACCEPTABILITY LEVEL OF HANDMADE PAPER FROM SCREW PINE (Pandanus utilis) FIBER AS A SUBSTITUTE FOR WOOD-BASED PRODUCTS

Rodel Rotoni, Romel Rabida, & Gracezy Ann Ramiro

Romblon State University – Cajidiocan Campus

This study aimed to assess the acceptability level of handmade paper from Screw Pine (Pandanus utilis) fiber as a substitute for wood-based products. The characteristics of handmade paper were examined in terms of color, texture, tensile strength, and opacity, while its overall acceptability was evaluated. A quantitative-experimental approach was employed, involving 30 participants and utilizing checklists for data collection. Statistical analysis, including percentage and mean, was conducted. The results showed variations in color characteristics having a light brown color. The texture was consistently described as moderately rough, while the tensile strength is high, and the opacity is in a medium degree. In terms of acceptability, the color receives the highest rating being highly accepted. The texture, tensile strength, and opacity were deemed acceptable while the overall satisfaction from the respondents was highly accepted.

Keywords: screw pine, handmade paper, fiber, wood-based products, *Pandanus utilis*

WASTED: ASSESSMENT OF FOOD WASTES IN SELECTED FOOD ESTABLISHMENTS IN THE MUNICIPALITY OF ODIONGAN, ROMBLON, PHILIPPINES

Monica F. Alvar, Johana Fe F. Baricuatro*, Alykha Vaughn Fajutagana, Kathrine Grace M. Gabute, Johaira B. Sultan, & Alwin F. Maulion

Romblon State University – College of Arts and Sciences

Food waste is a serious global problem that needs immediate attention. This study evaluated the amount of food waste generated and its impacts in the towns of Odiongan, Romblon, Philippines, and beyond. Initially, food wastes were collected and weighed from 25 food establishments in the span of two months. Subsequently, survey questionnaires were distributed to 50 individuals to determine the precise economic and social aspects contributing to food waste. Data analysis revealed that an average of 55 kilograms of food is discarded daily, totaling approximately 2,716 kilograms over two months. This was significantly correlated to the time constraints experienced by the customers and their reluctance to take leftovers. To address this, most establishments used the leftover food to feed animals. While there is awareness about the environmental impact of food waste, knowledge gaps exist, especially regarding lesser-known impacts like biodiversity loss. This study serves as a catalyst, propelling momentum for exploration and decisive action across various sectors, driving collaborations and collective efforts toward sustainability and progress.

Keywords: economics, environment, food, food wastes, global problem, Philippines, sustainability

ISOLATION AND IDENTIFICATION OF Arbuscular mycorrhizal FUNGI (AMF) IN MARBLE MINE SITE IN ROMBLON ISLAND, PHILIPPINES

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Emer C. Gestiada, M.Sc. [2], & Jayson F. Enciso, M.Sc.[1]
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The Philippines has several abandoned mine tailing areas that require immediate rehabilitation. The marble mine site in Romblon Island, Romblon, was among the top 10 abandoned mines in the Philippines. Arbuscular Mycorrhizal Fungi (AMF) are soil microbes that colonize many plant roots and create bonds with the soil. AMFs are widely utilized as biofertilizers due to their symbiotic relationship with numerous plant species, enhancing nutrient uptake, alleviating biotic and abiotic stress, and reducing soil compaction for plant growth. This study aimed to isolate and identify AMFs at the two marble mine sites on Romblon Island. Site A was located at the Cajimos Quarry site and Site B was situated at the Ilauran Mining Site. Eight samples of plants were found and collected randomly within the quadrat at the studied sites. Rhizospheric soil was collected from plant roots for spore count and rhizospheric soil pH. A total of 18 plant samples were collected from two sites. Results show Site B has the highest spore count and mycorrhizal colonization. In site B, Corn (*Zea mays*) has the highest spore count, totaling 183 spores per gram. And, Permolle fern (*Bidens frondosa*) has the highest percentage of mycorrhizal colonization, at 100%. Glomus spp. and Scutellispora sp. were identified as the predominant genera. Glomus spp. being the most abundant AMF species from two marble mine sites. Site B shows the highest rhizospheric soil pH (pH 8.08) from Oriental trema (*Trema orientalis*). Further studies about understanding the nature of AMF in alkaline soil should be conducted.

Keywords: Arbuscular Mycorrhizal Fungi, identification, isolation, marble, mine Site

DEVELOPMENT OF PHYTOTHERAPEUTIC AGENT USING Ulva intestinalis AGAINST PATHOGENIC MICROBES

Mark Joel M. Mores

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To develop an alternative phytotherapeutic agent against Aspergillus niger, Candida albicans, Escherichia coli, and Staphylococcus aureus, this study determines the antimicrobial activity of *Ulva intestinalis* extract in vitro. Crude extract of *U. intestinalis* exhibits a strong inhibitory effect against *A. niger* (12.0±2.65), C. albicans (8.3±2.08), E. coli (6.3±0.51), and S. aureus (10.0±2.0). Furthermore, the results of this study showed that all microbes exhibit resistance to Amoxicillin (AMX) and Nystatin (NYS) with a zone of inhibition from 6.1 mm to 16.0 mm. Thus, AMX and NYS are no longer effective for treating infection caused by *A. niger, C. albicans, E. coli*, and *S. aureus*. On the other hand, *U. intestinalis* extract could be further appraised for its potential use in managing antibiotic-resistant microorganisms. However, *U. intestinalis* crude extract was classified as bacteriostatic and fungistatic since recolonization of all microbes was observed after 24 hrs. of incubation.

Keywords: antibacterial activity, *Ulva intestinalis*, bacteriostatic, fungistatic

Trichoderma - INOCULATED INEDIBLE RICE (Oryza sativa) BIOMASS AS SUPPLEMENTAL HYDROPONIC SOLUTION IN YIELD PERFORMANCE OF LETTUCE (Lactuca sativa cv. Batavia) GROWN IN ACTIVE HYDROPONICS SYSTEM

Demetrio, Carlo Miguel R., Fiedacan, Daniella Jeorge F., Galicia, Ericka Gwyneth F., Guilla, Shekeinah R.*, Salsona, Rickmhae Anne G., & Enciso, Jayson F. M.Sc.

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Inedible rice (*Oryza sativa*) biomass (IRB) is one of the most common agricultural wastes in the Philippines. To promote resource recovery within the Philippine agricultural sector, this study explored the efficacy of composted inedible rice biomass (IRB) with Trichoderma Microbial Inoculant (TMI) as a supplemental nutrient solution for hydroponically-cultivated lettuce (*Lactuca sativa* cv. Batavia). The researchers used a one-factorial in a Complete Randomized Design (CRD) with five experimental treatments and one control treatment (T1: 100% IRB, T2: 20% IRB + 80% SNAP, T3: 40% IRB + 60% SNAP, T4: 60% IRB + 40% SNAP, T5: 80% IRB + 20% SNAP, and Control: 100% SNAP solution). Treatment 2 (20% (40 mL) IRB + 80% (2 mL SNAP A + 2 mL SNAP B) SNAP) exhibited a significant increase in shoot dry weight, potentially indicating enhanced photosynthetic activity. However, no statistically significant differences were observed in chlorophyll content, number of leaves, plant height, leaf length, leaf width, rosette diameter, fresh weight, or growth rate across the various IRB concentrations. Interestingly, Treatment 1 (100% (200 mL) IRB) yielded the highest gross profit margin, suggesting a potentially cost-effective approach. In conclusion, this study suggests that IRB can be a viable and cost-effective supplement for hydroponic lettuce production, with the optimal concentration requiring further investigation.

Keywords: hydroponics, inedible plant biomass, lettuce, nutrient, SNAP solution, *Trichoderma* microbial inoculant

ADDRESSING DATA GAPS: MONITORING THE ABUNDANCE AND DISTRIBUTION OF SEAGRASS SPECIES IN BUDIONG MARINE PROTECTED AREA, ODIONGAN, ROMBLON

Aira Lee Panoy*, Ayesah Rojaine F. Ferrancol, Almira Ruth M. Mazo, Elcanah Joy F. Bernardo, & Ivy Rose D.S. Gabinete

Romblon State University – San Agustin Campus

The Budiong Marine Protected Area (BMPA) has outdated data regarding the condition of its seagrass meadows. Last November 2023, a comprehensive study was conducted to systematically monitor and assess the abundance and distribution of seagrasses in BMPA. The project aimed to address data gaps, monitor the current status of the seagrass ecosystem in BMPA, and provide valuable insights for future management and conservation initiatives. This study employed a modified field sampling design using eight intertidal fixed transects with 5 sampling stations of 0.5 x 0.5 m quadrat, placed at ten-meter intervals along the 50 x 50 m site. The results indicate a decline from 2018 to November 2023, only documenting two out of the four species that were previously reported: *Cymodocea rotundata* and *Thalassia hemprichii*. Furthermore, the findings suggest that the condition of the seagrass in BMPA was poor, with a cover percentage of 24.06%. The disappearance and depletion of seagrass species can be ascribed to environmental stressors, such as strains from neighboring communities or wave-induced stress and currents. Therefore, as one of the most significant coastal ecosystems, studies on local seagrass should be increased in focus of conservation, monitoring, management, and improvement, hence a comprehensive and targeted investigation was recommended.

Keywords: abundance, cover percentage, distribution, fixed transect design, seagrass

PHYTOTHERAPEUTIC POTENTIALS OF Lithothamnion glaciale AGAINST PATHOGENIC MICROBES

Jona Mae M. Magramo

Romblon State University – San Agustin Campus, Department of Fisheries

This study determines the antimicrobial activity of crustose coralline algae *Lithothamnion glaciale* extract (LGE) against *Aspergillus niger, Candida albicans, Escherichia coli* and *Staphylococcus aureus*. Crude extract of L. glaciale exhibit a strong inhibitory effect against A. niger (9.3±0.58), C. albicans (11.7±2.52), E. coli (12.7±2.08), and S. aureus (11.3±0.58). Furthermore, the results of this study showed that all microbes exhibit resistance to Amoxicillin (AMX) and Nystatin (NYS) with a zone of inhibition from 9.0 mm to 15.3 mm. Thus, AMX and NYS are no longer effective for treating infection caused by *A. niger, C. albicans, E. coli,* and *S. aureus*. On the other hand, LGE could be further appraised for its potential use in managing antibiotic-resistant microorganisms. However, *L. glaciale* crude extract was classified as bacteriostatic and fungistatic since recolonization of all microbes was observed after 24 hrs. of incubation.

Keywords: Crustose coralline algae, antibacterial activity, bacteriostatic, fungistatic

HARNESSING COMMUNITY INVOLVEMENT FOR EFFECTIVE CORAL REEF MONITORING: ASSESSMENT OF CRESTA DE GALLO REEFS

Jordan F. Dorado, Cecil Gadon, & Leo Benasa
Romblon State University San Andres Campus

Coral reefs are vital for Filipino survival and marine biodiversity. This ecosystem faces growing threats from environmental changes and human activities like tourism and coastal development. To address these challenges, we explored the potential of citizen science to monitor coral reefs and implement sustainable management practices. Using the Alwan method for citizen science, we assessed the current status of reefs around Cresta de Gallo island. As to reef quality, poor hard coral cover (9.2%) and butterflyfish abundance (17.4) were found, while average quality was found for butterfly species richness (5.0). Feather stars (23.2) represent the average quality of currents and water, and blue starfish (8.3) indicate suitability for coral recruitment. The level of compliance with legal provisions was poor, shown by giant clam abundance (1.1), while there are fewer to no threats in terms of crown-of-thorns starfish (COTS) (0) predation in the reef areas. These results indicate suboptimal health of the coral reef, with low hard coral cover and butterflyfish abundance, suggesting potential ecosystem degradation. Despite areas of average quality, poor compliance with legal regulations and low coral cover are areas of concern for reef resilience, while the absence of threats like COTS predation suggests resilience. This study revealed suboptimal reef health and poor regulatory compliance, underscoring the importance of targeted interventions to mitigate degradation and enhance the resilience of reefs. Future initiatives should focus on strengthening conservation efforts, enhancing community involvement in monitoring, and addressing critical threats to improve reef health and regulatory compliance.

Keywords: coral reefs, citizen science, marine biodiversity, reef health, environmental threats

USE OF CUCUMBER EXTRACT AND BEESWAX AS AN ANTI-DANDRUFF HAIR TREATMENT

Joana Marie C. Dalisay, Angelica Janaiza G. Gaca, Nathalie Mae P. Aquino, Myrene Joy V. Patajo*, & Dawn Eriel Magramo

Romblon State University – Laboratory Science High School

Dandruff is a common condition that causes the skin on the scalp to flake. It isn't contagious or serious. Cucumber (Cucumis sativus L.) belongs to the Cucumis genus in the Cucurbitaceae family. Beeswax is the substance that forms the structure of a honeycomb. This study was conducted to determine the effectiveness of Cucumber extract and Beeswax as an anti-dandruff hair treatment. In particular, this study seeks to answer the level of effectiveness of this hair Treatment in terms of Appearance, Smell, and smell. This study was composed of five treatments to determine the effectiveness of cucumber extract and beeswax as an anti-dandruff hair treatment. The experimental treatment was as follows: Treatment 1 (50 ml cucumber, 50 ml beeswax 25 ml of water), Treatment 2 (30 ml of cucumber extract, 25 ml of beeswax and 15 ml of water), Treatment 3 (25 ml of cucumber extract, 30 ml of beeswax and 15 ml of water) Treatment 4 (20 ml of cucumber extract, 20 ml of beeswax and 10 ml of water) and Treatment 5 (25 ml of cucumber extract and 20 ml, 10 ml of water). The result of this study said that in terms of appearance and smell treatments 4 and 5 are the most effective treatments with a mean of 3.62 and in terms of silkiness, treatment 4 is the most effective treatment with a mean of 4.24. Further, this study is needed to improve the quality of the Hair treatment to increase the effectiveness level, and their marketability is recommended.

Keywords: cucumber, beeswax, treatment, dandruff

DIVERSITY AND MANGROVE FOREST STRUCTURE OF ROMBLON ISLAND AND SIBUYAN ISLAND PHILIPPINES

Livelyn Flaviano, Jaypee Royo, Jenly Minas, & Sharie Magada

Romblon State University – San Agustin Campus

The coastal marine ecosystem like mangrove forest is one of the underrated research areas in the province of Romblon. The majority of the researchers' eyes across the country were focused on the terrestrial, particularly in Sibuyan Island. Although Romblon Island and Sibuyan are bounded by critical corridor passages and seas in the Philippines, studies on its mangrove biodiversity and forest structure are scant. Hence, this study was realized. The present study was conducted to determine mangrove composition, diversity, evenness, dominance, and forest structure in two major islands in the province. A total of 27 species under 14 families were identified from Romblon and Sibuyan Island. *Rhizophora apiculata*, *R. stylosa*, *Sonneratia alba*, *Lumnitzera littorea*, and *Xylocarpos granatum* were the most common species. Meanwhile, *Rhizophora apiculata*, *Avecinnia rumphiana, Lumnitzera littorea*, and *Sonneratia alba* were the dominant species. On the other hand, *Avecinni marina*, *Rhizophora apiculata, Sonneratia alba*, and *Lumnitzera littorea* were the densest species on the two islands. *Rhizophora stylosa*, *R. aiculata*, *Lumnitzera littorea*, and *Nypa fruticans* recorded the highest regeneration value. In terms of diversity, Cajidiocan and Magdiwang were highly diverse compared to the sites.

Keywords: diversity, forest structure, Romblon Island, Sibuyan Island

ANTIBACTERIAL POTENCY OF CATFISH MUCUS EXCRETION AGAINST PATHOGENIC MICROBES

Mary Mae Ribot

Romblon State University – San Agustin Campus

This study determines the antimicrobial potential of catfish mucus extract (CME) against *Aspergillus niger, Candida albicans, Escherichia coli* and *Staphylococcus aureus*. Results of the study showed that all pathogenic microbes were susceptible to CME. Zone of inhibition exhibits a strong inhibitory effect against *A. niger* (17.0±3.61mm), *C. albicans* (19.3±15.3mm), *E. coli* (40.7±1.53mm), and *S. aureus* (11.7±0.58mm). Furthermore, results of this study showed that all microbes exhibit resistance to Amoxicillin (AMX) and Nystatin (NYS) with the zone of inhibition from 9.3 mm to 13.7 mm except on *A. niger* (17.6±4.16mm) and *E. coli* (30.3±1.53mm). Thus, AMX and NYS are no longer effective for treating infection caused by *C. albicans*, and *S. aureus*. On the other hand, CME could be further appraised for its potential use in managing antibiotic-resistant microorganisms. In addition, CME was classified as bacteriocidal and fungicidal since no recolonization of all microbes was observed after 24 hrs. of incubation.

Keywords: *Clarias gariepenus*, mucus extraction, bacteriocidal

CORAL REEF STATUS OF MAJOR ISLANDS IN ROMBLON ISLAND ARCHIPELAGO: A BASELINE FOR COASTAL RESOURCE MANAGEMENT IN ROMBLON ISLAND AND SIBUYAN ISLAND, PHILIPPINES

Patric Macuyas, Vincent Manipol, & Prince Valerie Bhabe Manalon

Romblon State University – San Agustin Campus

Romblon Island and Sibuyan coral reefs are extensive and can be found in almost every part of these two islands. It provides a range of direct and indirect services to the island, including food, livelihoods, leisure, erosion control, and high levels of biodiversity. Nevertheless, it was exposed to various natural and human stressors, resulting in the deterioration of interconnected ecosystems and increased poverty among coastal communities. Despite the rich marine resources of the province, the coral reef in this area was not monitored. Hence, this study was realized and aims to assess the coral reef of the two islands and its satellite islands. The survey was conducted on November 2023 and April 2024 using the Alwan Method survey. The study revealed that the coral reef is classified as being in Hard Coral Cover Category C, while Butterflyfish abundance was classified as Category D and Butterflyfish Species Richness fell into Category C. In terms of threats to Crown of Thorns abundance, it was classified as falling under Category A. The Population of giant clams fell under Category C, while the current and water quality were classified as Category C. For the suitability for baby corals, the two islands were classified as Category D. Currently, there is no concrete baseline data that has been established on these islands. Thus, it is recommended that at least an annual monitoring of the coral and reef fish communities should be continued. Areas with excellent coral reef conditions should be declared as protected areas to conserve their status and protect them. The promising results in some areas are highly recommended for diving and snorkeling for tourism purposes.

Keywords: Alwan method survey, assessment, CPCe, fish abundance, fish biomass

PAPAYA LATEX: A DIETARY GROWTH PROMOTER SUPPLEMENT OF TILAPIA (Oreochromis sp.)

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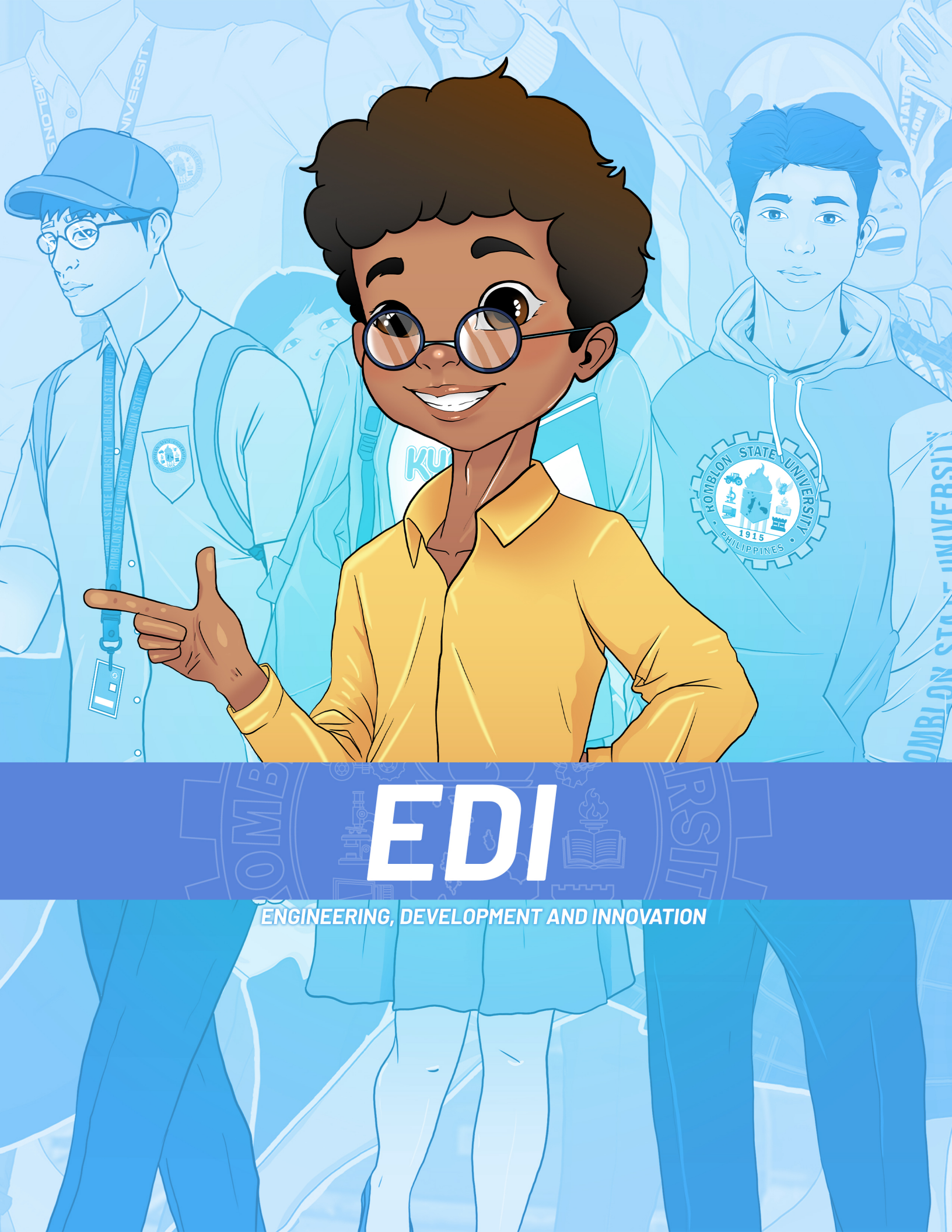
The Effect of papaya (Carica papaya) latex as a dietary growth promoter supplement was determined on the growth characteristics and survival rate of tilapia (Oreochromis sp.). This study utilized experimental research with four treatments replicated four times over 60 days to examine the impact of various supplemental feeds on the growth and survival rate of tilapia (*Oreochromis sp*) in 12 compartments of hapa nets, each measuring 1m x 1m x 1m. Conducted at Romblon State University's Santa Maria Campus in concrete tanks, the experiment employed a Complete Random Design (CRD). Treatments were labeled and replicated, with each hapa net stocked with 6 tilapia. The duration of the study spanned two months from September to November 2023. Results showed that Treatment 2 consistently exhibited the highest growth rates, maintaining the highest length and weight across all three sampling periods, with no mortality observed (i.e., 100% survival rate) throughout the study period. Treatment-2 recorded the highest length gain (12.52 cm) and weight (34.33 g) over the 60-day culture period. Statistical analysis showed significant differences in growth rates among sampling periods for both length and weight. These findings suggest the efficacy of papaya latex-supplemented feed in enhancing tilapia growth. Recommendations for future research include extending the study duration to assess long-term effects, analyzing the nutritional composition of papaya latex, evaluating its impact on water quality, exploring potential medicinal properties, assessing environmental sustainability, and facilitating knowledge transfer to aquaculture practitioners and stakeholders.

Keywords: Tilapia, papaya latex, hapa net, kuhol, rice bran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DESIGN AND DEVELOPMENT OF ARDUINO-BASED ULTRASONIC SOUND WAVE FOR PEST CONTROL AND AUTOMATIC LIQUID FERTILIZER PLANT SPRAYER WITH SMS-BASED LOW LIQUID LEVEL NOTIFICATION

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Pest infestation is one of the primary agricultural concerns nowadays. Pests destroy crops, reducing agricultural earnings. Traditional pest control and fertilizer application uses chemical pesticides, time-consuming, and may harm humans and the environment. The study shows that electronic pest control and liquid fertilizer application can be automated to solve these concerns. An Arduino-based automated liquid fertilizer sprayer and pest control device using ultrasonic sound waves was created. The objectives were to increase agricultural nutrient management accuracy, efficiency, and efficacy while reducing environmental impact and physical labor. According to selected respondents, the study project's prototype was reliable, usable, efficient, and maintained. It was concluded that the device would aid agriculture concerns. The gadget emits an ultrasonic sound wave to control garden pests and automates liquid fertilizer administration to absorb nutrients in specific farms. In line with more sustainable agriculture, the project's proponents recommended adding a solar-powered component to ensure continued operation. They also recommended a mobile app that lets farmers adjust liquid fertilizer procedures to crop needs and weather and customize ultrasonic pest control frequencies for optimal results. They also suggested using a soil nutrient sensor for better fertilizer control and soil health. These aim to increase agricultural efficiency, sustainability, and reliability.

Keywords: automated pest control, Arduino-based device, liquid fertilizer sprayer, sustainable agriculture

TRIPSY: AN ANDROID-BASED APPLICATION FOR TRICYCLE BOOKING AND DISPATCH SYSTEM IN THE MUNICIPALITY OF ROMBLON

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Romblon State University-Romblon Campus

This study addresses the escalating demand for efficient transportation services in the Municipality of Romblon through the introduction of TRIPSY—an Android-based application designed to optimize tricycle booking and dispatch. The primary objectives were to develop a user-friendly application that caters to passengers, tricycle drivers, and administrative oversight. Adherence to ISO/IEC 25010:2011 standards for software quality was a paramount consideration. The Waterfall SDLC was used for it is systematic and structured manner. Also, convenience sampling was utilized as a sampling procedure due to time constraints and the availability of respondents. The study validated results through a meticulous evaluation process. For one hundred (100) passengers, the application demonstrated a remarkable overall acceptability with a weighted mean of 4.39, indicating a Strongly Agree response. Key attributes like functional suitability, performance efficiency, and usability were scrutinized and found to be exemplary. The lowest score, observed in system reliability, calls for targeted improvement. Similarly, ten (10) tricycle drivers reported an outstanding acceptability score of 4.67, with compatibility identified as a potential area for enhancement. Administrative oversight, crucial for system functionality, confirmed TRIPSY's efficiency aligning with ISO/IEC 25010:2011 standards. In conclusion, TRIPSY stands as a robust solution for tricycle booking and dispatch in Romblon. The system's acceptability among passengers and drivers, coupled with alignment with ISO/IEC 25010:2011 standards, underscores its efficacy. Recommendations for improvement in system reliability and compatibility pave the way for future enhancements. Beyond immediate benefits, TRIPSY has the potential to revolutionize local transportation systems, offering increased revenue for drivers and improved satisfaction for passengers.

Keywords: android-based, dispatch system, system evaluation, transportation, tricycle

HEALTHY U: A WEB-BASED HEALTH MONITORING SYSTEM WITH DATA ANALYTICS FOR ROMBLON HEALTH UNIT ROMBLON, ROMBLON

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The researchers found out that the primary issues of every Barangay Health Worker (BHW) are the proper manner of handling the information, such as finding the patient's history of medical records, patients' previous visits, and prescriptions wherein Barangay Health Workers are still using the manual process. This study aims to develop a website to monitor the patient's health information in Romblon Health Unit (RHU), Romblon, Romblon. Furthermore, the website will provide centralized data with data analytics and a user-friendly graphical user interface for the BHW and RHU so they to learn and understand the system easily. The proponents of the study used the ISO/IEC 25010:2011 standard to evaluate the functional suitability, performance efficiency, reliability, usability, compatibility, maintainability, portability, and security of the website. By this, the instrument was verified and tested. The findings of the study show that the developed system obtained a verbal interpretation of "Strongly Agree" as an impression of the garnered overall weighted mean of 4.60 acceptability rate. In summary, the Healthy U website shows that the BHW and RHU were very satisfied with the result of this study. Moreover, the majority of the respondents believed that HEALTHY U is widely accepted and ready to use in fulfilling its aim of monitoring the health status and health information of the patients in Romblon Health Unit Romblon, Romblon.

Keywords: data analytics, health monitoring, centralized data, health unit, barangay health workers

IDIMO: AN INTERACTIVE DOCUMENTED INFORMATION MANAGEMENT OFFICE SYSTEM TO OPTIMIZE THE DIGITAL DOCUMENT FILING AND RETRIEVAL FOR THE INSTITUTE OF INFORMATION TECHNOLOGY (IIT)

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This project focuses on developing iDIMO (Interactive Documented Information Management Office System), a user-friendly document management system tailored for the Institute of Information Technology (IIT). The primary objective is to optimize digital document filing and retrieval to support the successful implementation of the RSU Quality Management System, specifically addressing Section 7.5 on documented information management. The system targets faculty, staff, and administrators to streamline document handling processes. Employing an agile model during development offered flexibility in meeting system requirements. During the development of the web application, the proponents primarily utilized a laptop with robust specifications to guarantee the creation, design, and implementation of a high-quality program. Google Chrome served as the primary browser for testing the web application, and Canva facilitated the application's design. Front-end development relied on Figma and Visual Studio Code for JavaScript and TypeScript, while PostgreSQL served as the database, and ReactJS, NodeJS, and NextJS were employed as front-end and back-end frameworks. These software choices ensured the efficiency, effectiveness, and user-friendliness of the web application. The evaluation encompassed feedback from (16) sixteen respondents, including (1) one ODIMO and (1) one Director of IIT, along with (14) fourteen IIT faculties. Results indicate the overall perception of FUNCTIONAL SUITABILITY (average weighted mean: 4.33), PERFORMANCE EFFICIENCY (4.26), COMPATIBILITY (4.37), USABILITY (4.41), RELIABILITY (4.4), and SECURITY (4.34). The findings strongly indicate respondents' agreement with the system's Functional Suitability, Performance Efficiency, Compatibility, Usability, Reliability, and Security aspects.

Keywords: document management system, Agile development, RSU quality management system, ReactJS and NodeJS, functional suitability

WORKWISE: AN INTERACTIVE JOB SEARCH TOOL

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Job search tool presents an exceptional opportunity to address the challenges that job seekers encounter and promote a more inclusive and dynamic job market. Furthermore, workwise recognizes the unique needs of the Romblomanon community and is committed to promoting inclusivity by providing equal opportunities for all job seekers and thriving in the dynamic job market of the modern world. This study aims to develop Workwise: An Interactive job search tool for the province of Romblon. Specifically, it focuses on developing a job search tool that contains the following features; (a) Update and profile creation; (b) Notification on Gmail;(c) Employee rating, Lastly, this research aims to provide a reliable system that adheres to the standard in software and technology engineering. The proponents of the study used the ISO/IEC 25010:2011 standard to evaluate the functional suitability, performance efficiency, reliability, and security of the proposed developed job search tool. A certain person was selected through convenience sampling, considering the availability of job seekers and employers, which is 50 of jobseekers and 50 employers, resulting in 100 responses for the assessment. The findings of the developed job search tool show that the respondents of this study as well as the jobseeker and employer were very satisfied with the result of this study. Furthermore, most participants agreed that Workwise Romblon is generally accepted as ready to use as a tool in the pursuit of effective and efficient job navigation in the province of Romblon.

Keywords: profile creation, job search, job posting, interactive, requirements

MTOP RENEWAL AND APPLICATION PERMIT WITH MONITORING SYSTEM USING QR CODE

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Renewal of the Municipal Tricycle Operators Permit (MTOP) in LGU is done annually until its validity expires. MTOP is crucial for legal transactions and preventing law-breaking on tricycles. Traditionally, applications were processed manually, requiring time and effort for tricycle operators and drivers. Researchers aim to simplify the MTOP renewal and application process by developing a monitoring system using QR codes. This centralized platform will allow operators and drivers to issue permits at LGU, reducing the time and effort required. To fulfill the objectives of the study, MySQL and Visual Studio code were used to develop the system. Development teams create high-quality software using a time- and money-efficient procedure called the software development life cycle (SDLC). ISO/IEC 25010:2011 standard was used to evaluate the functional suitability, performance efficiency, compatibility, usability, reliability, portability, security, and maintainability of the proposed MTOP website. The instrument was validated and pretested accordingly. The findings of the study show that the developed system acquired a verbal interpretation of "strongly agree" as an impression of the overall weighted mean 4.63 acceptability rate. The development of the MTOP website in LGU Sangguniang Bayan has been highly recommended for its effectiveness in tracking registered tricycle drivers in the Municipality of Romblon.

Keywords: TODA, MTOP renewal, QR code, monitoring system, permit application

ONLINE MUSEUM OF AQUATIC FLORA AND FAUNA FOR RSU SAN AGUSTIN CAMPUS

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The Online Museum of Aquatic Flora and Fauna for RSU San Agustin Campus is a web-based project to address the problem of the said campus preserving its aquatic collections. The campus encounters data loss due to inappropriate preservation methods, leading to alterations in the appearance of species or damage to their actual features. The researcher came up with the idea to design, develop, and create a user-friendly website to ensure proper documentation of aquatic specimens for the San Agustin Campus that can upload, edit, delete, or manage all the collections. Data were gathered through a Google Form survey distributed to 30 randomly selected individuals in Romblon. Agile development was used in the development of the website. The gathered data were analyzed and interpreted using mean to test the website's performance and determine whether the study objectives had been met. Results indicate the overall perception of functional suitability (average weighted mean: 4.84), reliability (average weighted mean: 4.3), performance efficiency (average weighted mean: 4.07), usability (average weighted mean: 4.88), and security (average weighted mean: 4.88). Therefore, the proponents have concluded that all the objectives of the website were met.

Keywords: aquatic collections preservation, web-based documentation, Agile development, functional suitability, usability and security

E-CLASS: ONLINE CLASS SCHEDULING WITH DECISION SUPPORT SYSTEM

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The purpose of this study is to develop an Online Class Scheduling with a Decision Support System (DSS) for Romblon State University - Romblon Campus. The manual system is inefficient, time-consuming, and prone to conflicts and errors. The designed system, named E-Class: Online Class Scheduling with Decision Support System, aims to provide a better service for the students, faculty, and administration by automating the scheduling process and allowing the admin to input and update the information as needed using DSS. Before creating this approach, the researchers surveyed instructors, students, and the campus director's secretary—who creates the timetable. Following the completion of the survey, the researchers moved on to the system's planning and gathered specific needs to create a user-friendly system. Based on the specifications, the developers meticulously produced a technical design and developed the system. The system underwent numerous fixes before being made available to users for testing. After testing the system, users expressed satisfaction and happiness with the designed system. The system aims to provide a more accurate approach to class scheduling, surpassing the limitations of manual methods. The goal is to minimize scheduling errors and enhance the overall precision of the process. The system targets the elimination of scheduling conflicts, ensuring that each class schedule is seamlessly plotted without overlap. This comprehensive approach ensures that "E-Class" not only meets the immediate needs of the school but also sets a standard for precision, efficiency, and user satisfaction in online class scheduling systems.

Keywords: e-class, scheduling, decision support system, online class scheduling

THE MENRO: MONITORING AND MANAGEMENT SYSTEM

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The MENRO: Monitoring and Management System project represents a comprehensive solution from manual to software-based systems. This aims to provide a secure and user-friendly interface that easily accesses, monitors, and manages documents, as well as to provide accurate reports and records. In the face of escalating environmental challenges, this system integrates state-of-the-art technologies to streamline data collection, analysis, and decision-making processes within the context of the Municipal Environmental and Natural Resources Office (MENRO). It incorporates a user-friendly interface for the admin (MENRO) to easily access and understand the system. This project aims (1) to design a user-friendly interface that enables the user to easily, add, edit, delete update, and keep accurate reports and records, (2)to design a system that can provide an apprehension receipt list of violation and penalty of registered establishments covered by MENRO, and (3) to evaluate the system using ISO/IEC 25010:2011 standard: functional suitability, performance efficiency, reliability, usability, compatibility, maintainability, portability, and security. These standards ensure that the user's experience with the system is met, and the essential functions and features like adding, editing, updating, and keeping accurate reports and records, monitor and managing the system where at its most excellent functional operation in real-time, providing immediate feedback and alerts in case of any issues. (To develop the MENRO project the proponents used the waterfall model because it is a software development methodology that follows a linear and sequential approach.) The system facilitates convenient access to the forms used by MENRO in monitoring establishments, providing a seamless process for recording and checking if specific establishments have committed offenses that need to be addressed. The ultimate objective is to assist MENRO in efficiently accessing MRF forms and issuing apprehension receipts, thereby contributing to a more streamlined and effective monitoring and management process.

Keywords: MENRO, MRF, monitoring, management system

MULTI-HAZARD RISK ASSESSMENT OF BUILDING USING GIS-ANALYTICAL HIERARCHY PROCESS IN THE MUNICIPALITY OF ODIONGAN, ROMBLON, PHILIPPINES

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The Philippines, prone to hazards like floods, landslides, and fires due to its geographical characteristics, stands among the world's most disaster-prone countries. Hazards pose threats to society, causing loss of life and property damage. A study was undertaken to create a map addressing concerns and mitigating the risks associated with multi-hazards. Focusing on Odiongan, Romblon, this study addresses the necessity for a multi-hazard map, crucial for its composite representation of hazards in terms of size, frequency, and spatial distribution. Given the small and dispersed buildings in Odiongan, the study employs the Analytical Hierarchy Process (AHP) and Geographic Information System (GIS) to conduct multiple hazard assessments, resulting in a local-level risk map with building risk indices. The assessment identifies varying risk levels among 4,043 structures, with 659 classified as very low risk, 569 as low risk, 1,340 as moderately at risk, 666 in the high-risk category, and 809 as very high risk. This study contributes to a multi-hazard strategy by informing the community about flood, landslide, and fire risks. The resulting maps aid local governments in prioritizing multi-hazard risk areas, selecting barangays for mitigation structures, and promoting education on improving home structural integrity. Moreover, it serves as a valuable reference for future research, aiming to minimize multi-risk losses and enhance building resilience nationwide.

Keywords: AHP, building attributes, fire hazard, flood hazard, GIS, landslide, multi-hazard risk assessment

SHE-SALM

SOCIAL SCIENCES, HUMANITIES & EDUCATION
SUPERVISION, ADMINISTRATION, LEADERSHIP & MANAGEMENT

DEVELOPMENT AND FORMATIVE EVALUATION OF 'WORDSPANDER' AS AN INSTRUCTIONAL MANIPULATIVE IN TEACHING VOCABULARY

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Vocabulary is crucial for language acquisition and proficiency. Several studies highlight its significance and emphasize the need for effective teaching strategies. This study focused on the development and formative evaluation of 'WordSpander' as an instructional manipulative in teaching vocabulary. Fifteen (15) Grade 10 English teachers and two hundred forty (240) Grade 10 students were included as participants. The standardized evaluation sheet for Print Resources and Instructional Manipulatives of the DepEd-Learning Resource Management and Development System (LMRDS) was used for Needs Assessment, Curriculum Alignment, and Formative Evaluation. Percentage, Weighted Mean, and Mann-Whitney U were used to analyze the data. The findings reveal that both the teachers and students found the instructional manipulation Very Acceptable in terms of Visual Design (WM=3.88, WM=3.76), Educational Value (WM=3.99), and Engagement and Social Interaction (WM=3.97, WM= 3.81). Moreover, the Flesch reading ease of cards is 53.0 and the grade level is 10.2, while the game manual has a Flesch reading ease of 60.7 and a grade level is 9.3. It is recommended to use 'WordSpander' as an instructional material in teaching vocabulary to Grade 10 students in an experiment to test its effectiveness as an intervention.

Keywords: WordSpander, vocabulary, instructional manipulative, formative evaluation

COMPREHENSION OF TABLE OF ELEMENTS ENHANCEMENT AMONG GRADE 9 STUDENTS THROUGH BINGOCHEM

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This study explores an innovative approach to enhance the comprehension of the periodic table among Grade 9 students through the integration of BingoChem into the learning process. Employing a quasi-experimental design, the study used pre-test and post-test instruments. The intervention followed five phases: analysis, evaluation, design, development, and evaluation. It was found that the experimental group had an average pretest score of 10.36 and an average posttest score of 20.68, resulting in a gain score of 10.32. In comparison, the control group had an average pretest score of 12.32 and an average posttest score of 18.52, resulting in a gain score of 6.20. These findings suggest that the intervention implemented in the experimental group had a greater impact on student learning compared to the control group. The BingoChem game manual passed and was rated as accurate by science curriculum and content experts on all factors mandated by the Department of Education's Guidelines and Processes for Learning Resource Management and Development System (LRMDS) Assessment and Evaluation for print resources. With that, it is highly recommended to use BingoChem as a learning tool for understanding the periodic table among high school students. Further research should explore its long-term impact and scalability in various educational settings.

Keywords: BingoChem, game-based learning, chemistry, periodic table

PAGSUKAT SA KAANGKUPAN NG CHATGPT BILANG ARTIFICIAL INTELLIGENCE SA PAGSALIN NG KONTEKSTO NG PANGKALAHATANG AGHAM MULA SA WIKANG INGLES PATUNGONG WIKANG FILIPINO

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Isa sa mga katangi-tanging abilidad ng ChatGPT bilang isang Artificial Intelligence (AI) ay ang kakayahan nitong magsalin ng mga salita at wika nang agaran. Ang pag-aaral na ito ay naglalayong malaman ang kakayahan ng ChatGPT na magsalin ng mga salita mula Ingles patungong Filipino angkop sa teksto at konteksto ng paggamit. Ilang mga modyul sa asignaturang Pangkalahatang Agham o Integrated Science ang isinalin mula Ingles patungong Filipino gamit lamang ang ChatGPT. Tatlumpu't anim na mag-aaral mula sa ikapitong baitang ng PSHS-MRC ang napiling kalahok na isinarbey, ipinagbasa at ipinasuri ng mga isinaling modyul, at ininterbyu. Ayon sa nakuhang resulta, karamihan sa mga kalahok ay mas nakakaintindi ng mga konseptong teknikal kapag nakahayag sa Ingles, ngunit mas nakakaintindi ng kabuoang pahayag ng modyul kapag ito ay nakaulat sa Filipino. Natuklasan din na iba-iba at walang tiyak na salin ang ChatGPT sa iisang salita. Bilang resolusyon, gumawa ang mga mananaliksik ng isang glosaryo na naglalaman ng mga salitang hindi kayang isalin ng ChatGPT at natuklasan na karamihan sa mga ito ay salitang teknikal. Kaya, bilang kongklusyon, ang ChatGPT ay hindi kayang magsalin ng mga salitang teknikal batay sa teksto at konteksto nito. Bagkus, ito ay nakatutulong pa rin sa pagsasalin sa pamamaraan na ito ay maaaring gawing paunang salin upang magsilbing gabay sa aktwal na salin. Sa karagdagan, ang salin ng ChatGPT patungong wikang Filipino ay mas nakatutulong sa pag-intindi ng nilalaman ng isang teksto kahit na ito ay may mga kakaunting kamalian.

Mga susing salita: pagsasalin, agham, wikang Filipino, wikang Ingles, ChatGPT

UGNAYANG KULTURAL NG MGA NASA IKAPITONG BAITANG AT LATERAL NA MAG-AARAL NG PHILIPPINE SCIENCE HIGH SCHOOL - MIMAROPA REGION CAMPUS

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Ang Philippine Ang Philippine Science High School - Mimaropa Region Campus na matatagpuan sa Isla ng Tablas, Romblon ay tumatanggap ng mga mag-aaral mula sa iba't-ibang lugar sa bansa. Kung kaya't, ang kanilang pagpasok sa paaralan ay nagdulot ng pagkakaiba sa kulturang nakasanayan ng mga mag-aaral mula sa Isla ng Tablas. Dahil dito, iba't-ibang mga emosyon, hamon, at isyung naranasan ng mga bata ay nakaapekto sa pamumuhay at pag-aaral ng mga mag-aaral. Nilalayon ng pag-aaral na masiyasat kung saang yugto ng ugnayang kultural naaayon ang mga bagong mag-aaral ng PSHS-MRC, malaman ang mga mag-aaral na nasa Ikapitong baitang at Lateral na mula sa labas ng Tablas, magsagawa ng panayam at mailahad ito sa mga kalahok, matukoy ang mga salik na nakakaapekto sa ugnayang kultural, at maanalisa ang bawat yugto ng ugnayang kultural. Nagsagawa ng sarbey at interbyu sa mga nasa ikapitong baitang at lateral na mag-aaral na nakatira sa labas ng Tablas. Natukoy ng mga mananaliksik na labimpito sa mga kalahok ay nasa yugto ng Adaptasyon samantalang tatlo ang nasa yugto ng Adjustment. Ayon sa resulta ng interbyu, ang mga aspeto ng kultura gaya ng mga kaugalian, paniniwala, at wika ang mga naging pangunahing dahilan ng pagkakaroon ng culture shock ng mga kalahok. Karamihan din ay tumagal ng isa hanggang dalawang buwan ang Adjustment Phase. Nahihinuha ng mga mananaliksik na malaki ang naging parte ng pakikipag-ugnayan ng mga mag-aaral sa kanilang kapwa iskolar upang patuloy na makapag-adjust sa bagong lugar at paaralan.

Mga susing salita: ugnayang kultural, Euphoria, culture shock, adjustment, adaptation

TRIGHEX: GAMIFICATION OF PRODUCT AND QUOTIENT IDENTITIES OF SIX TRIGONOMETRIC RATIOS FOR CLASSROOM INSTRUCTION

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Gamification has impacted mathematics education. It makes the process of teaching and learning more engaging. In this developmental study, the researchers conducted a baseline and needs assessment involving two hundred fifty-four (254) Science, Technology, Engineering, and Mathematics (STEM) students and eight (8) mathematics teachers. This revealed significant challenges faced by students and teachers in teaching and learning of trigonometric identities. These include the complexity of the subject which requires memorization of formulas and identities. Additionally, minimal to no use of manipulatives worsened the teaching and learning process. These findings served as the basis for the development of the instructional manipulative in addition to the review of related literature on the needs and challenges of teaching and learning mathematics, specifically in trigonometry. Trighex is an instructional manipulative that centers around the concept of trigonometric identities. Along with its game manual, Trighex underwent content and curricular alignment, followed by a formative evaluation conducted by eleven (11) curriculum and content experts from the Department of Education, Division of Romblon. DepEd's Guidelines and Processes for Learning Resource Management and Development System (LRMDS) were used to assess and evaluate the instructional material. As a result, Trighex satisfied the predetermined criteria. These favorable findings support the potential of Trighex as an instructional material. Evaluators recommended the use of Trighex in classroom instruction. Furthermore, they suggest exploring Trighex-based mini-activities that will fit into the one-hour teaching time. Conducting an experimental study to evaluate the effectiveness of Trighex as an aid in teaching trigonometric identities was also recommended.

Keywords: gamification, manipulative, Trighex, trigonometric identities, trigonometry

STUDENTS' VOCABULARY RECOGNITION LEVEL IN POST-PANDEMIC: THE CASE OF PUBLIC SECONDARY SCHOOL ON AN ISLAND DISTRICT OF ROMBLON

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This study focuses on the effect of blended learning on the vocabulary recognition level of Romblon National High School's Grade 11 Senior High School students. This aims to bridge the gap between the perceived factors during the Pandemic and the result of the vocabulary recognition level of the students in post-pandemic. This study used descriptive-correlational to determine whether two or more variables correlate with each other. Descriptive is used in describing the factors of student's vocabulary recognition level. The correlation method is employed to test the significant relationship between the level of students' vocabulary recognition in post-pandemic and the factors that may affect the student's vocabulary recognition level. This study employed quantitative research. The instrument used is a structured questionnaire such as; (1) a 30-item vocabulary test and (2) a survey questionnaire. 249 Grade 11 students were respondents. Using the collected data and analysis, the findings of this study found that the students' vocabulary recognition throughout the post-pandemic period was at an average level. The perceived level of students' vocabulary recognition for various post-pandemic factors is above average level and was interpreted descriptively as "agree" overall. Moreover, the perceived factors during the pandemic showed no significant relationship to their level of vocabulary recognition during post-pandemic. It is advised to identify and look for additional variables that are pertinent to the students' vocabulary knowledge to determine and understand the pressing issues that must be addressed; furthermore, develop strategies that are not only effective but efficiently optimize their applications in improving students' vocabulary.

Keywords: blended learning, vocabulary, vocabulary recognition, post-pandemic

'READ LIKE ME' TO INCREASE THE READING COMPREHENSION OF GRADE IV STRUGGLING READERS

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Repeated reading works by breaking the parts of a passage into smaller portions that can be read and reread multiple times. Impairments in any aspect of oral reading fluency were linked to reading comprehension issues in the targeted reading groups. This study aimed to determine the impacts of 'Read Like Me' to increase the reading comprehension of Grade IV struggling readers in Linawan Integrated School. It was a four-week study; three times a week implementation every Monday, Tuesday, and Wednesday. It was an experimental research wherein the researchers implemented 'Read Like Me' to increase the reading comprehension of Grade IV struggling readers in Linawan Integrated School and determine how they influenced the reading comprehension of pupils. The study sample is composed of 21 Grade IV struggling readers in Linawan Integrated School who have shown difficulty when it comes to reading comprehension. The research instruments include a pretest, posttest, and a daily tracking form to track the participant's words correct per minute (WCPM). Based on the data gathered, the study showed that the mean pretest score of Grade IV struggling readers before the intervention was 10.71 (SD= 4.43) indicating a lower level of reading comprehension. As a result of the posttest, the pupils got a mean score of 15.62 (SD= 3.98), and showed an improvement in their reading comprehension. Moreover, it was revealed that there is a significant difference in the scores of the pupils before and after the 'Read Like Me' intervention. It indicates that repeated reading intervention had a positive impact on the pupil's reading comprehension.

Keywords: reading, reading comprehension, repeated reading, struggling readers, words correct per minute (WCPM)

INTRINSIC AND EXTRINSIC DIMENSIONS OF MOTIVATION FOR READING ENGLISH AMONG GRADE-7 STUDENTS IN SANTA FE, ROMBLON

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This study evaluated the intrinsic and extrinsic dimensions of motivations for reading English among Grade-7 learners in Santa Fe, Romblon, in response to the English reading proficiency crisis in the Philippines highlighted by the PISA 2018 results and the World Bank 2022 report. Using the adapted Motivation for Reading Questionnaire (MRQ), data was collected from a sample of 98 male and 98 female learners. Quantitative methods were employed to analyze the survey results and qualitative methods to interpret the resulting statistics and figures. Findings indicate a moderate, intrinsic motivation towards reading English, with the highest motivations attributed to Importance and Curiosity (intrinsic) and the lowest to Social, Competition, and Challenge (extrinsic). Strong correlations were observed in the consistently low levels of motivation across Efficacy, Challenge, and Competition. Most notably, female learners exhibit higher motivation than their male counterparts across both intrinsic and extrinsic dimensions, especially in Curiosity, Involvement, and Recognition. This study underscores the need for targeted reading programs and curricula that cater to English learners' motivational and gender differences, recommends strengthening extrinsic motivators for male learners and leveraging intrinsic motivations for female learners to improve reading proficiency, and provides actionable insights for educators and policymakers in Romblon.

Keywords: reading, proficiency, intrinsic, extrinsic, motivation, English

MAGNA CARTA ON SUBSIDIZATION OF SMALL RICE FARMERS IN ODIONGAN, ROMBLON

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Subsidization of small rice farmers through the Republic Act 7607 or the Magna Carta on Small Farmers is one of the programs of the government through the Department of Agriculture which aims to equitable distribution of benefits and opportunities. The qualitative study was conducted to assess the effectiveness, efficiency, impact, and sustainability of the magna carta on subsidization of small rice farmers in Odiongan, Romblon. Some farmer's organizations mentioned that not all rice farmers received subsidies because there is a lack of data gathering from the Department of Agriculture. In short, not all rice farmers are listed and interviewed which the extension workers or technicians should do. There is no proper coordination with the local government unit when formulating a subsidization program for the local farmers of Odiongan, Romblon. The regional office according to the provincial office of agriculture does not coordinate with them when appropriating subsidization programs, as a result, subsidization programs including projects and mechanizations are sometimes not aligned with the needs of local rice farmers. The coordination of the Department of Agriculture with the Farmer Organization in each barangay is not conducted properly. There is no consultation regarding subsidies. The farmers don't have any recommendations in formulating the subsidy program, they just wait for any subsidy to arrive. There should be an early distribution of subsidies, monitoring the needs of the farmers before formulating subsidization, guiding farmers from production up to harvest and marketing the produce, making sure of the quality of given specific subsidies such as farm equipment, scrutinize the market system where local products should be prioritized, increase the technicians or field officers, and prioritize input subsidies instead of cash.

Keywords: rice farmer subsidies, Magna Carta, Department of Agriculture

KAALAMAN AT HUSAY NG MGA PDL SA WIKANG FILIPINO: BATAYAN SA PROGRAMANG PAMPAUNLAD NG KOMUNIKATIBONG KASANAYAN

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Ang pananaliksik na ito ay naglalayong suriin ang antas ng kaalaman at husay sa wikang Filipino ng mga Persons Deprived of Liberty (PDL) sa Romblon District Jail. Ginamit ang iba't ibang istadistikang pamamaraan sa pag-aanalisa ng mga datos upang masuri ang kaugnayan ng kanilang demograpikong propayl sa kanilang kaalaman at husay sa wikang Filipino, pati na rin ang impluwensya ng kanilang pag-uugali sa pagkatuto ng wika. Natukoy na ang pinakamaraming respondante ay nasa edad na 31-50 taong gulang, at ang pinakamababa naman ay mga nasa edad na 30 taong gulang pababa. Sa pagsusuri ng antas ng kaalaman at husay sa wikang Filipino, karamihan sa mga PDL ay nakakuha ng mababang iskor sa pagsusulit. Ang natukoy na ang pinakamataas na edukasyon ng mga PDL ang may kaugnayan sa kanilang antas ng kaalaman at husay sa wikang Filipino, samantalang walang kinalaman ang iba pang aspeto ng kanilang demograpikong propayl. Hindi nagdulot ng pagkakaiba ang edad, katayuang sibil, at pinakamataas na edukasyon sa kanilang pag-uugali hinggil sa pagpapaunlad ng kanilang kaalaman at husay sa wikang Filipino. Batay sa mga natukoy, ilang rekomendasyon ang inilaan upang mapabuti ang kaalaman at kahusayan sa wikang Filipino ng mga PDL. Kasama rito ang pagtataguyod ng boluntaryong pagtuturo sa bilangguan, ang pagtulong ng mga organisasyon sa pagbibigay suporta sa pag-aaral ng wika, at ang pagpapalawak ng pag-aaral tungo sa iba pang mga wika tulad ng Ingles at Ini. Layunin ng mga rekomendasyong ito ang makatulong sa pagpapalakas ng kakayahan at kaalaman ng mga PDL sa larangang pangkomunikasyon.

Mga susing salita: Persons Deprived of Liberty, kaalaman at husay sa wikang Filpino, pag-uugali hinggil sa pagpaunlad ng kaalaman at husay sa wikang Filipino

LIVED-EXPERIENCES OF THE CHILDREN OF PERSONS DEPRIVED OF LIBERTY: A PARENT'S NARRATIVE

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Family is connected by parents and children relationship where parents are responsible for giving the basic needs of their offspring as a constitutional right of a child stated in the 1987 Constitution. The glimpse of having a connected and desirable family results in positive outcomes in society, but what would happen if the family that we think of as a whole became defective because of incarceration? What would be its impact on the children? This study aims to determine the lived experiences of the children where their situations were narrated by their parents who took care of them when their father was incarcerated. This research utilized the qualitative (exploratory) research design to explore the lived experiences of the children of PDLs. Four themes emerged from the analysis: Behavioral Problems; Low Self-esteem; Academic Performance and Financial Resources. Results also show that the most affected gender are female children, in addition, they are the most vulnerable in society. They are also affected in terms of finances, behavior, and academic performance. The four themes that were revealed in the study proved that these are the negative impacts of being a child of PDL. This was proven by literature and articles that the children of PDLs suffer from severe pressure from society. And being a child of a PDL, you will experience bullying, lack of financial resources, depression, low academic performance, low self-esteem, and the like.

Keywords: Persons Deprived of Liberty, incarceration, children of PDLs

LEVEL OF THE SUPPORT SYSTEM OF THE FAMILY MEMBER OF THE PNP PERSONNEL IN RELATION TO THEIR WORK IN THE MUNICIPALITY OF ODIONGAN: AN ASSESSMENT

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This study aimed to assess the support system of family members of PNP Personnel in Odiongan MPS. It examined demographic profiles and the level of support (emotional, economic, spiritual, and moral) received by the personnel based on age, sex, and civil status. The study also explored the correlation between the respondents' profiles and the level of support, as well as the problems faced by the family members in providing support to their family member who is police personnel. A mixed quantitative and qualitative research method was used, involving 60 respondents. The findings revealed that most respondents were female, aged 28 and above, and married. The level of emotional, moral, and spiritual support was often provided, while financial support was sometimes provided. There was a significant difference and correlation between sex, civil status, and the level of emotional and moral support. Therefore, it is recommended to enhance the support level, particularly in areas identified as often and sometimes. The results can be used to sustain other levels of support. Further research, including other demographic profiles and support levels, is suggested.

Keywords: level, support system, family member, PNP personnel, assessment

PAGKABILANGGO NG KABABAIHAN SA KASAYSAYANG FILIPINO: "PEKLAT CREAM" NG BITA AND THE BOTFLIES LABAN SA MISOGINISMO

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Ang misoginismo ay matagal nang namamalagi sa Pilipinas simula nang sakupin tayo ng mga Espanyol. Sa kabila ng mga polisiya at batas sa Pilipinas na naglalayong protektahan ang mga kababaihang Pilipino, marami pa rin ang kaso ng diskriminasyon at pang-aabuso sa mga kababaihan. Ang Peklat Cream album ng Bita and the Botflies ay nagsasalaysay ng iba't ibang karanasan ng mga kababaihan at nagsusulong ng adbokasiya laban sa misoginismo. Kaya, nilayon ng pag-aaral na ito na suriin ang komposisyon, liriko, at kaugnayan sa misoginismo ng mga kantang nakapaloob sa Peklat Cream. Ang pananaliksik na ito ay nagsagawa ng panunuring pampanitikan at pakikipagpanayam sa Bita and the Botflies, iba pang musikerong Filipino, at eksperto sa sosyolohiya, antropolohiya, at pag-aaral sa mga kasarian. Ayon sa nakalap na datos, dalawa sa walong kanta ng album ay may kaugnayan sa misoginismo, ang "Sisikat Ka Iha" at "Peklat Cream," na patungkol sa manipulasyon at pang-aabuso. Bukod pa riyan, halos lahat ng kanta ay may masayang melodiya at masalimuot na mensahe. Nangibabaw rin sa mga liriko at music videos ang ilang porma ng misoginismo, ang gender roles at pang-aabuso. Panghuli, napansin ding nag-iiba-iba ang interpretasyon ng tagapakinig sa kahulugan ng kanta base sa iba't ibang mga salik. Sa kabilang banda, nahihinuha pa rin ng mga mananaliksik na ang Peklat Cream ay may makabuluhang kaugnayan sa misoginismo at epektibong nagbibigay kamalayan upang labanan

Keywords: Misoginismo, Peklat Cream, Bita and the Botflies, kasaysayang Filipino, panunuring pampanitikan

IMPROVING FOOD SAFETY PRACTICES IN THE MUNICIPALITY OF ODIONGAN USING THE LENS OF GOVERNMENTALITY THEORY

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Food safety refers to the practices throughout the food chain that prevent foodborne illness. This study investigates food safety practices within the selected barangay in the Municipality of Odiongan. It examines the current standards for food handling and storage employed by food establishments, focusing on areas like restaurants and street vendors. The research aims to assess the role of the LGU/RHU in ensuring that food stalls adhere to food safety protocols; and the coordination of LGU with other government agencies and people's organizations. The research used an evaluative method. By evaluating the performance of the Food Safety Practices in the Municipality of Odiongan the study argues that participatory intervention is the key to an improved food safety program. Qualitative data were gathered from the key officials and focus group discussions in Barangay, Liwanag, and Liwayway. The overall assessment of the efficiency. effectiveness, impact, and sustainability of the Food Safety program discloses several components of participatory intervention: having a flexible policy or program of action for targeting and services; intervention and participation components; and support linkages. In conclusion, participatory intervention critically delineates the fusion between governmentality and state regulation approaches in promoting a more effective role of governments in the implementation of food safety rules.

Keywords: Food safety practices, Local Government Unit, state regulation, governmentality.

IMPROVING ENGLISH PRONUNCIATION AMONG EIGHTH-GRADE STUDENTS USING MINIMAL PAIRS STRATEGY: IMPLICATIONS FOR PEDAGOGY

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This study investigates the effectiveness of the minimal pairs strategy in enhancing English pronunciation among eighth-grade students. To this end, a quantitative experimental design with pretest and posttest analyses was implemented using the Classroom Action Research method. Participants from Epiphany School of Peace and Goodwill-IFI were divided into experimental and control groups (n=10 each) through purposive sampling. The experimental group received exclusive minimal pairs exercises three times a week for four weeks as the intervention of this study. Before the intervention, both the experimental and control groups demonstrated comparable levels of English pronunciation competence. However, the post-intervention period revealed a statistically significant difference in favor of the experimental group, which received minimal pair training. Their t-score (t=-122.497) indicated a dramatic improvement compared to the control group (t=2.514), with a p-value of 0.000 for the experimental group and 0.033 for the control group, signifying a statistically significant difference at the 5% level. These findings solidify the conclusion that the minimal pairs strategy effectively enhances English pronunciation competence among eighth-graders and serves as a strong basis for improving pedagogical methods.

Keywords: pronunciation, minimal pairs strategy, pedagogy

Z-CARD: A GAME-BASED APPROACH IN TEACHING AND LEARNING FUNDAMENTAL OPERATIONS OF INTEGERS

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The ability to perform integer operations proficiently is a prerequisite in more advanced mathematical concepts. Facilitators of learning, curriculum planners, and researchers have suggested interventions to improve students' mastery in learning the fundamental operations of integers, and yet the problem still exists. Non-numeracy and low mastery of grade-7 students at San Andres National High School is evident based on the result of the diagnostic test hence the researchers developed the Z-Card, a game-based approach in mathematics education. The Z-Card was validated and evaluated in terms of the five criteria: (1) goals and objectives, (2) card design, (3) components and organizations, (4) playability, and (5) usefulness. The study gathered evidence to test the effectiveness of Z-Card as compared to the traditional way of teaching and learning the different learning competencies in performing the fundamental operation of integers. The result revealed that integrating Z-Card in the teaching and learning process significantly improves the students' mastery in learning the fundamental operations of integers. In conclusion, educators must consider the Z-Card as a game-based approach to teaching and learning the fundamental operation of integers to further validate the findings of the study.

Keywords: Z-card, game-based approach, teaching and learning, fundamental operations integers

DEVELOPMENT AND FORMATIVE EVALUATION OF 'BER- MODAL TRIANGLE' AS AN INSTRUCTIONAL MANIPULATIVE IN TEACHING MODALS

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Modal verbs are auxiliary verbs that express prohibition, permission, or obligation to modify the main verb or convey the speaker's attitude towards the action. This study focused on the development and formative evaluation of 'Ber-Modal Triangle' as an instructional manipulative in teaching modals. Fifteen English teachers and 300 grade nine students from the Division of Romblon were included as respondents. The standardized evaluation sheet for Print Resources and Instructional Manipulatives of the DepEd-Learning Resource Management and Development System (LMRDS) were used for Needs Assessment, Curriculum Alignment, and Formative Evaluation. Percentage, weighed mean, and Mann-Whitney U were used to analyze the data. The findings reveal that both the teachers and students found the instructional manipulative as Very Acceptable in terms of Visual Design (WM=3.95, WM=3.76, Educational Value (WM=3.87), and Engagement and Social Interaction (WM= 3.92, 3.77). Moreover, the Flesch reading ease of the question cards is 58.42, and grade level of 9.02 while the game manual has a reading ease of 54.2 and a grade level of 9.02. It is recommended to use the 'Ber-Modal Triangle' as an instructional manipulative in teaching modals to grade nine students in an experiment to test its effectiveness as an intervention.

Keywords: ber-modal triangle, formative evaluation, instructional manipulative, modals