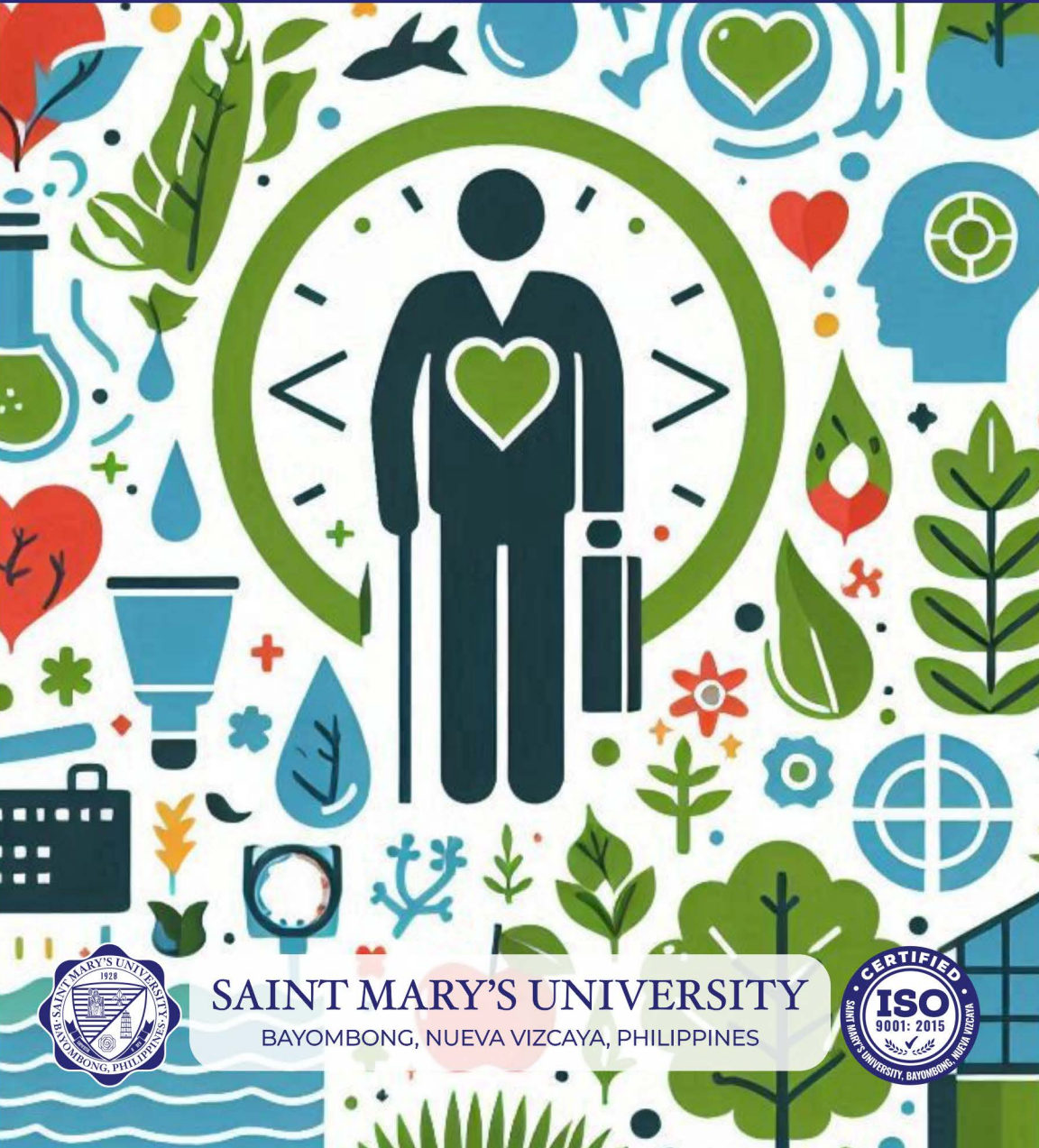


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PREFACE

To our esteemed readers, welcome to the eleventh volume of the *Saint Mary's University Research Abstract*. As we delve into our rich culture of scholarly endeavors, we again find ourselves at the crossroads of knowledge, creativity, and innovation. This journal serves as a beacon - a testament to the intellectual vibrancy that thrives within our academic community.

The need for robust dissemination platforms cannot be overstated in an era of rapid information exchange. Our in-house journal provides a nurturing space for faculty, students, and researchers to showcase their outstanding works. By publishing here, we contribute not only to the academic discourse but also to the collective growth of our institution. Each article and abstract is a stepping stone toward a more enlightened future.

And behind every research endeavor lies a network of support. We extend our heartfelt gratitude to our ever-supportive administrators, research coordinators, and instructors who have tirelessly championed the cause of scholarly exploration. Their unwavering commitment has paved the way for countless breakthroughs. To the panel of evaluators and reviewers, your discerning eyes have sharpened the quality of our publications, ensuring excellence at every turn.

And to the dedicated adviser-promoters, who became the guiding stars for our student researchers. Your mentorship, encouragement, and belief in their potential have ignited the sparks of brilliance. Together, we celebrate the symbiotic relationship between mentor and mentee - a dance of intellect and inspiration.

This journal remains to be a jewel in our accreditation crown. The *Saint Mary's University Research Abstract* stands tall as one of the crowning achievements in our pursuit of excellence. Recognized by the Philippine Accrediting Association of Schools, Colleges, and Universities (PAASCU), this journal exemplifies the scholarly rigor that defines our institution. It is a testament to our collective commitment to advancing

knowledge, fostering critical thinking, and shaping the future.

In this volume, there are about **227** completed student researches, **20** completed faculty researches, and **6** institutional policy-oriented studies as shown:

School / Unit	Completed Student Researches	Completed Faculty Researches	Institutional Policy-Oriented Studies	Total
School of Graduate Studies (SoGS)	54	4		58
School of Accountancy and Business (SAB)	61	2		63
School of Engineering, Architecture, and Information Technology (SEAIT)	64	2		66
School of Health and Natural Sciences (SHNS)	23	4		27
School of Teacher Education and Humanities (STEH)	25	8		33
STEH-Language Department			1	1
SHNS-Nursing			1	1
Lingkod Maria Community Development and Advocacy Center (LMCDAC)			1	1
Senior High School and LMCDAC			1	1
Junior High School / Science High School and LMCDAC			1	1
Guidance and Testing Center			1	1
Total	227	20	6	253

As you immerse yourself in the pages of this volume, may you discover new horizons, challenge assumptions, and torch the flames of curiosity. Let us continue to explore, question, and create together.

The Editor-in-Chief

Research Unit
SCHOOL OF
GRADUATE STUDIES
(SOGS)

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SOGS STUDENT RESEARCHES

SoGS-SR-01

A Proposed Strategic Roadmap for Some Accounting Courses Leveraging Game-Based Learning Approach

John Lindy R. Soriano, CPA
Mrs. Maria Concepcion T. Jalijali, CPA, MBA

This study utilized the gamified learning theory to determine whether the contributions of the game-based learning approach towards the four learning constructs (immersive engagement, attitude, perceived learning, and motivation) significantly differ from the contributions of traditional learning approaches. The gamified strategies were applied to the Conceptual Framework and Accounting Standards course, where 121 students were enrolled, and 98 were chosen as respondents. The game-based learning approach's contribution towards the construct of immersive engagement ($\bar{x} = 3.23$) and attitude ($\bar{x} = 3.34$) was significantly higher compared to the contributions of traditional learning ($\bar{x} = 3.03$ in immersive engagement; $\bar{x} = 3.16$ in attitude). The results show that game-based learning strategies increase student engagement in instruction delivery and improve their general outlook toward learning accounting courses. By integrating games into the curriculum, students' engagement and attitude increase, showcasing the potential of games as an effective instructional method for students to learn accounting courses.

Keywords: Accounting education, case study, gamification, educational games, interactive learning, student engagement, technology in education



SoGS-SR-02

**Organizational Capacities and Enterprise Level and
Sustainability of Community-Based Enterprises
Towards an Inclusive Sustainable
Community-Based Enterprise Framework**

*Mark M. Sotto, PhD-Commerce
Harrison T. Villanueva PhD*

Community-based enterprises (CBEs) are local organizations promoting economic and social well-being. They include community members in decision-making and tackle local concerns through inclusive and sustainable activities. This research utilized the community-based sustainability program model to determine community-based enterprises' best practices, challenges, and sustainability. It employed a quantitative-qualitative method to evaluate the sustainability of the enterprises. The participants were chosen using the purposeful criterion sampling approach, of which data were collected from registered community-based enterprises through key informant interviews and patterned questionnaires. Findings revealed that community-based enterprises (CBEs) demonstrate high organizational capacity, especially in leadership, governance, strategic management, and financial management, but need help with administrative and personnel management. Despite the best governance and strategic management practices, CBEs face various issues across multiple operational areas. They also face significant governance, strategic management, and financial challenges, including limited expertise, workforce shortages, and budget constraints. Administrative issues include inadequate training, role overlap, and limited employee incentives. Weak networks hinder resource mobilization, and staffing and budgetary limitations hinder program development. Monitoring and evaluation need more interest and tools for practical data analysis. Also, enterprises excel at integrating program-specific, organization-specific, and community-specific elements, emphasizing a multifaceted approach to achieving sustainability and success. A framework aimed to guide CBEs toward sustainable development was proposed by integrating best practices to

develop organizational capacity and enterprise-level competencies and a sustainability model to guide program, organization, and community-specific community-based enterprises.

Keywords: Community-based enterprises, inclusive, sustainable framework, organizational capacities, sustainability



SoGS-SR-03

The Disappearing Shelf Space versus the Flourishing Virtual Newsstands in the Philippine Publishing Industry: The Case of ABS-CBN Publishing, Inc.

Sheryl A. Adducul, MBA
John Octavious S. Palina, PhD

This study aimed to determine and analyze the characteristics of ABS-CBN Publishing, Inc.'s target market and how several factors affect its target market's media platform choice. This study used the mixed method of research to determine the profile of the respondents, their choice and use of publication platform, the significant relationship between the respondents' profile and the factors affecting their platform choice, and the implications in terms of issues or concerns and opportunities to ABS-CBN Publishing, Inc. Data were gathered through the administration of a researcher-made questionnaire and conduct of personal interviews. Moreover, means and standard deviation were used to interpret the extent of the factors affecting the platform choice of customers (accessibility, pricing, payment scheme, innovation, audience engagement, value-added features, and user-friendliness) relevant for data analysis. Inferential statistics such as T-Test and Tukey Post Hoc were utilized for independent samples to determine the significant factors of the respondents when they were grouped in terms of the dichotomous variable. One-way ANOVA was used for the variables with more than two categories. Results revealed that the respondents belong to Generation Y, or digital natives, and

earn decently enough to sustain their leisure needs and interests in both traditional media and digital platforms. The study furthers that there are no specific criteria for platform choice due to individual respondents' various requirements and needs. Hence, it is proposed that the company's digital presence be strengthened and print media's presence in regulated operations be enhanced.

Keywords: Digital natives, digital platform, target market, traditional media



SoGS-SR-04

Fun in the Workplace: Its Advantages, Disadvantages, and Effects

*Roy B. Lumidao, MBA
John Octavious S. Palina, PhD*

The study explored the advantages and disadvantages of fun in the workplace and how the effect of fun was used to achieve high employee morale, productivity, job satisfaction, commitment and loyalty, and interpersonal relations. It adopted the descriptive research design, in which permanent personnel from Saint Mary's University served as respondents. This research used a questionnaire that contains activities that contribute to fun in the workplace in the areas of Personal and Professional Wellness Programs, Physical Wellness Programs, and Psycho-Spiritual Wellness Programs, which contribute to the advantages and disadvantages of fun in the workplace in the areas of organizational along recruitment and turnover and individual along employee's work and human relations and the extent of effect of fun in the workplace to the employees along employee morale, productivity, job satisfaction, commitment and loyalty, and interpersonal relations. The study results were groundwork for developing recommendations to advocate and carry out fun in the workplace. The findings revealed that Personal Professional Wellness activities like employee awards and

recognition, team building, and training, Physical Wellness activities such as Zumba, dancing, and brisk walking, and Psycho-Spiritual Wellness activities on recollection and Eucharistic celebrations contribute to employees' fun in their workplaces. The results showed that there are no disadvantages to fun in the workplace. Hence, employees believe that fun in the workplace benefits the organization's recruitment and manpower turnover, as well as the individual's work and human relations. The results also showed that fun in the workplace greatly affects employees' morale, productivity, commitment and loyalty, and interpersonal relations. The results imply that fun in the workplace strongly contributes to effective recruitment, lowered turnover, effective employee work, positive human relations, boosting employee morale, productivity, job satisfaction, commitment and loyalty, and interpersonal relations.

Keywords: commitment and loyalty, employee morale, fun in the workplace, interpersonal relations, job satisfaction, productivity



SoGS-SR-05

Project Implementation of Construction of Small Water Impounding System (SWIS) at San Fernando, Bambang, Nueva Vizcaya

Ruth M. Songotan, ME
Jefrie T. Alindayu, Reg. CE

Deforestation is a pressing global environmental issue driven by human activities such as agriculture, urban development, illegal logging, and mining. In the Philippines, historical deforestation has significantly reduced forest cover, posing ecological challenges. To counter this, the government implemented initiatives like the National Greening Program (NGP) with infrastructure component projects such as small water

impounding systems (SWIS). This study explored the construction of a small water impounding system (SWIS) in San Fernando, Bambang, and Nueva Vizcaya as a critical component of forest protection and sustainable forest management. The project aimed to achieve several objectives, including ensuring a sustainable water supply for established forest plantations, mitigating forest fire risks, and enhancing the local community's water supply during the dry season. By addressing these goals, the project sought to have a positive, long-term impact on the environment and the community. This study provided insights into implementing forest protection and sustainable forest management initiatives, offering an example of how infrastructure projects can contribute to safeguarding the forests and natural resources. It also highlighted the challenges faced throughout the implementation of the project, including the need for variations and time extensions, demonstrating the importance of adaptability during the actual implementation of the project.

Keywords: National Greening Program (NGP), small water impounding system or project (swiss or swip), deforestation, reforestation



SoGS-SR-06

Construction of Two Storey Eight Classroom School Building at Inaban Elementary School, Dupax Del Norte, Nueva Vizcaya

Edison C. Basilio, ME
Candido Joseph T. Rosario, Jr., Reg. ECE

This paper presents the pre-construction, project implementation, and completion stages of constructing two-story eight-classroom buildings at Inaban Elementary School. The project is funded under FY 2021 RA 11518 Regular 2021 Current with Sub-allotment No. SR2021-09-012255 dated September 6, 2021, with a total allocated amount of twenty-two million seven hundred sixty-one thousand seven hundred ten

pesos and eighty-eight centavos (Php 22,761,710.88). With the project awarded to Kevin Paul Construction, the scope of construction included a 1-unit 9.5m x 46.0m two-story eight-classroom school building with complete finishing, including a transformer and electric generator. Completed in 180 calendar days (CD) on April 12, 2022, the project addressed the DepEd problem of classroom shortage. Problems encountered during the project completion stage were addressed positively. Furthermore, before the construction commenced, all permits were secured to avoid project delays. Project implementers closely monitored and supervised the project to ensure the quality of work. DepEd personnel, the school division Superintendent, and the principal accepted the project accordingly.

Keywords: Public school buildings, project implementers, program of works



SoGS-SR-07

Road Slope Management of National Roads with Slips, Slope Collapse, and A landslide along Banaue-Hungduan-Benguet Boundary Road

Xyra Kate L. Bangayan, Reg. ECE
Jefrie T. Alindayu, Reg ECE

The Project is the Rehabilitation / Reconstruction of National Roads with Slips, Slope Collapse, and Landslide - Tertiary Roads along Banaue-Hungduan-Benguet Boundary Road – K0387+650 - K0387+680, K0389+170 - K0389+182, K0369+790 - K0369+819, K0377+081 - K0377+150, Hungduan, Ifugao. It is a Road Slope Management (RSM) Project located in Hungduan, Ifugao, with a total area of 1913.00 square meters. The Project will benefit the residents of Barangay Abatan, located in Hungduan, Ifugao. It includes reconstructing national roads with slips, including the construction of Stone Masonry, Retement, Mechanically Stabilized Earth (MSE), and Gabion along the national road. It also includes the installation of 1 project billboard (DPWH Format) and 1 COA billboard (COA

Format) for the information and guidance of the citizenry about the Project by the department with special safety and health provisions. The Project started on April 05, 2022, with the winning contractor, Eric Van P. Sesbreño Construction, with a completion date of July 29, 2023. Due to Contract Time Extensions and Variation Order, the Revised Contract Amount and Duration are Php 39,906,316.67 and 481 Calendar Days, respectively. The Project did not incur liquidated damage since it was completed before the Revised Expiry Time of July 29, 2023. The Project encountered adverse weather conditions that led to the Project's construction delay. This issue can be addressed by recommending an earlier onset time of activities to maximize the good weather.

Keywords: Road slope management (RSM), landslide, Ifugao



SoGS-SR-o8

Construction of Six Classroom School Buildings and Other Structures

Roderick D. Dominong, Reg. CE, ME-CE
Jefrie T. Alindayu, Reg. CE

The project, "Construction of Six Classroom School Buildings and Other Structures," located at Nangkatengey Elementary School, Namal, Asipulo, Ifugao, aims to benefit the learners and teachers of the school, as well as the entire barangay of Namal. It is funded under the Last Mile School Program fund for CY 2022. The Last Mile School program limits the construction of buildings up to single-story two-classroom, three-classroom, and four-classroom capacities with a standard dimension of 7mx9m on each room, which are to be implemented by DepEd Schools Division Offices nationwide. With the implementation of the Mandanas Law, the DepEd Central Office will only allocate funds to the 5th-class municipalities as recipients of this program. In the meantime, Asipulo is one of the two 5th-class

municipalities of Ifugao. The scope of the project includes the installation of a billboard for public information, the construction of single-story two-classroom and single-story four-classroom school buildings, and completing structural, architectural, electrical, and plumbing work, as well as painting finishes. Additionally, the project encompasses the construction of slope protection, a school fence, entrance/exit gates, canal lining, a flag pole, tower tanks, and the installation of solar panels. The project commenced on February 23, 2023, with a revised completion date of June 27, 2024. The winning contractor, Molave Construction Services, is executing it. The revised contract amount, including the variation order, is Php 28,270,735.74, and the revised contract duration is 484 calendar days. This extension is due to a suspension order, variation order, and contract time extension caused by adverse weather conditions. As of May 2024, the project has incurred negative slippage based on the revised construction schedule and S-curve, primarily due to adverse weather conditions that have delayed construction activities according to the planned schedule.

Keywords: Last mile school program, contract, variation order, negative slippage, s-curve



SoGS-SR-09

Construction of Solar Powered Pump Irrigation Project in Bintawan Norte, Nueva Vizcaya

Ryan Paul E. Nillo, Reg. CE, MECE
Jefrie T. Alindayu, Reg. CE, MECE

The "Solar Pump Irrigation Project in the Municipality of Villaverde, Province of Nueva Vizcaya" represents a pioneering endeavor to enhance agricultural productivity and sustainability in the region. This technical paper elucidates this transformative initiative's comprehensive planning, implementation, and outcomes, executed with a contract cost of 18 million pesos and

spanning a total contract duration of 240 calendar days. The project's primary objective was to deploy solar-powered pumping systems to augment traditional irrigation methods, thereby mitigating dependence on unreliable grid-based electricity and diminishing environmental impact. Through meticulous site assessments, engineering analyses, and stakeholder consultations, the project team tailored solutions to address the unique topographical and hydrological characteristics of the Villaverde municipality. Key components of the project encompassed the procurement and installation of solar panels, inverters, pumps, and associated infrastructure, coupled with rigorous testing and commissioning procedures to ensure optimal performance and durability. Additionally, robust monitoring and maintenance protocols were established to safeguard long-term operational efficiency and mitigate potential technical challenges. The paper comprehensively evaluates the project's socio-economic impact, encompassing enhanced crop yields, reduced production costs, and improved livelihood opportunities for local farmers. Furthermore, it highlights the project's environmental sustainability, including reduced carbon emissions, preservation of water resources, and promotion of renewable energy utilization. Lessons learned from the project's implementation are discussed, offering valuable insights for future endeavors in sustainable agricultural development and renewable energy integration. Through meticulous planning, stakeholder engagement, and innovative technological solutions, the Solar Pump Irrigation Project in Villaverde stands as a beacon of sustainable development, empowering communities and fostering resilience in the face of evolving environmental challenges.

Keywords: Solar-powered irrigation, agricultural sustainability, renewable energy socio-economic impact, environmental sustainability



SoGS-SR-010**Usability and Effectiveness of Teacher-Made Courseware for Improving Secondary School STEM Students' Mastery of Learning Competencies on Exponential and Logarithmic Functions**

*Maria Christina R. Laurente, MST Mathematics
Gertrude G. Danao, PhD*

This study aimed to determine the usability and effectiveness of teacher-made courseware for improving secondary school STEM students' mastery of learning competencies on exponential and logarithmic functions. All Grade 12 STEM students served as the try-out sample for the validity and reliability analyses of the achievement test in exponential and logarithmic functions. In contrast, all the Grade 11 STEM students were the study subjects. The mean scores for all areas in each survey questionnaire were used to assess the courseware's usability and students' self-efficacy. Using the test scores of the participants in the pre-test and post-test, ANCOVA was used to determine the effectiveness of the teacher-made courseware. Pearson r correlation was also used to relate the students' self-efficacy to their achievement level. The students' evaluation of the usability of the mathematics courseware revealed an overall mean score of 4.06, indicating that the courseware is usable. The students' overall mean score for self-regulated learning and computer self-efficacy is 3.70, indicating that the students' self-efficacy is high. The significant (2-tailed) value is less than 0.05, which means that students performed significantly better than the control group after using the courseware to learn exponential and logarithmic functions. Students' self-efficacy and achievement have a slightly positive correlation ($r=0.353$). This reveals that the higher a student's self-efficacy, the higher his or her achievement scores. On the other hand, $p>0.05$ reveals that students' self-efficacy is not significantly related to their achievement in exponential and logarithmic functions. Thus, mathematics teachers, with the support of school administration, should develop or use mathematics courseware that is aligned with the learning competencies. Future researchers may conduct more of this research on a larger scale

and scope.

Keywords: ADDIE model, blended learning, computer literacy, instructional materials, self-regulated learning



SoGS-SR-011

PELIKULAHATAN: A Video Streaming Application For Filipino Regional Independent Films

Rocel Audrey J. Batara, MIT
Rogie B. Taborda, MIT

“PelikuLahatan: A Video Streaming Application for Filipino Regional Independent Films” is a research study focused on developing a video streaming platform specifically designed for showcasing regional independent films created by filmmakers across the Philippines. The primary objective of this study is to provide a platform that enables regional filmmakers to exhibit their films and connect with diverse communities throughout the country. The researcher employed the Rapid Application Development methodology to accomplish the study's goals, encompassing four phases: requirements planning, user design, construction, and cutover. Additionally, a descriptive methodology was utilized to identify the challenges faced by filmmakers, curators, and audiences of regional independent films. The North Luzon Cinema Guild, Inc. was selected as the pilot client for this research. In-depth interviews were conducted with the guild, five filmmakers from various regions nationwide, and 25 audiences to gather relevant data. The system was developed using the MERN stack, which comprises MongoDB, Express.js, React.js, and Node.js. Furthermore, various APIs were integrated to enhance the application's functionality. The platform caters to four types of users: administrator, filmmaker, curator, and watcher, each with specific roles and functionalities within the application.

Keywords: Progressive web app, MERN Stack, Filipino films, video streaming



SoGS-SR-012

**Job Satisfaction and Organizational Commitment
among PLGU Nurses of Nueva Vizcaya: Basis for Pro-
Active Recommendation**

Michael B. Bia, MSN

Elery Michelle C. Quiben, RN, MSN

Exploring the interplay between job satisfaction and organizational commitment among nurses in the Philippines offers crucial insights into the factors shaping their professional engagement and retention within healthcare institutions. This study employed a quantitative approach, utilizing a descriptive-comparative-correlational method and a survey to examine demographic variables, levels of job satisfaction, organizational commitment, and factors affecting these, as well as compare responses and correlations. The research revealed significant variations in demographic variables among nurses, reflecting the diverse structures and functions assumed to be relevant to their environmental contexts. Overall, the levels of job satisfaction and organizational commitment were found to be at the second-highest level, indicating success in meeting nurses' needs within their respective institutions and the ability of the administration to provide the basic and instrumental needs. Notably, job satisfaction was significantly influenced by factors such as assigned nursing unit or area, work location, and nurse-patient ratio. At the same time, organizational commitment was primarily impacted by sex, assigned nursing unit or area, and authorized bed capacity. Furthermore, the study identified a correlation between job satisfaction and organizational commitment across all domains. Though the nurses demonstrated mostly satisfying remarks on job satisfaction and agreement on organizational commitment, the findings culminate in policy recommendations for potential adoption and implementation to improve the physical, mental, and emotional

working conditions.

Keywords: Achievements and accomplishments, affective, normative, continuance, interpersonal relationship, recognition



SoGS-SR-013

**The Integration of Indigenous Peoples' Studies/
Education into the Higher Education Curricula:
Towards a Proposed CICM – PSN Integrative
Framework for Indigenous Peoples' Initiatives**

*Kenneth L. Maslang, PhD EDM
Darwin Don M. Dacles, PhD*

This study unveils the landscape of Indigenous People (IP) education in CICM Higher Education Institutions (HEIs), providing insights into strengths and challenges with broader implications for higher education. Utilizing quantitative and qualitative approaches, it focused on IP studies/education in key CICM HEIs: Saint Louis University (SLU), Saint Mary's University, Saint Louis College, and the University of Saint Louis Tuguegarao. Findings show that the aforesaid HEIs set a benchmark for successful IP integration relative to their context. Their varied approaches offer best practices, fostering a collaborative environment for IP education advancement. Further, the CICM HEIs, especially evident at SLU, emphasize inclusive teaching methods. Despite identified areas for improvement, commitment to addressing the specific needs of Indigenous peoples through instructional materials is notable. Meanwhile, positive integration findings across institutions underscore widespread enthusiasm from administrators, faculty, staff, and students. Dedicated centers and offices showcase collaborative efforts, emphasizing a multidimensional approach for a holistic educational experience. The challenges identified through Banks and Banks' five dimensions highlight the multifaceted nature of IP integration. Addressing these

challenges requires a strategic, collaborative approach across content integration, knowledge construction, prejudice reduction, equity pedagogy, and empowering school culture. Finally, reviewing and adopting the proposed integrative framework for IP initiatives is crucial for overcoming hurdles and advancing inclusive, culturally sensitive higher education environments.

Keywords: Inclusive education, indigenous cultural communities, multicultural education, prejudice reduction, tertiary curriculum



SoGS-SR-014

Implementation, Current Strengths, Challenges, and Prospects of Community Extension Services in a State University

Flordaliza A. Ananayo, PhD EDM
Susan A. Galamay, PhD

Using a mixed-methods approach, this study examined the extent of implementation of community extension programs in the study locale across eight key attributes of community extension services. Findings revealed that the institution moderately implemented the eight key attributes of extension. Perceptions of the extent of implementation of the key attributes across the eight attributes differed significantly. Except by age, there were no significant differences in the perceptions of the community extensionists along the key attributes when grouped by campus, type of respondents, sex, and years of service. Moreover, community extension strengths highlighted the CES's capability to respond to community needs by possessing the five HAGGIYO extension banner programs: organizational capability building, livelihood, computer literacy, industry, and health and wellness. Identified challenges include inadequate meetings or discussions with partner beneficiaries and sponsors, weak

linkages or partnerships, difficulty measuring volunteerism efforts, and limited participation of teachers and students. This study concluded that the community extension program of IFSU embodied the university's vision and goals and was responsive and significant to global, national, and local mandates or thrusts of extension. The community extensionists' perceptions varied across the eight key attributes. Age was an important factor influencing one's perceptions of the extent of implementation. However, the community extensionists experienced multifaceted challenges that need to be resolved. The enhancement plan proposed in this study is highly recommended to enhance the CES program of IFSU since it highlights the eight key attributes of community extension.

Keywords: CES as collaborative and participative, discipline-based, engaged and sustainable, research-based, service-learning oriented, vision-mission focused, and voluntary



SoGS-SR-015

**Senior High School Students' and Teachers'
Performance and Feedback on Their Research
Subjects: Basis for Learning Delivery and
Policy Improvement**

*Jonathan Javier Molina, PhD SciEd-Math
Samuel R. Soliven, PhD*

This study investigated the SHS STEM students' and teachers' performance and feedback on their research subjects towards learning delivery and policy improvement. A mixed method employing a sequential explanatory technique was utilized to determine the classification and level of students' outputs and feedback on their research subjects. Also, it determined the performance level of teachers' research based on the unified MELCs and their innovative teaching practices, research skills

test, performance, and the predictors of teachers' research performance in the Division of Nueva Ecija. A total of 359 STEM students were selected purposively, and 70 STEM research teachers selected randomly were involved in the study. Data were gathered through questionnaires, unstructured interviews, and the acquisition of documents. These were analyzed using frequency, mean, and percentage and document, thematic and regression analyses. The findings indicated that most students were engaged in producing STEM-related outputs, showing a satisfactory level in their research work. Also, they demonstrated a strong understanding of formulating research questions and hypotheses. However, further development of data analysis skills is necessary to enhance the overall quality of their research. Meanwhile, teachers generally exhibited very satisfactory competencies in research. Their innovative practice in teaching the research subjects included establishing in-depth learning, authenticity, taking collective ownership, and cooperative dialogue. More so, the predictive ability for research performance included age, statement of hypothesis, ethical considerations, and proficiency in teaching research. The study highlighted that developing research competencies among teachers and students and supporting mechanisms to address challenges are crucial. These findings lead to developing learning delivery and policy improvement plans that integrate the students' and teachers' challenges and requests in teaching research.

Keywords: Adjustments and coping mechanisms; innovative teaching technique; research performance, students' research outputs



SoGS-SR-016

**Current Conditions and Contentions of Leadership
among Public Secondary School Heads in Isabela,
Philippines: Basis for a Servant Leadership Framework**

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This study utilized the mixed method research design to determine the current conditions and contentions of servant leadership among school heads of public secondary schools in the province of Isabela, Philippines. The findings described the characteristics of school leaders based on antecedent conditions, servant-leader behaviors, and outcomes. In antecedent conditions, the context and culture of school heads' servant leadership were formed based on their practices on school processes and activities, specifically in setting goals, allocating resources, managing the curriculum, monitoring lesson plans, and evaluating teachers. Other antecedent conditions were the leadership attributes the school heads greatly possessed, specifically in sharing leadership to empower their teachers. They also strongly exhibited servant-leader behaviors, specifically ethical behavior. Such servant leadership resulted in teachers' outstanding performance, specifically in key result areas (KRA) 2 Learning Environment and Diversity of Learners. However, identified contentions in 1) limitation on sources of funds, individual differences, lack of planning, unexpected circumstances, lack of support from stakeholders, and differences in ideas affecting the setting of school goals; and 2) unawareness of teachers on the proper distribution of funds for instruction were highlighted as challenges that school heads had to face. As a whole, public secondary school heads had good servant leadership characteristics despite the identified contentions. The proposed servant leadership framework for public secondary school heads is recommended for adoption in improving servant leadership among public secondary school heads.

Keywords: Empowerment, ethical behavior, followers outcome, harmonious workplace, professional development, school goals, service-oriented



SoGS-SR-017**Bioremediation Potential of the Synthesized Silver Nanoparticles (AgNPs) Derived from Kudkudit Mushroom (*Schizophyllum commune* Fr.)**

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Removing heavy metals in wastewater, such as lead, has become a severe problem worldwide. Lead pollutes the environment and causes severe health problems to humans. One of the technological inputs considered these days to address wastewater treatment is the application of silver nanoparticles (AgNPs) synthesized from organisms such as fungi, which have a high tolerance to metals and may possess many extracellular proteins that help the stability of the nanoparticles. This research aimed to investigate the adsorptive capability of lead of fungi-mediated AgNPs derived from the *Kudkudit* mushroom (*Schizophyllum commune* Fr.). The biosynthesized AgNPs were characterized using an ultraviolet-visible spectrophotometer (Spectrum Lab 752S) and through colorimetric analysis. The peak absorbance of the AgNPs produced by the *S. commune* Fr. extract is at 600 nm., thus confirming the presence of AgNP. The lead ion concentrations of the stock solutions, with and without the application of AgNPs, were analyzed using an Electrothermal Atomic Absorption Spectrophotometer (EAAS) after Microwave-Assisted Digestion. The results indicated that lead ions were removed in the stock solutions with the application of AgNPs derived from *S. commune* Fr. Thus, it was concluded that the synthesized silver nanoparticles exhibited a bioremediating potential on lead. Future researchers are highly recommended to investigate the absorptive capability of AgNPs from other species of fungi on other heavy metals.

Keywords: Lead, silver nanoparticles, ETAAS, adsorptive capability



SoGS-SR-018

**Professional Development Framework for
Twenty-First-Century Biology Educators**

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This descriptive study aimed to create a professional development framework for 21st-century biology educators through an analysis made on the profile characteristics of the respondents along the following domains: personal and professional, internationalization, research and extension environment; describe the effects of professional development on their teaching effectiveness, 21st-century skills, proficiency levels, contribution and effects of professional development, strengths, weaknesses; and identify the motivations, hindrances, and enabling factors that contributed to or hindered their participation in different professional developments. To achieve these, the researcher used questionnaires, interviews, and documents of purposively selected educators in Benguet. The study revealed that most Biology educators were female and obtained professor positions with diverse teaching experiences, involved in training, seminars, workshops, conferences, benchmarking, and study programs. The research highlighted the outstanding performance of Biology educators in IPCR, teaching, and self-reported subject proficiency levels. . The study also found that educators frequently encouraged their students to develop 21st-century skills but were not actively involved in internationalization activities. Professional development contributed greatly to content, teaching methods, learning resources, and the well-being of teachers and students, positively affecting students' teaching effectiveness evaluation, twenty-first-century skills of biology educators, and proficiency levels. Their strengths are subject knowledge, professionalism, teaching approach, and approachability, while their weaknesses all point to learning management. Motivations included personal and career development, enhancing university profile, and opportunities. At the same time, the hindering factors were time, financial constraints, ethical concerns, and lack of

motivation toward professional development. The formulated framework encompasses seven areas: (a) individual professional development plan, (b) mentoring and coaching, (c) collaborative learning communities, (d) multi-modal professional development, (e) integration of 21st century skills, (f) recognition and incentives, and (g) evaluation and feedback

Keywords: Biology Education, 21st-century skills, internationalization, research and extension, teaching effectiveness



SoGS-SR-019

**Levels and Sources of Conceptual Understanding of
Conic Sections among Science, Technology,
Engineering, and Mathematics Students:
Towards A Model with Learning Support**

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This study investigated the levels of conceptual understanding (CU) of conic sections among Science, Technology, Engineering, and Mathematics (STEM) students in senior high school and the sources from which they derive it. Data were gathered from 340 students, including 76 students, for the try-out of the test items on conic sections, 107 for the try-out of the survey questionnaire on the identified sources of CU, and 157 for the main study. A descriptive-normative method was employed in determining the level of CU of conic sections and the extent to which the students derived their CU from the identified sources and comparative methods to differentiate across types of conic sections and sources of CU. The predictive the method was likewise utilized in establishing the linear combination that adequately explains the desirable level of CU of conic sections. Relevant data about the respondents were gathered using a survey questionnaire and test items that required students to demonstrate their CU of conic sections. The data gathered were analyzed using frequency and

percent count, mean, standard deviation, and multivariate analyses such as repeated measures analysis of variance and binary logistic regression. Findings revealed that the level of CU of conic sections of STEM students was at approaching proficiency level consistently for ellipses, parabolas, and hyperbolas. The students derive their CU the most from their teachers and, to a large extent, from the Internet, from books, modules, and other printed materials, and their peers. They derive their CU to a lesser extent from their metacognition and their parents and family members. Moreover, students' peers and own metacognition as sources on CU are significant regressors of desirable levels of CU in conic sections. STEM students who are highly metacognitive and are less dependent on their peers are more likely to attain a desirable level of CU on conic sections. A learning support material is crafted to aid STEM students in developing their CU of conic sections.

Keywords: Binary logistic, ellipse, hyperbola, metacognition, parabola, peers



SoGS-SR-020

Flexible Teaching-Learning Modality in Mathematics Education in the New Normal

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The COVID-19 pandemic caused paradigm shifts in the educational sector, prompting teacher education institutions to adopt flexible learning modalities. This study used a mixed-method research design to determine the flexible teaching and learning modalities it brought to mathematics teacher educators (MTEs) and learners in a state university in West Philippines. The study comprised non-random participants using purposive sampling, where 189 learners were surveyed, and six MTEs and 16 learners were interviewed. A researcher-made interview guide was prepared to describe the flexible teaching and learning

modalities and opportunities of the MTEs. Also, a researcher-made questionnaire based on a four-point Likert scale was used to describe the learners' general assessment of the flexible teaching and learning modalities in mathematics education. Quantitative data were gathered online and analyzed using mean and standard deviation. Meanwhile, qualitative data were gathered face-to-face through interviews and focus group discussions, which were analyzed using an inductive approach. Results showed that flexible teaching and learning approaches, such as modular instruction and online options, have implications for education, overcoming barriers, and promoting engagement and empowerment. The findings highlight the importance of technology integration, inclusive assessment modalities, infrastructure support, and professional development opportunities in enhancing the quality and accessibility of flexible teaching and learning, ultimately leading to inclusive and effective educational environments. Therefore, the educational institution must adopt flexible and inclusive instructional modalities, emphasize diverse assessment methods, and personalize the learning experience by integrating online platforms and various assessments. Additionally, the institution can consider evaluating and improving online instruction, optimizing the benefits of modular learning, and providing ongoing professional development opportunities for faculty members.

Keywords: COVID-19, mathematics education, mathematics teacher



SoGS-SR-021

**Proficiency Level of Grade 9 Students on Quadratic
Function through Process-Oriented Guided Inquiry
Learning (POGIL)**

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This study determined the effects of the Process-Oriented Guided Inquiry Learning (POGIL) approach on the proficiency level of Grade 9 students along quadratic functions. It utilized descriptive quantitative and qualitative research approaches and a quasi-experimental design. Two groups with 40 students each from Saint John Berchmans High School Incorporated were considered the study subjects. These two groups, one utilizing the POGIL and the other using direct instruction, had the same level of proficiency before the two instructional approaches were conducted. Results of the study revealed that the level of proficiency of the Grade 9 students on quadratic functions before and after exposure to the POGIL approach improved. The other group of students exposed to direct instruction remained at a low proficiency level in the same lesson. Grade 9 students in both groups significantly improved their proficiency level in quadratic functions before and after using two instructional approaches. However, results show that between the two approaches used in this study, the POGIL approach of teaching quadratic functions to Grade 9 students is more effective than direct instruction. For the continual improvement of teaching quadratic functions to Grade 9 students using the POGIL approach, observers' feedback was gathered, and these involved students' engagement, incorporation of higher-order thinking skills and multimedia presentations, and time engagement in the given activities. These suggestions were implemented to enhance the POGIL activities that are ready for utilization by Grade 9 mathematics teachers.

Keywords: direct instruction, higher-order thinking skills, inquiry-based learning, students' engagement



SoGS-SR-022

**Cognitive Engagement, Resilience, and Academic
Performance of Biology
Students in the New Normal Learning Modality**

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This study determined the level of cognitive engagement, resilience, and academic performance of biology students in Sta. Maria National High School in the Division of Alfonso Lista Ifugao. A quantitative research approach, specifically a nonrandomized control group descriptive design to determine the students' academic performance, a pre-test-post-test research design was applied using a 33-item teacher-made test. Means and standard deviations were used to describe the level of cognitive engagement and resilience of the biology high school students. The findings of the study showed that there is a high cognitive engagement in terms of self-regulation, deep strategy use, shallow processing strategy use, and persistence, and the same high result concerning resilience (Perseverance, Reflecting and adaptive help-seeking, and Negative affect and emotional response) among grade 9 learners. However, the result contrasts their academic performance with the result of their gained score. In addition, learning materials and activities in science classrooms allow the students to have successful experiences, enhancing their academic performance. In general, it is advised that science teachers should implement Problem-Based Learning (PBL) strategies, incorporating real-world biological problems, fostering self-directed learning, and nurturing collaborative problem-solving skills while also providing a supportive environment that encourages reflective practices, validating students' understanding, and aligns with student-centered, experiential learning approaches. Hence, to improve this study, the prospective Problem-Based- learning (PBL) supplementary materials (see Appendix E) created by the researchers must be utilized as a transformative strategy to meet the evolving needs of the modern educational environment. "BIP: Building Interactive and Problem-Based Learning in Biology 9" supplementary material addresses the shortcomings of traditional didactic approaches by fostering critical thinking, resilience, and cognitive engagement among high school students, particularly in challenging biology subjects like Mendelian.

Keywords: Genetics, biology education, problem-based-learning



SoGS-SR-023

Creating an Intervention Program to Enhance the English Language Proficiency of Grade 8 Students Taking the ESL Cambridge Checkpoint Assessment

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This research aimed to enhance the English language proficiency of the Grade 8 students based on the Cambridge Lower Secondary ESL Checkpoint Assessment. This study is quantitative, using a descriptive-comparative design. The data were taken from the students' Cambridge Center Report - ESL Checkpoint exam results in the years 2018, 2019, 2021, and 2022 for reading, Use of English, writing, and listening. This research also looked into the significant difference in the level of English proficiency of the 151 Grade 8 students based on the variables: year, nationalities, length of schooling, and type of primary school. The findings revealed that the overall English proficiency of the Grade 8 students falls under the *Good* level of achievement based on the Cambridge Scale Description. When grouped according to year, length of schooling, and the type of primary school, there is a significant difference in the students' English proficiency in English, writing, and listening, except for reading. However, when grouped according to nationalities, no significant difference is reflected in students' English proficiency in all language skills tested. The findings also revealed that the students had the highest proficiency in writing and the lowest proficiency in listening. Since the Grade 8 students' overall level of achievement, categorized as Good, is not the highest proficiency level, this study recommends using the LINKE (Linking and Integrating New Knowledge and Experiences) Intervention Program for students to achieve the highest proficiency level, which is *Excellent*.

Keywords: Cambridge curriculum, lower secondary checkpoint, English as a second language, English proficiency, intervention program



SoGS-SR-024

Effectiveness of Parental Support Using Strategic Intervention Material on the Reading Performance Among Rural School First Graders

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This study aimed to determine the effectiveness of parental support using researcher-designed strategic intervention material in the reading performance of the Grade I pupils for the SY 2020-2021. In developing the strategic intervention material, the least mastered components based on the Early Grade Reading Assessment (EGRA) were considered; hence, the focus was on letter-sound knowledge. Further, this considered the relationship between the six aspects of home involvement and the learners' reading performance before the intervention's implementation. Quantitative and qualitative designs were used in this study using an action research approach. Quantitative research was used to describe the reading performance of the pupils and measure the significant relationship between reading performance and parental support in enhancing the learners' reading skills. In contrast, the qualitative approach was used to understand better the support the parents extended. Further, a strategic intervention material responsive to the identified needs was designed and implemented with the support of the parents. The pre-and post-intervention performance was compared to assess the effectiveness of parent support using the intervention material. Results of the study revealed that the first graders achieved the minimum expected performance level in each letter sound knowledge component except for letters K, T, Y, and L. The parents have been extending all the home-related support they can give their children to help them succeed in reading. The learners' letter of sound knowledge competence improved

through extended parent support using the intervention material.

Keywords: Homeschool-based reading program, letter-sound knowledge, reading assessment, and reading intervention



SoGS-SR-025

Status and Practices of Digital Reference Service of An Academic Library: Towards A Proposed Action Plan

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The study determines the status, practices, and challenges of an academic library's Digital Reference Services (DRS). Specifically, this research was based on the following standards: a) mission, goals, and objectives; b) administration; c) human resources; d) financial resources; e) linkages and networking; f) physical resources; g) collections; and h) services. Also, the study identified challenges and strategies to resolve them. The descriptive-evaluative research design used a researcher-formulated survey questionnaire for librarians and patrons. The data collected were analyzed using descriptive statistics. Results showed that DRS administration and services have the highest mean and full implementation status.

In contrast, DRS collections and services have the highest mean and a very high practice. In addition, financial resources have the lowest mean and installation status and low practice, according to the librarians. On the other hand, the library patrons regarded all the key areas of DRS collections, services, and physical resources to have a full implementation status and a very high practice. The main challenge for the librarians was the inadequate facilities dedicated to DRS, which implies the need for upgrades and acquisitions to improve DRS. Meanwhile, the library patrons' main challenge is that their queries are not

answered immediately. Their strategies include resending queries and suggestions for more marketing strategies. The research concludes that the DRS has room for improvement in status and practices, especially regarding financial resources. At the same time, the library patrons perceive the need for more marketing strategies for DRS.

Keywords: Electronic reference service, virtual reference service, reference service, library services, university library innovations



SoGS-SR-026

**Biological Profile of Locally Grown Banana Cultivars
and the Capability of Their Pseudostem Sap as an
Alternative Electrolyte for Wet Cell**

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This study used the qualitative and quantitative experimental research design to establish the biological profile of the banana cultivars and the capability of their pseudostem sap as an alternative electrolyte for wet cells. Data were gathered by collecting banana sap, placing it in a 12-volt wet cell battery, and observing it at different intervals. Mean, ANOVA, Duncan's Multiple Range Test, LSD, and pairwise comparison were used to determine significant differences between potential voltage and time interval. *Bungulan*, *Lakatan*, and *Morado* are derived from *Musa Acuminata*, while the *Bulkan*, *Dippig*, and *Tordan* are from the species of *Musa Acuminata* x *Musa balbisiana*. However, each cultivar is a separate group member, including the AABB, Cavendish subgroup of the AAA, AA, AAA, ABB, and AAB Group. The pH of the substrate is neutral, while the pH of newly harvested pseudostem sap turns acidic after 4 weeks of storage. The effects of the treatments, time intervals, and interactions produced a highly significant difference. The positive and negative control and the six cultivars are

statistically and significantly different, while *Bungulan*, *Morado*, and *Tordan* cultivars are statistically the same. Week 1 recorded the highest voltage and statistically the same mean voltages as in Weeks 2 and 4, with the lowest voltage seen in Week 3. The interaction of the sulfuric acid, distilled water, cultivars, and time intervals yielded different voltages and were not statistically comparable. The pseudostem sap of the different banana cultivars in a 12-volt wet cell battery can light the 5, 10, and 15-watt LED bulbs until the fourth week of storage. Using pairwise comparisons, the treatments are statistically the same as one another. Hence, the banana pseudostem sap can be used as an alternative electrolyte for wet cells.

Keywords: Banana sap, electricity generation, potential energy, renewable energy, wet cell battery



SoGS-SR-027

**TIMSS and PISA-Like Learning Outcomes in Basic
Education Mathematics: Towards Materials
Development in Improving Support Systems For 21st
Century Skills Integration**

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Amidst the COVID-19 pandemic, learning must continue at Saint Mary's University Basic Education. Thus, this study explored the teachers' integration practices of 21st-century skills in teaching mathematics, the support systems provided, and learning outcomes from TIMSS-like/PISA-like tests. Using mixed methods, teachers, administrators, and students served as respondents. The study revealed that performance tasks most frequently integrated 21st-century skills, most prevalently learning and innovation skills. Support systems were in the 21st century stage. Learning outcomes from the Trends in International Mathematics and Science Study (TIMSS) and

Program for International Students Assessment (PISA)-like tests showed that students of the Basic Education level have strengths in the following mathematics domains, which are also attributes of the 21st-century skills: applying and reasoning processes for Grade 4, knowing process for Grade 8, and formulating in the context of society for Grade 9. Generally, the learners have favorably attained at least the minimum proficiency level of TIMSS-like standards, the Intermediate Benchmark, and Level 2 of PISA-like standards. About 69% of Grade 4, 56% of Grade 8, and 76% of Grade 9 students reached at least the minimum proficiency level. The Goal-Role-Audience-Situation-Product-Standards (GRASPS) Model for instructional material to integrate 21st-century skills is proposed. The administrators and teachers in the focus learning institution's grade school and junior high school should continue to explore effective integration of 21st-century skills in mathematics and other learning areas.

Keywords: GRASPS model, international benchmark, learning and innovation skills, minimum proficiency levels, reasoning process



SoGS-SR-028

Profiles, Challenges, and Coping Mechanisms in Junior High School Chemistry in an Enriched Virtual Mode: Towards A Proposed E-Chemistry Teaching and Learning Framework

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This study identified the challenges, coping mechanisms, and strategies of junior high school chemistry teachers and learners of private and public schools in parts of Nueva Vizcaya. The respondents' experiences were sought using a survey questionnaire with open-ended questions. This study utilized a mixed-method design—a quantitative approach to identifying

the extent of the respondents' challenges and a qualitative approach to their coping mechanisms and strategies. The qualitative responses were coded, the categories were clustered, and the emerging themes were derived. The learner respondents experienced the pedagogical challenges to a moderate extent, the technological challenges to some extent, and the sociological ones to a moderate extent. The teachers experienced their pedagogical and sociological challenges to some extent and their technological challenges to a small extent. Quantitative results show significant differences between the learners' extent of challenges and profile variables regarding the type of school and section. Still, there is no significant difference in sex. There were also no significant differences between teachers' extent of challenges and profile variables regarding age, school, and years of teaching experiences in face-to-face and EVM. The qualitative results from the learners' responses revealed three emerging themes regarding their challenges: pedagogical, technological, and sociological; seven themes for coping mechanisms: seeking help, managing oneself, choosing wellness, and maximizing resources; six emerging themes for their strategies: setting the learning environment, collaborating, pursuing health and wellness, participating in class, maintaining a positive outlook, resourcing, seeking help, maximizing resources. In contrast, the teachers' responses identified three significant themes related to challenges encountered: pedagogical, technological, and sociological; four identified themes for coping mechanisms: resourcefulness, openness to change, good communication, and self-management; and three for their teaching strategies: encouraging participation, designing alternative activities, and maximizing digital resources. An e-Chemistry Teaching-Learning framework was also formulated to consolidate the respondents' experiences. It comprises three major learning spaces: pedagogical, technological, and social. Each space has prerequisites or domains to enhance the learning environment. There are also specific activities to achieve these prerequisites. Identifying the actual experiences of the members of the educative process is imperative in enhancing the teaching-learning environment. Hence, educational institutions are directed toward innovative and relevant solutions to address the

pressing challenges in the educative process of an enriched virtual mode.

Keywords: Pedagogical challenges, technological challenges, sociological challenges, teaching and learning strategy



SoGS-SR-029

**Junior High School Students' Mathematics
Achievement and Technology
Attitude in the Context of using a Mobile Application**

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This study aimed to evaluate the effectiveness of a mobile educational application in improving Grade 9 students' achievement in and attitudes toward mathematics. Specifically, the study employed a quasi-experimental research design to assess the achievement in mathematics and attitude towards the subject and the user interface satisfaction of students from Bintawan National High School who used the CK-12 Math Application. Data were collected using various research instruments, including the Mathematics and Technology Attitudes Scale, the Standardized User Experience Percentile Rank Questionnaire for Mobile Apps, and the Validated Evaluation Rubric for Mobile Apps. Descriptive statistics, t-tests, and Mann-Whitney tests were used to analyze the data gathered from the control and experimental groups. The results showed that students who used the mobile educational application achieved very proficient scores in mathematics. However, the application did not significantly affect their attitudes toward the subject. Furthermore, most students agreed with each statement in the SUPR-Qm, indicating their positive opinions about the mobile app's features, functionality, design, and usability. This study concludes that mobile educational applications can

improve learning in mathematics and recommends the continued use of the CK-12 Math Application to enhance students' academic performance.

Keywords: CK-12 math application, SUPR-Qm, user experience, user-interface satisfaction



SoGS-SR-030

Kaufman's Model and the Learning and Development Experiences of the Biology Teachers in Diffun Districts: Towards A Retooling Program

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Learning and development programs equip biology teachers with the necessary skills and knowledge to navigate the ever-changing educational landscape. This study focused on exploring the experiences of biology teachers who have participated in various learning and development programs (L&D) in the different districts in Diffun, Division of Quirino. Using a mixed-method quantitative-qualitative descriptive, evaluative research design, data were collected through an open-ended questionnaire administered to this specific group of biology teachers. Findings reveal that while L&D training and activities have been conducted for biology teachers in the past five years, not all teachers could attend them, indicating the need for strategies to provide more training opportunities for their professional growth. Based on Kaufman's model of learning evaluation, the study identifies important implications for the professional development of biology teachers, including the need for diverse assessment strategies, collaborative work, and various teaching approaches. The study also highlights the strengths of the training programs, such as improved knowledge and skills in teaching biology, enhanced classroom management abilities, and supplementary teaching skills. However,

weaknesses were identified, such as the limitations of online training, mismatched topics and processes, limited training periods, and challenges related to time and financial resources. The proposed retooling program, BioREVAMP, is introduced to address these weaknesses. This multifaceted program aims to revolutionize biology education by providing comprehensive support, resources, and innovative teaching approaches. BioREVAMP seeks to reshape traditional teaching practices and create engaging learning environments. By equipping biology teachers with the necessary tools and support, the program aims to drive positive transformations in biology education and foster impactful learning outcomes for students.

Keywords: Biology education, bioREVAMP, Division of Quirino, L&D



SoGS-SR-031

Effectiveness of Chemicooking as a Gamified Intervention in Nomenclature of Compounds: Learning Experiences of Grade 11 Students in a Public School

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This research study sought to document the different learning experiences of the Grade 11 students of Santa Fe National High School. At the same time, they (control and treatment groups) were exposed to the conventional manner of instruction (modules and video lessons) and gamified instruction in the form of the ChemiCooking e-game for the school year 2021-2022. Data were gathered using a researcher-made instrument: a pre-test, a post-test, and a checklist of students' learning experiences. The quantitative data were subjected to various statistical analyses, specifically the mean, standard deviation, and t-tests of the pre and post-test scores. Moreover, the qualitative data were transcribed, analyzed, and thematized. The findings and results of the study indicated that the control

and treatment groups' pretest scores were not significantly different from those of the control and treatment groups. Furthermore, results showed that the post-test scores significantly differ, as reflected in their mean scores of 10.15 (sd=3.88) and 14.7 (sd=4.84). The difference in mean and standard deviation between the control and treatment group's gain scores speak of the effectiveness of the ChemiCooking mobile e-game as an instructional material. Moreover, there is a significant difference in the knowledge gained by the control group (unexposed to the ChemiCooking e-game) and treatment group (exposed to the ChemiCooking e-game) based on their respective post-test scores and gain scores, with the treatment group performing better. This leads to the conclusion that gamified intervention (ChemiCooking) is way more effective than the conventional delivery of instruction. The learners exposed to the ChemiCooking e-game have different and meaningful learning experiences.

Keywords: gamification, knowledge gain, intervention material, ChemiCooking, e-game



SoGS-SR-032

Civic Engagement among Students and Obstacles to Engagement in Relation to Some Personal Antecedents

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This study aimed to gather information about the social studies students' cultivation of civic engagement and obstacles encountered during the pandemic using a combination of quantitative-qualitative approaches following the descriptive-comparative design. Findings revealed that the students often indulged in civic engagement and that their perceptions did not vary by sex and leadership ability but differed when grouped by socio-economic status. Students confronted many obstacles in civic engagement responsibilities. Yet, innovative ways were

offered to engage students in civic action duties. The study concluded that civic engagement was habitually ingrained in the activities of the Maddela Marvelous Grace Christian School, Inc. When grouped by socioeconomic status, the students varied in their perceptions of civic engagement but not when grouped by sex and leadership ability. The findings of this study have implications for strengthening the partnership between the school and home and the need to introduce innovative teaching pedagogies to teach and promote civic engagement among students, even in a pandemic.

Keywords: Civic-mindedness, civic actions, leadership ability, community engagement



SoGS-SR-033

**Distance Learning Experiences of K to 12 Key Stage 1
Parents and Learners in an Indigenous Peoples School:
Towards an Enhanced Basic Education Learning
Continuity Plan**

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Using mixed methods research design, this thesis examined the home learning scenarios of early childhood education learners in an Indigenous Peoples (IPs) school and parents' challenges and coping experiences while implementing distance learning modality. The quantitative data acquired from the learners indicate that most speak Tuwali, and most have no special education requirements. In addition, data on parents indicate that most fathers did not complete elementary school; most mothers completed elementary school but never completed high school; the majority are self-employed, are farmers, and come from impoverished families with at least two school-aged children. Moreover, most do not have access to the internet, yet everyone has a two-way radio at home. Further, quantitative data also revealed the following challenges: lack of available

gadgets/equipment and no internet connection/signal provision, both under physical challenges; easily distracted by social media, TV, and others, and difficulty in independent learning under health and study habit challenges; conflict with activities like house chores, farm/field works, and cannot afford to buy gadgets/equipment under socio-economic challenges; lack of parent's skill in facilitating learning at home, and lack of parent's content knowledge of the lessons under parent-related challenges; and lack of feedback on the child's performance, and difficulty in communicating with the child's teacher under school-related challenges. However, parents overcome these obstacles via coping mechanisms, which include increasing parental engagement, helping their children answer the worksheets, translating textual material, requesting favors from others, and informally seeking qualitative feedback. The researcher concludes that there appears to be a strong correlation between home learning scenarios and the challenges parents face when implementing the school's distance learning modality; thus, there is compelling evidence to suggest that learners located in these IP communities require immediate attention in terms of educational needs when implementing a distance learning modality. As such, the researcher recommends programs and projects that could be part of the Basic Education–Learning Continuity Plan (BE-LCP), like lecture capture, discussion circles, tutoring training for parents, and 24/7 advisory services. It is also suggested that the wider school community could build an internet station, lease rentable gadgets, provide technical support for teachers, and conduct a community-wide information scheme.

Keywords: BE-LCP, IPs, early childhood education, distance learning modality



SoGS-SR-034

**Mastery Level and Mental Models of Grade 8 Learners
in Solving Algebraic Expressions Taught Under a
Blended Learning Modality: Towards a**

Proposed Learning Intervention Framework

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This study aimed to describe and associate mastery level with mental models of Grade 8 learners in solving algebraic expressions taught in a blended learning modality. The study also characterized attributes of mental models among the learners. Descriptive and correlation analyses were used to describe and associate the mastery level and mental models of 32 Grade 8 learners of Bambang National High School. A validated researcher-made mastery and open-ended tests were administered to the Grade 8 learners. Those with a qualified combination of mastery level and mental model were subjected to a four-item paper and pencil test and follow-up interview to characterize attributes of their mental model according to representation and connections, reasoning or proof, communication, and problem-solving. Results revealed that the learners have a partial mastery level and have a synthetic mental model when solving algebraic expression problems. The results revealed that learners with little to partial mastery and with initial to synthetic mental models exhibited confusion in determining degrees of terms, translating phrases to mathematical symbols, and understanding the meaning of a constant in the given algebraic expressions. Moreover, the learners' mastery level and mental models in solving problems involving algebraic expressions have a slight positive correlation but are non-significant. Thus, this study proposed a learning intervention framework for Grade 7 learners to be exposed to both modular and online learning in expressing and explaining their answers, allowing them to rephrase or state basic rules on algebraic expressions by letting them provide their examples and by exposing them to meaningful problem applications observed in real-life situations. Future researchers may endeavor to conduct more research of this kind on a wider scale and scope, particularly on other critical contents of mathematics.

Keywords: Attributes, errors and misconceptions, mathematics

education, modular and online learning, problem-solving



SoGS-SR-035

Assessment of the Mnemonic-Based Instructional Approach in Selected Grade 7 Biology Topics

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This study assessed the effectiveness of a mnemonic-based instructional approach, using the mixed methods explanatory sequential design, in teaching selected biology topics among the chosen homogenous groups of the Grade 7 level of Cabatuan National High School, Del Pilar, Cabatuan, Isabela, Philippines. Three external validators who are experts in education and biology validated the instrument using the Learning Resources Management and Development System (LRMDS). The results showed that the mnemonic-based learning plans had a "very satisfactory level of acceptability" in content, format, presentation, organization, accuracy, and up-to-date information. Additionally, the students' level of knowledge improved from "did not meet expectations" to "fairly satisfactory," "satisfactory," and "very satisfactory." Students' pretest and post-test scores were compared using Analysis of Covariance (ANCOVA) and dependent samples t-test. The findings in Analysis of Covariance revealed that the performance of the students of the control and treatment groups was the same regardless of the intervention. At the same time, the instruction-dependent samples t-test showed a significant difference between the scores. Moreover, the students' learning experiences using mnemonic devices in learning the different biology topics were sought. Results revealed that the "language barrier" is the students' major challenge. Nonetheless, the majority of the students also perceived mnemonics to "improve memorization," "helpful tools," "fastest way of learning," and "lessen confusion." After the study, it was found out that regardless of the intervention applied, mnemonic-based learning plans are as effective as the conventional instructional approach.

Keywords: Cognitive, level of acceptability, level of knowledge, mastery, meaningful learning



SoGS-SR-036

Mathematics Teachers' Understanding of Mathematical Problems, Problem-Solving, and Problem-Solving Strategies: Basis for Crafting Sample Lesson Guides

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Problem-solving, one of the goals of mathematics education, is an innovative instructional practice gaining a lot of interest and support in education because it encourages students to see the practical applications of mathematics. Stemming from the premise, this study determined the mathematics teachers' understanding of mathematical problems, problem-solving, and problem-solving strategies. The study employed a descriptive-qualitative approach. The data was obtained from pen-and-paper interviews and document analysis on the participants' commonly used self-learning modules per grade level. Study findings revealed that the participants' general definition of a mathematical problem was a situation that relates to the real world and can be solved by applying various mathematical concepts and principles in which the problem solver should devise a solution method to arrive at the solution. Most of the participants defined a mathematical problem based on its nature. Moreover, most of the participants' conceptions of mathematical problem-solving revolved around understanding the problem and making wise solutions, solving real-life problems that require sequential solutions, and the apex of all mathematical instructions. Lastly, the study revealed that participants mostly used problem-solving to assess students' acquired knowledge in their lesson integration. They often gave mathematical problems after the discussion of a major topic. The study findings suggested that it is feasible to use problem-solving as a teaching strategy. Furthermore, rather than encouraging traditional teaching philosophies and techniques

while teaching mathematics, the curriculum designers and implementers should strengthen problem-solving skills among mathematics teachers.

Keywords: Geometry, patterns and algebra, routine and non-routine problems, self-learning module



SoGS-SR-037

Acceptability of and Attitude towards Lexical and Syntactic Features of Philippine English (PHE) Among Speakers from the Rural Areas in Northern Philippines

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This study investigated the status of Philippine English in one of the rural areas in the Northern Philippines. Using the Grammatical and Lexical Acceptability questionnaire (GLAQ) of Torres and Alieto (2019), the study aimed to describe the acceptability of and attitudes towards the lexical and syntactic features of PhE among the public secondary school teachers from a rural area and its relationship and difference in terms of profile variables such as age, sex, specialization, years of teaching experience, and number of spoken languages. In general, the participants showed a low extent of acceptance, probably because they still see these features of PhE as deviations. Relative to this finding was the low level of positive attitude towards the lexical and syntactic features of PhE. It can also be noted that the attitude towards these features manifested a strong correlation and considered one of the differing acceptability factors. Lastly, although awareness does not necessarily translate to a positive attitude, a learning and development program was crafted to promote knowledge of the existing variety of English in the country in a rural area.

Keywords: Endonormative model, exonormative model,

features of Philippine English, language attitude
theory, urban and rural English



SoGS-SR-038

**Level of Scientific Skills and Attitudes of Grade 9
Learners: Basis for Home-Based Biology
Laboratory Activities**

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Laboratory activity is crucial to learning science concepts and developing an individual's scientific attitude. However, due to COVID-19, there has been an abrupt change in the education system, in which school facilities such as laboratories are inaccessible. Meanwhile, there are circumstances in public secondary high schools that lack laboratory resources. This study employed a descriptive-developmental research design to determine the scientific skills and attitudes in biology among Grade 9 STE students at Roxas National High School. The researcher administered a science attitude survey, a science process skills test, and an acceptability validation tool to gather the data needed in this study. The researcher used to mean and identify students' scientific attitude as a "Positive Level Attitude" in science. Using mean percentage, the level of scientific skills was described as "Did Not Meet Expectations." Moreover, the researcher developed four (4) home-based biology laboratory activities: Frog Dissection, Different Patterns of Non-Mendelian Inheritance, Melting Glaciers, and Factors Affecting Photosynthesis. Lastly, the researcher used mean as a statistical tool to identify the acceptability of the developed home-based biology laboratory activities, which is determined to be a "Very Satisfactory Level" of acceptability. The researcher concluded that science education in basic education necessitates supplementary but conventional authentic and meaningful learning experiences such as home-based biology laboratory activities to improve the scientific attitudes and skills of the students.

Keywords: Home-based biology laboratory activities, science processes, scientific skills, scientific attitudes



SoGS-SR-039

Extent of Engagement of the Youth in the Parish Life Program

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The extent of engagement of the youth in the parish life program aims to evaluate the level of youth involvement in various parish life programs, explore the factors influencing their participation, analyze their best practices and challenges, and propose recommendations to enhance their engagement. The research focused on young respondents aged 18 and above from six chapels within the Saint Joseph Husband of Mary Parish in Aritao. Utilizing a mixed-methods approach combining quantitative and qualitative research, including Focus Group Discussions and interviews, the study employed research instruments derived from the new parish life program of the Diocese of Bayombong, with guidance from Most Rev. Bishop Elmer I. Mangalino. The findings revealed areas where parish programs could be improved to accommodate youth engagement better. While commendable youth participation is observed, there is still a need to enhance programs, particularly in Service, Stewardship, and Vocation, to ensure comprehensive development. Consequently, this research highlights the importance of further exploring the factors influencing youth involvement in parish life programs. By proposing vigorous activities for young individuals, this study aims to foster a sense of belonging, purpose, and stronger connections to their faith for better engagement in the parish.

Keywords: Faith, guidance, parish, service, stewardship, vocation

SoGS-SR-040**Development of Instructional Material in Mathematics
in the Modern World Utilizing the Design
Thinking Approach**

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The development of instructional materials (IM) has reached the pinnacle of what innovation can bring to classroom instruction. Students study mathematics using all the resources and knowledge these materials offer. All possibilities have been explored by examining students' learning difficulties in Mathematics in the Modern World, which led to the creation of IMs. Through a systematic investigation utilizing concurrent transformative design, the researcher analyzed and summarized the results from questionnaires and other forms given to students and mathematics instructors at Kalinga State University, entering data into the first stage of the design thinking model adapted from IDEO (2013), the Discovery Stage. The learning needs for teaching students the topic "problem-solving strategies successfully" were then highlighted. This was carried out during the interpretation stage, and a potential solution—creating a module—was identified during the ideate stage. The information acquired from the respondents and the crucial data gathered from the relevant studies were organized into a plan for module development throughout the experimentation stage. Ultimately, the evolution stage confirmed the module's content validity. Instructors may use the researcher-made module as additional teaching resources, and it is also suggested that a pilot test be conducted to ascertain its effectiveness. Furthermore, the study recommends pedagogical innovations, classroom management, and teaching styles to teachers at higher education institutions.

Keywords: Design thinking, instructional materials, teaching-learning experiences



SoGS-SR-041**Development of an OBLP (Outdoor Biology Learning Package for the Environmental Literacy of Selected Special Science Class (SSC) Students**

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Determining learners' environmental literacy allows us to secure our environment's sustainability for the years to come; developing students' environmental literacy plays a key role in nurturing stewards of nature. The identification of environmental literacy levels was done among fifty-six (56) grade 7 special science class students of Doña Aurora National High School, which were chosen randomly; the data revealed that the respondents have moderate to high levels of environmental literacy on determinants of behavior, concern, knowledge, respectively. These results are utilized for the crafting of the Outdoor-Biology Learning Package, which uses the approach of outdoor education to ensure the appropriateness and quality of the developed material; validation through the School Quality Assurance Team of Alicia National High School was asked to critique the materials based on guidelines released by the department of education in terms of school-level assessment of printed materials. The results of validation or acceptability of the material conclude that the package passed all parameters of content, language, social content, format, and intellectual property rights, thus supporting the material's goal to develop students' environmental literacy on all aspects of knowledge, behavior, and concern. Furthermore, this study recommends integrating and using the learning package on instruction and teaching across disciplines and conducting seminar workshops among teachers or facilitators in implementing outdoor education.

Keywords: Acceptability, integration, learning material, literacy, outdoor education, quality assurance



SoGS-SR-042**Instructional Materials On The Least Mastered Competencies In Number and Number Sense For Mathematically-Challenged Seventh Graders**

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This study was conducted among the 128 mathematically-challenged seventh graders and 25 Grade 7 mathematics teachers in the 18 selected public secondary schools in the Division of Quirino during the School Year 2021-2022. It aimed to develop a set of teacher-made self-instructional materials for learning and determine their effectiveness in improving mastery of the least mastered competencies on number and number sense. It considered improvements based on the quality elements and effectiveness findings. The teacher-made self-instructional material, a structured quality assurance tool for print adapted from the Department of Education, a researcher-made 30-item achievement test in number and number sense, and focus group discussion were used to gather data. Frequency, percentage, mean, and standard deviation were used for profiling and description of the quality elements of the material. A T-test was run to determine its effectiveness in improving the learners' mastery of the least mastered competencies in number and number sense. The findings of the study underscored that the teacher-made self-instructional material for improving mastery on the least mastered competencies in number and numbers sense is "Very Satisfactory" and has "Passed" the quality elements in terms of content, format, presentation, and organization, and accuracy and recency of information as perceived by the teachers. However, minimal errors were acknowledged, and revisions were made to fit the material to instructional standards. It was also found that it is very effective in improving the mastery of the least mastered competencies in number and number sense. Results indicate that the teacher-made self-instructional material being contextualized and localized for personalized and practical learning is vital and critical in their achievement. Other researchers may conduct future studies focusing on the other quality elements of

instructional materials used in schools today.

Keywords: Accuracy, contextualized, localized, personal and practical learning, recency



SoGS-SR-043

**Students' Errors in Solving Word Problems Involving
Angles of Elevation and Depression and Performance
Level in Grade 9 Trigonometry:
Basis for Development of a Teacher-Made Material**

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This study aimed to identify and classify the errors committed by Grade 10 students of a public high school and private high school when solving word problems involving angles of elevation and depression and to determine their performance level in trigonometry. Employing sequential-explanatory and correlational designs and qualitative and quantitative approaches, the study used Newman's Error Hierarchical Model to analyze the students' errors, including reading, comprehension, transformation, process skills, and encoding errors. Data were gathered using worksheets, summative tests, and interviews. Results showed that students' reading errors were very low but very high in terms of comprehension error, transformation error, process skills error, and encoding error. The summative trigonometry test revealed that most students performed poorly, with only a small percentage achieving satisfactory or satisfactory results. Moreover, the findings revealed a significant relationship between the errors committed by the students and their performance scores in trigonometry. Based on the findings, a teacher-made material with corrective instructional activities that mathematics teachers may adopt to address errors in solving trigonometry word problems was developed.

Keywords: Comprehension error, encoding error, Newman's error hierarchical model, process skills error, transformation error



SoGS-SR-044

Impact of Pre-recorded Audiovisual Materials on the Attainment of Folk Dance Performance among Grade 12 Learners: Basis for Crafting Guidelines

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This study aimed to determine the level of performance of Grade 12 learners in time signature folk dance steps, determine the significant difference between the performance level before and after using pre-recorded audiovisual instructional material, and determine the challenges perceived by the respondents regarding the utilization of such. The terminal output of this study is a guideline to be utilized in evaluating the preparation and usability of audiovisual instructional materials. It is a quantitative-qualitative study, specifically a descriptive-comparative study, which employed a scoring rubric to assess the level of performance and an interview guide that aided the conduct of a focused group discussion to determine the perceived challenges. The data obtained were treated with the acquired mean rating, standard deviation, and paired samples test. It was found that the overall mean before audiovisual material was improved. In contrast, it turned out to be excellent after the use of such. Under guided response, it went from needing improvement to becoming excellent. In the sample test, the values were above the critical value, which means a significant difference between the performance level before and after audiovisual presentation, indicating an improvement after its use. For the perceived challenges, difficulties with connectivity, the language used, the quality of videos and audio, and lack of interaction were aired. The use of audiovisual learning materials is then recommended, and its assessment of quality and usability must be assured at all times.

Keywords: Audiovisual material, enjoyment, guided response, originality, quality assurance



SoGS-SR-045

**Proficiency, Practices, and Barriers of ICT Integration
in Teaching General Biology: Basis for ICT Training
Package Development**

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This convergent parallel mixed-method study described the proficiency, practices, and barriers of information and communication technology (ICT) integration of general biology teachers from four private senior high schools. Data were collected using the Technology Proficiency Survey for Educators (TPSE) survey, the Challenges in Using ICT Tools in Teaching & Learning survey, and a researcher-made tool. Based on the major findings, the general biology teachers confidently utilized ICT tools while teaching, but they indicated intermediate confidence in creating collaborative tools like wikis or blogs. Microsoft PowerPoint, videos, animations, and Canva are mainly used, but other specialized digital tools like simulation software are minimally utilized. Despite acknowledging the advantages of incorporating digital technology, teachers encounter obstacles such as inadequate bandwidth, lack of pedagogical models, and inflexible timetables. An ICT training program, "The Fusion of Technology and Education: A Research-Based ICT Training Program for General Biology Teachers in Private Schools", was designed to address these. The study advocates for professional development programs to improve teachers' ICT skills and suggests further research on the impact of ICT training programs.

Keywords: Professional development, senior high school, technology



SoGS-SR-046**Narratives on Death and Burial among the
Ayangans of Cabuluan**

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Understanding death and burial customs is crucial for preserving cultural heritage and providing communities with a sense of identity and continuity. These customs offer profound insights into historical values and beliefs, fostering respect and understanding across cultures and generations. However, despite the knowledge that such customs can provide, there is a shortage of written accounts that discuss the customs, rituals, and beliefs of the Ayangan of Cabuluan. This lack of documentation highlights the urgent need to document and preserve these traditions before they are lost to time. This study described the customs, rituals, and beliefs on death and burial among the Ayangan of Cabuluan, Villaverde, Nueva Vizcaya, as well as the respondents' perceptions regarding customs, rituals, and beliefs. The narrative design of qualitative research was used to gather the respondents' lived experiences. This study found various customs, rituals, and beliefs among the Ayangans connected them to their dead. However, some Ayangan elders perceived that their customs, rituals, and beliefs were slowly vanishing. Furthermore, a booklet will be additional reading material for school culture-related subjects. In conclusion, after an extensive exploration of the cultural practices of the Ayangans residing in Cabuluan, Villaverde, Nueva Vizcaya, it became evident that there were some changes in some of their customs, rituals, and beliefs throughout generations.

Keywords: Death chair, exhumation, rites, ritual priest, spirit

**SoGS-SR-047****Intercultural Competence of Undergraduate
Education Students: Towards Developing A Project-**

Based Learning Activity

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Previous studies have focused on culturally responsive teaching practices for pre-service and in-service teachers, cross-cultural interactions in international or EFL contexts, and the exploration and implementation of project-based learning (PBL) as a collaborative, experiential, and learner-centered instructional approach. This study, however, examined the intercultural competence of undergraduate education students at Ifugao State University - Potia Campus. Additionally, it aimed to design a project-based learning activity to enhance these students' intercultural interactions with individuals from diverse backgrounds, preparing them for their future teaching roles. This research is a mixed-method approach, incorporating quantitative and qualitative research methods. Quantitative research gathered numerical data and statistical insights on the intercultural competence levels of undergraduate education students. Qualitative research explored the underlying factors influencing their intercultural competence. The open-ended questionnaire explained respondents' perceptions, experiences, and behaviors in different cultural contexts. The study found that undergraduate education students had 'high' intercultural competence, demonstrating strong intercultural knowledge while identifying areas for improvement, particularly in critical thinking skills and cultural self-efficacy. Relationships among intercultural knowledge, attitudes, and skills were significantly positive; hence, designing an intercultural competence should make the approach more in-depth and comprehensive. Furthermore, no demographic variables, whether gender, ethnicity, or location, significantly affected intercultural competence. Thus, geographically diversified contexts should make the interactions more interculturally enriching. From these findings, the study designed Project-Based Learning (PBL) activities to sustain and boost intercultural competence among undergraduate students. This study recognized the significance of intercultural competence in education. It emphasized preparing future teachers to be culturally responsive and navigate diverse cultural environments. That kind of prepa-

ration is very important for promoting inclusivity in future classrooms.

Keywords: Culturally responsive, education students, inclusive education, intercultural competence, project-based learning activity



SoGS-SR-048

Unraveling Calculus Performance: An Integrative Model of Expectancy, Value, Cost, and Misconceptions

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As existing literature supports, undergraduate students perceive calculus as difficult. Moreover, students' motivation, misconceptions, and difficult topics in calculus have a significant impact on the students' performance. This study aimed to develop a model that describes the student's performance in the most difficult topics in calculus, considering their motivation and misconceptions in such topics. This study employed both qualitative and quantitative research designs to accomplish its objectives. The participants were 104 first-year engineering students taking Calculus 1 during the first semester of the school year 2023 to 2024. The students' final examination answers were analyzed, with the help of Item Analysis, to determine the most difficult topics. Their answers were also thoroughly analyzed to identify the students' misconceptions. The most difficult calculus topics were the differentiation of trigonometric, inverse trigonometric, logarithmic, exponential functions, hyperbolic functions, tangent and normal plane curves, applied maximum and minimum problems, and partial derivatives. Further, it was revealed that the students struggled to plot graphs and connect differentiation to real-world scenarios. Moreover, students demonstrated many cases of misconceptions concerning derivatives and mathematical evaluations. Students also exhibited high perceived expectancy for success, value, and cost on the most difficult topics in cal-

culus. The developed best-fit model was the multiple linear regression, which explained the students' performance in the most difficult calculus topics, incorporating misconceptions and perceived expectancy for success in the said topics as independent variables. The study recommends the implementation of intervention prioritizing the identified most difficult topics. The study also suggested exploring other modeling techniques and variables for greater variability.

Keywords: Applied maximum and minimum, functions, item analysis, partial derivatives, tangent, normal plane curves



SoGS-SR-049

Classification and Sources of Student Errors in Solving Sequences Problems: A Comprehensive Investigation Using Newman's Error Analysis

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In mathematics education, students frequently encounter difficulties with word problems and sequence-based problems, which can significantly impact their academic performance. Analyzing students' errors offers a diagnostic approach to identifying their weaknesses and misconceptions. This study applied Newman's Error Analysis to categorize the errors made by students when solving sequence-based word problems. The research instruments included a set of six-word problems, Likert scale surveys, and open-ended questions. Data were collected from 90 Grade 10 students at Nueva Vizcaya General Comprehensive High School during the 2023-2024 academic year. The errors were systematically categorized using an indicator based on Newman's framework. The findings revealed that students predominantly made comprehension and transformation errors. Comprehension errors were linked to difficulties in identifying and articulating known and unknown elements of the problems.

In contrast, transformation errors stemmed from incorrect application of formulas or failure to construct suitable mathematical equations. Contributing factors to these errors included a lack of conceptual understanding and disruptive learning environments. The study recommends that educators implement targeted interventions to improve students' problem-solving skills and address the specific errors associated with sequence-based word problems.

Keywords: Comprehension error, encoding error, process skill error, reading error, transformation error



SoGS-SR-050

STEM and Non-STEM Students' Model of Learning and Study Strategies, and General Mathematics Performance

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In the ever-changing education landscape, where the emphasis on Science, Technology, Engineering, and Mathematics (STEM) was undeniable, a pressing query emerged: How did students in STEM and non-STEM fields navigate their academic journeys, particularly in general mathematics? This study delved into this educational divide, exploring students' methods, outlook, and academic performance. To collect data on students' learning and study strategies, the Learning and Study Strategies Inventory (LASSI) questionnaire, widely adopted and used, was utilized. This investigation, conducted at Nueva Vizcaya General Comprehensive High School, utilized a descriptive-exploratory research design. Thus, this study aimed to thoroughly investigate how STEM students and those in non-STEM strands approached their studies. It paid specific attention to their study strategies, their performance in general mathematics, and the creation of mathematical models to understand their academic performance better. The results shed light on these students' distinct ap-

proaches and provided valuable insights for enhancing teaching and learning practices in a constantly evolving educational environment. The study concluded that STEM and non-STEM students displayed a mix of effective study strategies and areas needing improvement. Notably, both groups showed relatively low achievement in general mathematics. Recommendations included enhancing study strategies, addressing academic anxiety, and refining mathematical performance models.

Keywords: Anxiety, attitude, concentration, self-testing, motivation



SoGS-SR-051

Teachers' Competence, Utilization, and Self-Efficacy in Teaching Geometry with ICT Integration: Towards Preparation for a Training Program

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This study investigated the competence, utilization of information and communication technology (ICT), and self-efficacy of mathematics teachers in Junior High Schools in Northern Nueva Vizcaya, particularly focusing on Geometry instruction. Utilizing purposive sampling, the research revealed that teachers predominantly operated at the Applying level according to the UNESCO ICT Competency Framework, showing proficiency in certain ICT skills but varying levels of competency in integration. While teachers engaged with ICT platforms frequently for geometry teaching, there were differences in tool utilization. Overall, teachers demonstrated strong confidence in ICT use for geometry instruction yet perceived areas for improvement, particularly in extending discussions with ICT and seeking guidance on integration. These findings underscored the importance of targeted professional development to enhance teachers' ICT skills and confidence, ultimately advancing the quality of mathematics education in the region.

Keywords: ICT integration, geometry, training program, dynamic geometry computer software



SoGS-SR-052

**Pagtatasa Sa Kompetensi Ng Mga Mag-Aaral Sa
Pagbasa at Pagsusuri Ng Iba't Ibang Teksto Tungo Sa
Pananaliksik ng Panukalang Kagamitang Multimodal**

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Ang pananaliksik na ito ay may pamagat na **Antas ng Kompetensi ng mga Mag-aaral sa Pagbasa at Pagsusuri ng Iba't Ibang Teksto Tungo sa Pananaliksik: Pagbuo ng Panukalang Multimodal** na may pangkalahatang layunin na makapagtasa ng kompetensi upang matukoy ang antas ng mga mag-aaral at makabuo ng panukalang multimodal. Ang metodolohiyang ginamit sa pag-aaral ay ang kombinasyong *quantitativequalitative* napag-aaral at ito rin ay nasa deskriptibong pag-aaral. Ang sakop ng pag-aaral ay para sa taong panuruan 2022-2023 ay idinaos sa Don Mariano Marcos National High School-SHS. Upang makuha ang bilang ng tagatugon sa pag-aaral gumamit ang mananaliksik ng *Slovins Formula* upang tukuyin ang kabuoong tagatugon, gumamit din ang mananaliksik ng mga *indicators* upang bigyang interpretasyon ang mga resulta ng datos na nakalap. Natuklasan ng mananaliksik na kinakailangang magkaroon ng mas malawakang istrategiya na tutugon sa pagkatuto ng mga mag-aaral gamit ang multimodal na mga kagamitang panturo. Lumalabas sa pag-aaral na higit ang pagkatuto ng mga mag-aaral sa kung gagamitan ng multimedia at teknolohiya sa pagpapadaloy ng talakayan. Batay sa rekomendasyon kinakailangan ding sumailalim ang mga guro sa mga Seminars/LAC Sessions/INSET upang maisakatuparan ang layunin ng kagawaran para sa lahat ng mga mag-aaral.

Susing salita: Multimodal, MELCs, TPACK, ADDIE

SoGS-SR-053**Reading Performance, Comprehension, Interests, and Challenges of Learners with Social Difficulties and Inattention: Towards A Prototype Teach Like a Champion-based Intervention**

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Reading is a multifaceted cognitive process that requires integrating various skills such as decoding, fluency, and comprehension. This process can present unique challenges for learners with social difficulties and inattention. With appropriate interventions and support, these learners can develop effective reading skills, bolster their comprehension, and cultivate a love for reading. The key is to understand each learner's unique needs and use this understanding to guide instruction and support. This research study explored learners' reading performance with social difficulties and inattention. It aimed to develop a reading remediation program tailored to their interests and challenges. This study considered fifteen learners with social difficulties and inattention in an inclusive classroom in Bayombong Central School, Special Education Center Solano East Central School, and Integrated Special Education Center. This study employed descriptive and qualitative techniques to identify reading levels and comprehension and to document the learners' reading interests and challenges based on parents' narratives. The study's findings revealed that the learners' reading performance varied across word, paragraph, and story levels, with most falling within the paragraph level. Reading comprehension was mostly at an instructional level. Challenges included parental guidance dependency, difficulty sustaining attention, and achieving reading comprehension. Based on these findings, a reading remediation program following the Teach Like a Champion approach is proposed, incorporating learners' interests in arts, body movements, and music. The study concluded that these learners, while capable readers, require targeted intervention to achieve desired reading level standards. Recommendations include exploring reading intervention strategies, adopting these strategies considering learners' interests and challenges, and utilizing the

proposed reading intervention program during out-of-school activities.

Keywords: Learners with disabilities, reading remediation, reading skills, reading strategy, special needs education



SoGS-SR-054

Evaluation of Student-Trainees' Competencies Vis-À-Vis Implementation of Work Immersion Program

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The study employed a quantitative-qualitative approach and descriptive research method through survey questionnaires and face-to-face interviews. This study evaluated the work immersion program of Saint Mary's University Senior High School in terms of a) basic and core competencies of the specialized subjects undertaken and b) implementation of the program through preparation, deployment, monitoring and evaluation, and post-evaluation. The findings of the study showed that both partner supervisors and student-trainees under the Technical-Vocational and Livelihood (TVL) Track, particularly from Information and Communications Technology (ICT) and Home Economics (HE) strands, assent that the latter possessed the basic and core competencies required in the workplace. However, in consonance with the demands of the modern workplace, it is apparent that further training should be provided for professional growth and adaptability. The evaluation of the work immersion program indicated a well-structured approach in terms of technical aspects. Moreover, both the partner supervisors and student trainees have a clear understanding of the immersion schedule. The findings also showed that the student trainees knew their roles and responsibilities. Both groups acknowledged a clear system for monitoring and evaluating student performance. Feedback from the work immersion supervisors was provided to student-

trainees. On the other hand, the findings also revealed the following challenges: dealing with difficult co-workers, overloaded, unfamiliarity, or improper assignment of tasks, and the limited number of work immersion hours to discuss the overall impact, learning outcomes, and career relevance of the program. Relative to this, the work immersion program should be enhanced by lengthening the duration of the immersion period, incorporating specialization-based re-tooling seminar workshops, and conducting post-immersion conferences for feedback to be reviewed, evaluated, and considered for implementation.

Keywords: Basic competencies, core competencies, enhanced work immersion program, implementation of work immersion, Senior High School



SOGS FACULTY RESEARCHES

SoGS-FR-01

Culture of Academic Optimism vis-à-vis Performance Appraisal: Boosting School Academic Buoyancy in a Catholic HEI

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Benito D. Buyacco Jr., Atty. Epifanio Delbert G. Galima III*

Catholic schools of Higher Educational Institutions (HEI) endeavor towards a culture of school academic optimism. The recent global pandemic impacted the world by creating various approaches to the new educational landscape. This phenomenon affected the teaching-learning process, specifically the schools' academic optimism in view of academics for both teacher and learner. Using a quantitative and correlational method, this study explored the academic optimism of a Catholic HEI with full-time permanent tertiary faculty as respondents. This study intended to provide baseline information towards crafting mediatory activities to boost the school's academic optimism. This is significant for administrators, the human resource development office, faculty, and students to ensure academic achievements. Based on the results, the level of academic optimism of the school in three composite elements revealed a high level of collective efficacy, collective teacher trust in students and parents, and academic emphasis. The overall performance appraisal of the respondents varied from high to very high. At the same time, some opted not to indicate their rating. The control factors like sex, age, tenure, and highest educational attainment did not affect their academic optimism except on the school assignment and when compared across the composites, which noted significant differences. There was a significant correlation between faculty academic performance and academic optimism, which implies that high academic optimism affects the overall performance rating of the faculty and vice-versa. The school's academic optimism is high, but improvement opportunities exist to sustain academic buoyancy. The academic optimism of the faculty

must be enhanced specifically on collective faculty trust in faculty and parents, the lowest in the three domains. Thus, an enhancement activity must be conducted to sustain academic optimism and the schools' academic buoyancy.

Keywords: Collective efficacy, academic achievement, academic emphasis, faculty trust, academic resilience, Catholic HEI



SoGS-FR-02

**A Standards-based Professional Development Program
Based on Mathematics Teachers' Teaching Confidence
and Factors Affecting it**

*Analyn A. Guevara, PhD, Domingo T. Guntalilib, Jr., Donna
Bee R. Tominez,*

Confidence in doing someone's work helps increase productivity, effectiveness, and efficiency. However, anxiety can interfere with and affect that confidence. For mathematics teachers, such confidence is necessary, especially since many of their students are anxious about their subject, and their confidence can help alleviate the struggles in teaching and learning for the students. Hence, this study aimed to describe the pre-service and in-service mathematics teachers' teaching confidence and the factors affecting it and eventually design a professional development program based on the Philippine Professional Standards for Teachers (PPST). This study used quantitative and qualitative methods to meet its objectives. It used a questionnaire distributed to Saint Mary's University's pre-service and in-service mathematics teachers, from the Grade School Department to the College Department. Means, medians, percentages, and thematic analysis were utilized as data treatments. Results revealed that the mathematics teachers are quite confident in performing their tasks. The top three factors that affect their teaching confidence include students' attitude and interest in learning Mathematics, preparedness and mastery of the content, and not being updated on the new techniques, strategies, trends, and styles in

teaching Mathematics. As a result, a professional development program was designed.

Keywords: Learning anxiety, pedagogical competence, self-efficacy, teaching anxiety



SoGS-FR-03

Challenges and Prospects of E-learning in the Graduate School Programs of Saint Mary's University

*Melanie G. Gurat, PhD, Rowena A. Rivera, PhD,
Regina D. Ramel, PhD, & Rommel S. de Gracia, PhD*

This study determined the challenges and prospects of e-learning in the graduate school programs of Saint Mary's University, Bayombong, Nueva Vizcaya. This study used a concurrent nested mixed-method design involving faculty and students who willingly participated and have experienced online classes at the university. Data were obtained using a Likert Scale Questionnaire on challenges in e-learning adopted from Ja'ashan (2020) and a summary of the prospects of e-learning in the education of Blezu and Popa (2008). An open-ended question on challenges and prospects in e-learning was also included in the questionnaire. Graduate students and faculty have the same ratings in their academic, technological, and administrative challenges. The graduate students' perception of e-learning's dynamism, real-time, speed of delivery, consistency, and global reach were significantly higher than the faculty of graduate studies except for collaboration and convenience. The results of this study were used to craft an action plan to ensure continual improvement in the delivery of quality education using e-learning in graduate studies.

Keywords: Academic, administrative, blended, flexible, online, and technology

SoGS-FR-04

**The Ecopedagogical Competence of Marian Educators:
Prospects for Ecoliteracy, Ecophilia, and
Green Campus**

*Felipe V. Nantes Jr., PhD, Haydee D. James, PhD, Sherwin A.
Marciano, Christopher Allen S. Marquez, PhD & Mark C.
Balonquita*

Despite the calls for environmental care and protection amid sustainable development, unceasing neglect and indifference still exist, resulting in local and global environmental catastrophes. One of the ways to respond to this urgent concern is a critical and transformative environmental pedagogy termed in this paper as eco-pedagogy. The citizens must be educated on their critical duty to love, care, and protect the environment. Educational institutions, especially educators, have a herculean role in intensifying the promotion of environmental care. This study sought to assess the ecopedagogical competence of educators in a university. It employed the quantitative and qualitative methods using a survey questionnaire. Most respondents were females aged 31-40 and from the tertiary department. The data revealed that Marian educators have good experience integrating environmental education topics into their courses or subjects. Grouping the respondents according to sex, however, yielded that they have a low level of eco-pedagogical competence. On the other hand, there is a moderately high level of eco-pedagogical competence when grouped according to school. Marian educators differ in their experiences integrating environmental topics or ideas into their courses or subjects when grouped according to sex, age, school, and years of teaching in SMU. Only age shows a significant relationship with eco-pedagogical competence among the demographic variables, signifying a strong positive correlation between the two. Most Marian educators practice the CHSF minute and integrate environmental issues into class discussions. These assessment results shall serve as a basis for a more intensified drive for ecoliteracy, a more focused promotion of ecophilia, and a firmer foundation for a green campus campaign.

Keywords: Critical theory, environmental education, eco-literacy, eco pedagogy, ecophilia, environmental pedagogy

Research Unit

SCHOOL OF

ACCOUNTANCY AND BUSINESS

(SAB)

Research Coordinator: Sheryl A. Baria

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SAB STUDENT RESEARCHES

SAB-SR-01

Supply Chain Management Practices and Problems Encountered by a Catering Business in Bayombong, Nueva Vizcaya, Using SCOR Model

Doria, Charm Sherie M., Madronio, Alexandria Vea M., Napudo, Breneth S., Perez, Joewell, C., Salcedo, Jamieca, A., Villanueva, Joan Valerie, P., Garra, Angela C., BSC- Marketing MBA

Catering is necessary as a large part of any event or party revolves around food. Food catering can provide meals and services smoothly and prepare for an event. Therefore, this research aimed to determine the supply chain management practices and problems encountered by a catering business using the SCOR model in Bayombong, Nueva Vizcaya. The study uses a qualitative-descriptive design and a case study approach. Purposive sampling was used to identify the informants who could provide the information needed for this study. The owner and the employees of the food catering establishment were interviewed face-to-face to gather the data needed for this study, which was supported by document scanning. Thematic analysis was used to analyze the data. The practices of food catering in planning include meetings and menu planning; for sourcing, the ingredients and materials needed were from different suppliers and purchased a day before the event. In the making, they do *mise en place* while following the standard in food handling. If it is packed securely, it will be delivered by their rented vehicles. After the food service, the plastics are separated from the leftover foods, or the guests take the food home. In terms of the problems faced by the food catering industry in planning, it was the inconsistency of clients' decisions towards their event and their high expectations but low budget, while in sourcing, it was the scarcity of goods and raw materials needed for production. In the making, they struggle to meet the proper time and deal with the changing weather. In delivery, the cooked and finished

food is transported by their rented vehicles. As for the return of food, no problem has been encountered by the food catering establishment.

Keywords: Changing weather, food catering establishment, high expectation, leftover food, rented vehicles



SAB-SR-02

An Assessment of the Food Safety Knowledge and Practices of Food Handlers in Selected Turo-Turo Restaurants near Saint Mary's University

Gamido, Mary Angela L., Mateo, Ralph William A., Ocampo, Ashly V. Osingat, Glecybelle N., Soriano, Mark Francis O., Vergara, Jonathan P. BSA-MAEd

Turo-Turo in the Filipino language means “point-point,” which implies a local and cafeteria-style service of food handlers wherein a customer picks a combo of entrees from a range of prepared dishes; it also offers fast service, which makes them popular with customers that have limited time to eat, wherein you need to choose and pay. Moreover, food safety refers to the practices used to prepare, handle, and store food intended to prevent foodborne illness. Thus, this study sought to obtain current information on the food safety knowledge and practices of food handlers of the *turo-turo* restaurants near Saint Mary's University. This study used descriptive–quantitative research to assess knowledge of food safety and food handlers' practices. The researchers selected six (6) *turo-turo* restaurants. Concerning this, a minimum of three (3) hands-on staff from each restaurant were approached to participate in the study. Moreover, an adapted questionnaire checklist was used to gather the needed data for the research study. The findings stated that most food handlers know about proper food safety; however, few know some of the statements under cross-contamination and proper food storage. On the other hand, most food handlers practice the proper food safety practices. However, a few

respondents do not observe the food safety practices regarding some statements in the Sanitizing Equipment and utensils category.

Keywords: Turo-turo, food handlers, food safety knowledge, food safety practices



SAB-SR-03

**Service Quality Management of a Coffee Shop in
Bayombong, Nueva Vizcaya**

Apigo, Ralph Dave C., Almonte, Trixia Kae A., Beltran, Nicole E., Dela Cruz, Shyna Mae L., Pascua, Krystel Natalie B., Racimo, Lhenzel Joy P., & Villanueva, Harrison T., PhD

Service quality has become a significant matter for the hospitality and tourism industry. The theory of service quality has evolved over the years. Service quality is a very important concept that businesses must understand to grow and remain competitive in the business environment. Service quality is considered to be very critical to any modern business because it contributes to higher satisfaction among customers, profitability in business, and improved customer loyalty. The main purpose of this study was to determine the service quality of a coffee shop. The questionnaire, which was validated by the panelists and the selected coffee shop chosen as the locale of the study, was used as the tool for data collection. The respondents involved were Saint Mary's University college students who visited the coffee shop and were purposively selected. Through a convenience quota sampling technique, 100 respondents were picked based on their availability and willingness to be included as respondents and sign the informed consent form. The overall response of the respondents implies that the coffee shop employees deliver prompt service. Thus, the establishment can fulfill customer expectations through reliability, tangibility, empathy, and responsiveness. The paper provided results and recommendations, including adding more design to attract

customers, more flavors, keeping a good ambiance, and providing free Wi-Fi to improve the service quality management practices of the chosen coffee shop.

Keywords: Assurance, coffee shop, empathy, reliability, responsiveness, service quality, tangibility



SAB-SR-04

Hotel Maintenance Management Practices and Challenges: Basis for Efficient Operation

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Clariño, Anjelo A., Quezon, Chase Elmer M., Soriano,
Zhekainah Marvi A., & Vergara, Jonathan P., BSA, MAEd*

Maintenance management is the process of planning, scheduling, and managing maintenance, and many business organizations rely on maintenance management to keep their business running at full capacity. Thus, this descriptive-quantitative study determined the maintenance management practices and challenges encountered by hotels in selected municipalities of Nueva Vizcaya. The study revealed that the hotel's identified maintenance management practices from the viewpoint of the hotel operators (managers and owners) are often implemented and considered fairly important. Moreover, results indicated that the "Maintenance Management Team" practices are crucial in their maintenance management. Furthermore, results showed that the hotels faced barriers in implementing their practices, and the attitudes of the users and misuse of the hotel facilities were the prime problems for the poor implementation of maintenance management.

Keywords: Maintenance identification and assessment, maintenance knowledge-sharing and communication, maintenance management plan, maintenance management team, maintenance

monitoring activities, maintenance training



SAB-SR-05

Food Safety, Hygiene, and Sanitation Practices of Food Vendors in Solano Nueva Vizcaya

*Bello, Kimberly B., Bernal, Airene Jeanne F.,
Garra, Angela C., MBA*

This study determined the extent of food safety, hygiene, and sanitation practices of food stall owners in Solano, Nueva Vizcaya, in terms of food storage, food preparation, food staff hygiene, cleaning, sanitizing, and dishwashing. The study utilized the descriptive-evaluative comparative research design and gathered data from a survey questionnaire. Most respondents are high school undergraduate female vendors/owners aged 18 to 29 who have been in business for 1 to 2 years and have equal distribution regarding their business location and selling fried chicken. Cleaning, sanitizing, and dishwashing procedures have the greatest extent of practice, and food preparation shares equal practice to the highest extent. Food storage also shows that the extent of the practice is always practiced. Food staff hygiene shows that it has only a high extent of the practice. A significant difference is identified in the extent of food safety, hygiene, and sanitation practices of the food stall owners and staff when grouped according to profile variables. However, business location influences the food staff's hygiene, cleaning, sanitation, and dishwashing because of their different business locations. Moreover, food storage and staff hygiene were the concerns of immediate attention and improvement in the extent of the practice. The Local Government Unit (LGU) may consider programs and training regarding food safety hygiene practices and certification of standards on food safety, hygiene, and sanitation being complied with.

Keywords: Food storage, food preparation, food staff hygiene, cleaning, dishwashing, sanitizing



SAB-SR-06

Expectation vs. Reality: Food Service, Price, and Promotion of a Fast-Food Restaurant

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Ang, Chin-chin A., Collado, Jan Cyrel Joy J., Infante, Rhiana
Mashielle E., & Ibarra, John Michael C., MSHRM*

In the Philippines, deceptive advertising has been present in the market. The presence of ads from fast-food restaurants has also made consumers wonder if it is accurate in what they offer. With this evident deception in the market, consumers of a certain fast-food chain may face a similar problem in buying their food, whether they are getting what they are paying for. This study used a quantitative descriptive method that includes administering survey questionnaires in Likert form to diners of the fast-food chain who are aged 18-59 years old, excluding those who buy through the drive-thru and take-out. The study conducted in February 2023 revealed that among the 103 respondents, female emerging adults and young adults are mostly consumers of a fast-food chain in Bambang and dine occasionally. In terms of service, it shows that crew members who are not friendly have the highest frequency in the items. In price, the item that got the highest agreement was the additional fees when upgrading drinks, which the cashier did not disclose, and respondents consider it a deception. Regarding promotion, not receiving the same item as advertised got the highest agreement. Also, respondents did not experience other deceptions, resulting in them not taking any action to address the identified deception. The results have shown no evident deception in service, price, and promotions other than those identified as it receives a high frequency; nonetheless, it still falls under no perceived deception. It demonstrates that the fast-food restaurant fulfills its promised advertisements, continues improving its service, and avoids deception for customer retention.

Keywords: Marketing, deception, food and beverage, buying behavior

SAB-SR-07**Strategies Employed by Restaurants in the Province of Nueva Vizcaya to Survive the Impacts of the Pandemic**

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Cabrerros, Tristan Jay C., Caluya, Chrystene Frances D.,
Jovinal, John Raphael, Roldan, Desiree E., & Ibarra, John
Michael C., MSHRM*

Despite the challenges posed by COVID-19, the crisis became a threat and an opportunity for food entrepreneurs. For them to thrive, the use of marketing strategies is a must. The strategies they apply to attract customers, not only locally, interest and intrigue the researchers. This research led to knowing the strategies employed by restaurants located in Nueva Vizcaya, specifically on the two well-known restaurants. The researchers utilized a qualitative approach; hence, a two-part interview guide was used. Results showed that both restaurants mentioned that the pandemic played a huge role in their struggles in operation, sales, marketing, and source of suppliers. They also mentioned that social media as their marketing tool became their benefit regardless of the crisis, along with coordinating third-party delivery applications. The study showed that the challenges were derived from the informants' experiences. There were still difficulties, such as a slow and low inflow of cash, lack of operations management skills and facilities for marketing, bargaining power of the suppliers, quality service, expenses and bills incurred, and management of employees. The informants then recommended that for marketing strategy, complex options and delivery schemes of products and contingency plans in sales are recommended to prevent any other difficulties brought by the COVID-19 pandemic.

Keywords: Restaurant, strategies, pandemic, operations, sales, marketing, source of suppliers



SAB-SR-08

Students' Perception of the Implementation of Health and Safety Protocols in Selected Food and Beverage Establishments

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The Corona Virus Pandemic has changed the hospitality and tourism industry in a great way, leaving the industry to fend for itself amidst the "new normal." This research study determines the students' perception of implementing health and safety protocols released by the Department of Trade and Industry (DTI) in selected food and beverage establishments. The researchers surveyed 100 students of the School of Accountancy and Business. This study used a quantitative approach, using the four-point Likert scale to measure the level of implementation among the selected establishments. Using the profile variable sex, the respondents had to rate their perception of implementing the health and safety protocols in five categories: screening area upon entry, sanitation, ventilation, dining setup, and visual cues or signages. Based on two selected food and beverage establishments in Bayombong town, findings revealed that the student respondents perceived all health and safety protocols to be moderately implemented. Furthermore, no significant difference in the perception of female and male respondents was statistically found. Since the Coronavirus is still evolving new strands, recommendations for consistent, sustained, and concerted efforts to implement the protocols are recommended.

Keywords: Joint memorandum circular no. 2021-02, hospitality and tourism industry, COVID-19 protocol implementation



SAB-SR-09

Stakeholders' Assessment of the Sustainable Tourism

Development of Dupax Del Sur

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Jelison May B., Ibarra, John Michael C., MSHRM*

As an economically profitable activity generating employment and contributing to a thriving economy, tourism also brings about adverse effects on the environment, the welfare, and the lives of people directly impacted by the influx of tourists (Glup, 2021). However, sustainable tourism will protect the two important resources of the world we live in natural and human – from destruction. One important ingredient of sustainable tourism practice is the involvement of stakeholders. This quantitative-descriptive research aimed to determine the stakeholders' assessment of the sustainable tourism development of Dupax del Sur. An adopted survey questionnaire from the study of Shen et al. (2020) with a supplementary interview was utilized to gather the data from 50 respondents from three groups of stakeholders – residents, government, and private. Their demographic profile, assessment of the economic, sociocultural, and environmental aspects of sustainable tourism, and recommendations regarding improvement are the different areas covered in this study. The respondents generally assessed tourism of Dupax del Sur to be sustainable to a certain extent in three areas: economic, socio-cultural, and environmental. They have identified some benefits of tourism, like promoting and maintaining culture and tradition under the economic aspect, protecting natural forest/ protected areas, and preserving wildlife in the environmental aspect. Some problems, issues, and threats include increased cost of living (economic), lack of awareness and appreciation of traditional culture (socio-cultural), and land and noise pollution (environmental). They also gave recommendations and specific actions to address these problems and issues, including improving the existing sites (San Vicente Mountain, Sitio Victoria), promoting the culture of Dupax del Sur, and preserving and protecting cultural and historical heritage.

Keywords: Sustainable tourism, economic, socio-cultural,

environmental

SAB-SR-010

Tourism Students' Preferences on Destination Attributes After Pandemic

Almeron, Jane M., Babaran, Abegail G., Balaoro, Jordan L., Domingo, Xyla Erycka D., Leo, Kyla Louise A., & Vergara, Jonathan P., MAEd

This study was used to establish the level of preference for tourists' destination attributes and the extent of the importance of the tourists' destination attributes among Saint Mary's University tourism students after the pandemic. The findings show that the majority of the respondents prefer an adventurous experience, as seen by the greater number of respondents who strongly liked the level of preference for tourist destination features, with the highest percentage for travel motivation. It also shows that the level of preference for the majority of the respondents strongly preferred the tourist destination attributes given. As assessed by the respondents, leisure is strongly preferred as one of the most important travel purposes. No significant difference exists in the preference level for tourist destination attributes between respondents from the two different age groups. This is understandable, given that both age groups gave the same overall rating of 5 (highly preferred) for the characteristics of tourist destinations. There is also no significant difference in the preference level for tourist destination attributes between respondents from the two sexes.

Keywords: Travel motivation, travel purpose, preference



SAB-SR-011

**Value Chain Analysis:
The Case of Blended Ph**

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This study aimed to analyze and document the value chain of Blended Ph, a coffee shop, and provide recommendations for improving its value chain activities. Qualitative data analysis was applied to determine the coffee shop's value chain activities, which a sole proprietor established, Mr. Joel Romar Gabriel Espino, CPA. He started his business as a franchisee of Mood Tea throughout the outbreak of the pandemic. Still, later on, the owner decided to manage his coffee shop, which became known as Blended Ph. The coffee shop currently has eight (8) employees - (2) kitchen personnel, (2) coffee attendants, (2) bar attendants, (1) trainee, and (1) owner. From the data gathered through an interview guide, the primary activities of Blended Ph entail the presence of a local supplier, which they rely on, and a supplier overseas from which they order specialized coffee. Machines make the cafe's products. Blended Ph is marketed to its customers through word-of-mouth and recommendations. Collection of orders for walk-ins is done through face-to-face interaction, and for take-outs, they use an FB Page and Messenger chat box. It has partnered with local food delivery services such as *Carabuy* and *Padayon* to deliver orders. For its support activities, the cafe has a main distributor that offers a great deal of discounts. Machines and technology have contributed to its production and efficiency. It also has human resource management policies and procedures. The problems encountered are lack of supplies and staff due to fluctuation of customers. The shop also needs more equipment to make the work faster and avoid delays. It also faces a lack of promotional activities, especially in social media. Fluctuation of raw material prices is another issue that the coffee shop faces. Also, the POS system is an issue; sending orders to the kitchen can waste time and is unusable when there are electricity outages. The recommendation is to encourage and analyze all the data and have greater knowledge about value chain analysis. It is recommended that researchers should consider the factors that present challenges to business operations.

Keywords: Inbound logistics, marketing and sales, operations, service, technology development, human resource management, and infrastructure

SAB-SR-012

Perception of Online Learning Stress and Environment of Hospitality and Tourism Management Students

Urbano, Rosemarie R., Singh, Harpreet Q., De Vera, Justine Marielle D., Marzan, Sherwin Jumhel C., Barcarse, Bj Niño G., & Windell Marie M. Colobong, BSTM

As the Covid-19 virus took over the world, everything was done virtually. Every transaction, work, and even classes were held online. This caused stress as everyone tried to cope with the sudden switch to the virtual world. This quantitative research paper explored the perception of online learning stress and the environment of hospitality and tourism management students through descriptive-correlational and descriptive-comparative research methods. A total of 200 students from the population of Marian Hospitality and Tourism Management enrolled in the 2nd Semester of the S.Y. 2021-2022 participated. Participants were given a Google Forms questionnaire: The Perceived Learning Stress Survey (PLSS) and Student Perception of Learning Environment Survey (SPLES). This tool was adapted from Lazarevic and Bentz (2020). This was used to study the perception of online learning stress and environment experienced by the Marian Hospitality and Tourism Management students to understand better how the online learning environment affects students. Results showed that the participants experienced moderate levels of perceived stress, consistent throughout all profile variables. Further, the results of the SPLE Survey showed that the participants had a positive attitude towards online learning. The results also showed a correlation between online learning stress and the online learning environment, indicating that students with a higher level of agreement (perception) with the online learning environment tend to have lower online learning stress.

Keywords: Satisfaction, moderate level, positive perceptions, learning environment



SAB-SR-013**Adoption of Virtual Tours as a Promotional and Alternative Tool in Times of Post Covid – 19 Era**

Cabauatan, Kimberly Coleen R., Dagulasi, Mark Vergel D., Flores, Mark Russel D., Urbano, Vincent James P., & Maslang, Kenneth L., PhD

Virtual tours (VTs) became popular during the COVID-19 pandemic, but these could still be utilized, especially as a promotional and alternative tool when other types of crisis arises, such as human conflicts, actual site damage, natural disasters, man-made hazards and other health risk crises. Utilizing a descriptive-comparative method of research, this study dealt with the extent of perception on the adoption of VTs as a promotional and alternative tools for site and destination managers both in the private and public sectors. Some selected profile variables were included, and perceptions were assessed in terms of usefulness, ease of use, enjoyment, hazard-related attributes and whether one has the intention to adopt VTs. Results showed that most agreed that VTs are useful, have ease of use, are enjoyable, and greatly respond to hazard-related attributes. Moreover, there is a positive relationship between the adoption. of VTs in the future, particularly as a promotional and alternative tool when crises arise that impede an actual site visit. There is a consensus, however, that VTs can never replace the actual site visit, given all considerations, advantages, and benefits. The study also found out that gender, age group, civil status, how VTs are experienced, and where these are experienced do not affect the perceptions of virtual tourists. In terms of higher educational attainment, those with post-graduate studies have higher perceptions compared to those who did not reach college and college graduate. Lastly, those who responded that VTs could never replace the actual site visit had higher ratings compared to those who were not certain and those who said yes.

Keywords: Actual site visit, hazard-related attributes, Internet-assisted realities, travel and tourism, tourism plan

SAB-SR-014**Safety and Security of Paragliding as a
Recreational Activity**

*Bilag, Chlorene Nichole M., Ferrer, Paulhyne Khyle E., Pariñas,
Allyssa Jade A., Seangoy, Allaiza Paulyn May B., Tagayo,
Morelia Y., & Covita, Mayvelyn S., PhD*

This research explored the safety and security aspects of paragliding as a recreational activity in Sitio Naduntog, Barangay Tiblac, Ambaguio, Nueva Vizcaya, Philippines. The qualitative descriptive method was employed, and a site visit with a group interview using an interview guide was conducted among nine qualified pilots working at the paragliding site. Risk factors such as flying with low-level skills and accountability, poor knowledge of weather and terrain conditions, and inadequate strength and weight were significant dangers in paragliding. Safety precautions before, during, and after flights were found to be crucial, requiring careful adherence to guidelines and instructions. The study also uncovered various issues, including weather-related challenges, psychological readiness, lack of insurance coverage for passengers, and concerns among pilots regarding the cultural attitude, high danger, and expensive equipment costs. Furthermore, the research highlights the need for financial assistance for the United Grassroots and Tribes Paragliding Association (UGAT-PAC), the organization overseeing the paragliding site, due to the substantial investment required to develop a fly site. In conclusion, even though paragliding is risky, it can be enjoyed safely through proper preparation, skill development, and adherence to safety measures. The findings of this study contribute valuable insights to enhance the safety and security of paragliding as a recreational activity. The purpose of conducting the study is to raise awareness about the safety and security of paragliding in Ambaguio, Nueva Vizcaya, as a recreational activity, thus promoting paragliding as part of the tourism destination and helping the Tourism industry of Nueva Vizcaya, Philippines.

Keywords: Safety, security, paragliding, recreation, risk factors, safety precautions, sports tourism, United Grassroots and tribes paragliding association (ugat-pac)



SAB-SR-015

**Level of Skills Competencies of Tourism
Management Students**

Esperanzate, Rey G., Infante, Nobhem Grace O., Llamelo, Karla Mae B., Ortiz, Illana Erin G., Sandoval, Jeonard N., & Soriano, Mark Ian J., MS

Tourism is a key driver of economic development and an important factor in job creation and opportunities. With this, the tourism industry recognizes the importance of and responds to the required skills and competencies. This study aimed to determine the level of skill competencies of the tourism management students of Saint Mary's University based on CMO 62s 2017 based on students' perceptions. This was a quantitative study wherein descriptive comparative design was utilized. A survey questionnaire adopted from the CMO 62s 2017 was used in this study. Results showed that female senior tourism students at SMU Senior High School took the ABM strand. Researchers determined the level of skills competencies, namely, general, business and management, common tourism and hospitality, and core tourism skills competencies as a high level of skills competencies. Results indicate a significant difference in general skills competencies when respondents are grouped according to senior high school graduates. It indicates that general skills competencies are significantly higher than business and management skills competencies, common tourism and hospitality skills competencies, and core tourism skills competencies when grouped according to sex, senior high school graduated from, and strand in senior high school. Meanwhile, general skills competencies, business and management competencies, common tourism and hospitality competencies, and core tourism skills competencies are classified as high-level skills competencies.

Keywords: Tourism workforce, tourism proficiency, tourism expertise, tourism capability, capacity building



SAB-SR-016

Students' Career Perceptions in Tourism and Hospitality Industry

Tiffany V. Abrias, Lady Jane L. Bautista, Mary Jane D. de Guzman, Jhustine Joy L. Pablo, Jamaica W. Rebuta, & Haydee D. James, PhD

Hospitality and Tourism Management (HTM) is a field that offers many job opportunities for students interested in the tourism and hospitality industry, which is known as one of the most powerful economic drivers in the Philippines. However, numerous studies suggest that students' perceptions of this career tend to be negative. Hence, this study used a descriptive-comparative approach to discover the perceptions of SMU second to fourth-year HTM students enrolled during the academic year 2021-2022. Online surveys using Google Forms were utilized to gather data from a total of 52 respondents and determine their perceptions in terms of positive and negative aspects of tourism work nature, social influence, industry-person congeniality, pay/promotion benefits, career qualification, and choice to study tourism and hospitality industry and their willingness to work in the tourism and hospitality sector after graduation. According to the study, there were no significant differences among various categories. However, when the SMU-HTM respondents are grouped by year level and sex, it is discovered that there is a significant difference in only one element among the eight categories, and that component is social influence. By presenting prospective students with accurate career information, their decision to study tourism at the university level may be based on a genuine desire to work in tourism at the graduate level. This might add confidence to the number of competent graduates applying in the industry.

Keywords: Behavior, commitment to work, employment, long working hours



SAB-SR-017

Gastronomical Treasures of Nueva Vizcaya: A Study of Awareness and Potentiality as a Tourist Attraction

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Food has been an influential factor in why tourists visit a destination. In the Philippines, several provinces promote their local cuisines as one of the attractions that can be experienced. The province of Nueva Vizcaya is known for making *buko pie*, which is worth trying. The discussion focused on the awareness of the Novo Vizcayanos of its local food products. In addition, this study focused on the four factors that influenced the attractiveness of local food products. Using the survey questionnaires, the level of awareness of the locals of Nueva Vizcaya was determined in various gastronomic treasures. This study showed that the *Dendelot*, *Buko Pie*, Jams, and *Tupig* are the foods that 80 locals are very aware of. The four factors, preserving culinary heritage, adding destination authenticity value, destination marketing, and motivation in the level of influence that affects product potential attractiveness, are the most influential to the respondents. It also showed that the promotion and development of locally produced food products are several recommendations of respondents.

Keywords: Attractiveness, authenticity, gastronomy, local foods, promotion



SAB-SR-018

E-Payment Scheme Readiness of Small Businesses as

an Alternative Mode of Payment

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This study assessed the readiness of small businesses in Barangay Poblacion South, Solano, and Nueva Vizcaya to adopt e-payment schemes as an alternative mode of payment. The study uses a survey questionnaire anchored on the Technological-Organizational-Environmental framework (Baker, 2011). Frequency counts and percentages were computed to describe the profile of the respondents. At the same time, means and standard deviations were used to determine the respondents' level of readiness. One-way ANOVA and t-tests were performed to determine any significant relationship between respondents' profile and their willingness to adopt an e-payment scheme supported by responses to open-ended questions. The results showed that the respondents have a high level of readiness regarding technological, organizational, and environmental aspects, which implies that small businesses are ready to adopt relevant technologies. E-payment schemes are also viewed to be convenient and accessible, profitable and cost-effective, and time-saving and efficient. Its disadvantages, however, include security concerns, impracticality, and added costs. The significant relationship test shows that capitalization, availability of Fiber Line Internet, and availability of bank accounts significantly relate to the respondents' readiness to adopt e-payment schemes. On the other hand, educational attainment and tablet availability are related to the respondents' readiness to adopt e-payment schemes, but only in the technological and organizational aspects. In contrast, the number of personnel is related to organizational and environmental aspects of readiness to adopt e-payment schemes.

Keywords: Online banking, e-payment, technological aspect, organizational aspect, environmental aspect



SAB-SR-019**Service Quality of a Food Establishment in a Rural Economy**

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This study aimed to analyze and document the services rendered to the customers of Kusina Ni Tita Riza. It sought to determine the level of service quality expectation and service quality performance of Kusina Ni Tita Riza using the SERVQUAL model. The Servqual RATER Theory served as the study's instrument among the new customers of Kusina ni Tita Riza. Most respondents have a mean age of 25.26, female, single, and undergraduate. The level of service quality expectation and service quality performance is high; however, there is no significant difference between the expected level of service quality expectation and the level of service quality performance of Kusina ni Tita Riza.

Keywords: Service quality expectation, service quality performance, restaurant, rater

**SAB-SR-020****The Factors and Common Problems Affecting the Efficiency of the BS Office Administration Students in Studying Stenography**

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Stenography is one of the major subjects studied by BS Office Administration students, wherein they learn how to write three or four times faster than their longhand writing speed, saving a lot of time. This study utilized a descriptive-correlational research design to determine the factors affecting the efficiency of the students and the common problems encountered by the

students at Saint Mary's University in studying stenography. Furthermore, it aimed to determine the significant relationship between the factors and problems in studying stenography. The study showed that the teaching method and dictation process are the factors that affect the students' efficiency in learning stenography. On the other hand, memorization, mastery, and penmanship are the problems that they encounter. Overall, there is no significant relationship between the factors and the problems in studying stenography. Therefore, speed dictation activities and consistency in practicing are recommended for an effective teaching-learning experience.

Keywords: Stenography, efficiency, teaching methods, dictation process, students' attitude, listening ability, manual dexterity, mastery, memorization, penmanship, nervousness, English skills, motivational technique



SAB-SR-021

Organization Development Practices of the Nueva Vizcaya Electric Cooperative

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This study aimed to determine the organizational development practices and challenges Nueva Vizcaya Electric Cooperative respondents encountered. The research investigation used both quantitative and qualitative approaches to derive the results. Based on results regarding the demographic profile, the majority are 40 years old or above, male, married, holder of a BS degree, and regular in status who have been in the organization for 11-20 years. It was perceived that NUVELCO displays very good organizational development practices in all areas. The respondents differ in perception regarding age, sex, position, and educational attainment. Challenges encountered by the

respondents have been identified, such as no consultation with people, lack of training and dissemination, unclear transaction process, a minimal survey on customer satisfaction and unapproachable employees, change management without due consultation, lack of equipment, and simple solution to problems, minimal empowerment and absence of professional development of employees, undesirable work ethics, unmet goals, customer dissatisfaction on products and services and unsatisfactory quality of work life. Furthermore, the researchers recommend that NUVELCO maintain and improve its organizational development practices to provide more reliable, efficient, and quality work performance.

Keywords: Change management, people, strategy, structure, work ethics



SAB-SR-022

**The Extent of Cash Management Practices and
Experiences of Citrus Farmers in
Kasibu, Nueva Vizcaya**

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The process of gathering, processing, and using cash to meet financial responsibilities is known as cash management. This is significant for both individuals and businesses and it also affects agriculture significantly because farmers can track their profitability with effective cash management practices. The research intended to determine the cash management practices of citrus farmers of Nueva Vizcaya in terms of budgeting, cash collection, payment of expenses and obligations, savings, and record-keeping, as well as the farmers' cash challenges and experiences through a quantitative-qualitative research approach. The modified research survey questionnaire was used as a primary instrument for gathering data from the respondents. The results showed that citrus farmers moderately

practiced cash management in budgeting, collecting, paying expenses and obligations, and savings. However, citrus farmers revealed that they least practiced record-keeping. Based on the data gathered, most citrus farmers encountered different challenges in budgeting, cash collection, payment of expenses and obligations, savings, and record keeping. Proposed interventions that can help the citrus farmers acknowledge the value of implementing adequate cash management in their planning process were recommended. This may help farmers realize the relevance of regularly monitoring their operations as they are made aware of their cash inflows and outflows.

Keywords: agriculture, budgeting, cash collections, payment of expenses and obligations, record-keeping, savings



SAB-SR-023

Level of Usefulness of Management Accounting Tools and Challenges of Corporations in Solano, Nueva Vizcaya

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Using proper and sufficient management accounting strategies can help businesses address common issues and gain a competitive edge, especially today when the repercussions of globalization are forcing businesses to adapt. Even small and medium-sized businesses (SMEs) engaged in manufacturing, wholesale and retail trade, lodging and food service, finance and insurance, and professional, scientific, and technical activities must develop relevant solutions to daily problems, issues, and challenges. This study aimed to determine corporations' profiles, the usefulness level of management accounting tools, and their challenges in utilizing them. The research collected data from a sample of corporations and analyzed the responses of 37 out of the 42 participants. The study results show that a large

proportion of the sample has been operating for 4-6 years. In terms of current employees, the majority of the corporations have 10-49 employees. The findings also indicate that a significant proportion of the sample has an initial capital between 1,000,000 and 10,000,000, highlighting the importance of financial resources for these organizations. Regarding respondents' profiles, the study reveals that there are more female than male participants, with financial officers, accountants, general managers, and owners being the prevalent positions within the companies. Regarding the usefulness of management accounting tools, the study shows that all assessed tools are considered "very useful" by the respondents. Responsibility accounting received the highest rating, while balance scorecard, kaizen costing, and lean manufacturing received slightly lower ratings. These findings emphasize management accounting tools' perceived value and relevance in supporting decision-making processes. Furthermore, the research identifies several challenges corporations face in utilizing management accounting tools. These challenges include effectively resolving customer concerns, ensuring data accuracy and reliability, managing implementation costs, addressing tool complexity, dealing with employee opposition, integrating tools with existing systems, enhancing knowledge and comprehension, and tackling specific challenges related to budgeting, cash flow analysis, just-in-time practices, and inflation.

Keywords: Budgeting, decision making, responsibility accounting



SAB-SR-024

The Service Quality of a Café in a Municipality of Isabela and its Relation to Customer Satisfaction

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MAEd*

Customer satisfaction and service quality are regarded as essential business factors, and the growth of a business is highly dependent on how well it retains customers through service. Indeed, excellent service quality is anticipated to increase customer satisfaction, retention, and loyalty. This study sought to investigate the impact of a café's service quality on customer satisfaction in the municipality of Isabela. This study provided details regarding these variables. To collect the necessary data, references such as the internet were used for the questionnaires to be distributed to the respondents, customers who dined at the café, because researchers believed they would provide accurate responses and be easy to approach. It was quantitative research in which an approved survey questionnaire was used to collect the data on the variables under study. The questionnaire was disseminated to 101 randomly selected respondents. After analyzing the results, there is a reasonably high degree of agreement among customers about the five dimensions of service quality, which suggests that the café's services meet customers' standards. In addition, the analysis identifies a considerably high degree of customer satisfaction across all three elements, which suggests that customers are extremely pleased with the outcomes of their interactions with the café. The researchers then identified a significant correlation between these two variables. In conclusion, this thesis aims to thoroughly analyze the relationship between service quality and customer contentment in a café in the municipality of Isabela. This research seeks to contribute to improving service quality practices in cafés by bridging the knowledge and understanding gap in this area, ultimately resulting in increased customer satisfaction and sustainable business growth.

Keywords: Tangibility, reliability, responsiveness, assurance, empathy, food, service, atmosphere



SAB-SR-025

**E-Banking Service Quality and Challenges Encountered
by Employees of a Higher Education Institution**

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Electronic banking (E-banking) services are evidence of the accelerated innovative financial sector. As e-banking service becomes widely accepted, its quality is influenced by diverse factors: efficiency and ease of use, reliability, security and privacy, and responsiveness and communication. Hence, this study sought to determine the level of e-banking service quality and the challenges encountered by employees of a higher education institution when using it. Utilizing a quantitative and qualitative research design, with a total of 134 academic and non-academic personnel from Saint Mary's University who responded to the survey questionnaire, the study revealed that e-banking services are widely adopted and utilized and that the majority perceive a high level of e-banking service quality in terms of efficiency and use. Upon further analysis, it was found that there is a significant difference in the level of e-banking service quality in terms of demographics such as department and length of usage in automated teller machine and debit card services, point of sale, mobile money, frequency of usage in point of sale particularly in reliability, security and privacy, and responsiveness. Contrarily, no significant difference was found in the level of e-banking service quality when grouped according to sex, usage of mobile money and e-wallet services, and length and frequency.

Keywords: Dimensions, ease of use, e-banking, e-banking users, electronic transactions, e-money, mobile banking, problems, service quality



SAB-SR-026

**Saint Mary's University Management Accounting
Students' Learning Satisfaction of Professional
Courses in the New Normal: Basis for
Continuous Improvement**

Agoot, April Joy G., Bugne, Diane D., Macayan, Koreen Claire O., Morales, Nimpha Joy R., Vibieda, Norielyn S., & Villanueva, Harrison T., PhD

Students' feelings about and perceptions of the educational process and the degree of fulfillment they derive from learning experiences regarding their motivation to study are called "learning satisfaction." This study aimed to determine the management accounting students' learning satisfaction with professional courses at Saint Mary's University, Bayombong, Nueva Vizcaya. The researchers employed the descriptive-comparative method using a quantitative approach to describe the level of satisfaction and the problems encountered relative to accounting students' learning styles, professors' teaching styles, and facilities. Levene's and T-tests were used to test the significant difference between the management accounting students' learning satisfaction level and their profile variables. ANOVA was also used to test the significant difference in management accounting student's learning satisfaction when grouped according to year level. Bonferroni compared significant differences in management accounting students' learning satisfaction when grouped according to dependable variables. The results revealed that management accounting students are moderately satisfied regarding their learning styles, professors' teaching styles, and facilities. Most students and professors prefer note-taking, outlining, and problem-solving as learning styles. They use various teaching aids like whiteboards, visual aids, accounting manuals, practice sets, syllabi in teaching, books, journals, newspapers, etc., and library equipment and furniture. The problems management accounting students encounter in their learning satisfaction are not using free time wisely, professors expecting too much from the students, and the institution's computers and networks not functioning well. Findings also indicate no significant difference in dependent variables regarding accounting students' learning styles and professors' teaching styles. However, there is a significant difference in facilities in terms of year level. It is recommended that management accounting students manage their time wisely, join study group programs, and engage in self-studying. The professors may provide additional learning

materials, increase lively ways of teaching, and have fewer expectations towards students. Moreover, the institution may provide more advanced facilities and maintain a clean, healthy, safe, and friendly (CHSF) environment conducive to learning.

Keywords: Management accounting, learning satisfaction, learning style, teaching style



SAB-SR-027

Farm Records and Bookkeeping: Perceived Importance, Implementation, and Constraints of Small-Scale Farmers in Bambang, Nueva Vizcaya

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Bookkeeping is the practice of recording daily financial transactions into an organized account. It plays a critical role in monitoring the financial well-being of any business; thus, agribusiness is not exempted. This study determined the socio-economic profile, the perception of the importance of farm records and bookkeeping, the level of implementation of bookkeeping practices, and the constraints encountered by the small-scale farmers in Bambang, Nueva Vizcaya. A descriptive-quantitative approach using frequency, percentage, mean, and standard deviation was utilized to analyze the data using a survey questionnaire to obtain information from 120 selected respondents through quota random sampling. The demographic profile revealed that most respondents are old and aging, have adequate formal education, are well experienced, and operate 1 to 1.49ha of land, mostly family-owned. Most hire farm helpers in the operation process, such as fertilizing, tilling, and reaping. Rice and vegetables are the primary and secondary crops yielded, with tomatoes being the major vegetable produced. Moreover, the majority's source of capital is their fund.

In contrast, the average capital is tied with their average profit of

31,000 and over. 65% of the small-scale farmers never attended any seminar related to farm bookkeeping. Farm records and bookkeeping were perceived as more useful in planning and budgeting or mainly for internal management. Findings revealed that small-scale farmers have a good level of implementation of bookkeeping practices. However, they are challenged by the habit of keeping a record of their memories and traditional farming methods as their primary and secondary constraints. These suggest that farmers should be encouraged to enhance the implementation of physical records and that the government should provide educational training on proper farm bookkeeping.

Keywords: Bookkeeping, farm management, farm records, farm recordkeeping, subsistence farming, agri-enterprise, agribusiness, accounting information system, AIS 41, PAS 41



SAB-SR-028

The Extent of Implementation of Sales Promotion Strategies of Cooperatives in Nueva Vizcaya and Its Relation to Profitability

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Princess May S., Vilorio, Princess Diana A., Visconde, Katrina
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Cooperatives are businesses owned and managed by their members who benefit from their profits. At the same time, sales promotion strategies are essential to build and maintain a relationship with customers and to make the business appealing, which can lead to an increase in sales. This study determined the extent of implementing cooperative sales promotion strategies and their relation to profitability. A quantitative approach was utilized, using a survey questionnaire and documentary analysis to gather data. The respondents were the general managers/ chairpersons of the cooperatives in the selected municipalities of

Nueva Vizcaya, specifically, those multi-purpose local cooperatives operating for (5) five years and above who are willing to provide their financial statements for the past three years. Findings show that the multi-purpose cooperatives generally responded moderately in performing the sales promotion strategies. Furthermore, it was found that in terms of profitability, the multi-purpose cooperatives have the average profit margin. However, the data revealed that most need improvement regarding Return on Assets and Asset Turnover. The data gathered indicates a significant relationship in profit margin, implying that the sales promotion strategies had an impact for those years. Additionally, it was apparent from the result that no significant relationship exists between the Extent of implementation of the sales promotion strategies and the Return on Assets and Asset Turnover. Thus, sales promotion strategies do not influence those years. Recommendations are drawn to help the participants understand how consumers respond to different sales promotion strategies.

Keywords: Asset turnover ratio, freebies, patronage refunds, profit margin, return on assets



SAB-SR-029

Risk Management Practices of Online Live Sellers of Used Clothings

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The COVID-19 epidemic has affected consumer buying and shopping behaviors, which consumers are learning to adapt to and form new habits. This study aims to determine the risk management practices of online live sellers of used clothing. It will provide a better understanding of online live sellers regarding risk management practices. This study used the qualitative descriptive method to describe and examine the risk management practices of online live sellers through the

information provided. The research participants have been chosen through an online survey on social media platforms such as Facebook among the online live sellers of used clothing in Bayombong, Nueva Vizcaya. The researchers constructed guide questions in the interview upon gathering the necessary information. The result shows that the risks of the online live sellers of used clothing in terms of sales, delivery, and collection include loss of investment, difficulty in ensuring sellers' safety, and difficulty collecting payments. Furthermore, the common risk management practices of online live sellers of used clothing are purchasing bale at a lower price to deal with the loss on selling, making a good rapport to handle delivery issues, and payment first through E-payments, which was identified as the commonly used payment method.

Keywords: Risk management, mode of payment (mop), online live selling, bales



SAB-SR-030

Innovation Adoption of Cashless Transaction in a Rural Setting

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This study aims to determine the adaptability of the informants to cashless transactions through the diffusion of innovation theory in the selected municipalities of Nueva Vizcaya: Aritao, Bagabag, Bambang, Bayombong, Dupax del Norte and Villaverde according to their class municipality, population, number of barangays, constancy of internet connection and the number of banks in the locality. This study used face-to-face and virtual interviews to gather data from the 60 respondents. The samples were taken through purposeful sampling, in which informants using cashless transactions were selected to produce valid results. The research design used in this study was

Qualitative-Descriptive Research Design. Findings revealed that females are more adaptive to using cashless transactions than males, ranging from 20 to 29 years of age. It was also concluded that GCash is the most utilized cashless transaction, and most users are currently employed as it is needed for their work. Also, GCash was mostly utilized because it makes cashless transactions easier and more convenient, and it was also mainly used for online purchases. In addition, it was also found that users of cashless transactions are mostly categorized as belonging to the Early Majority because when innovations are introduced in the community, people from rural areas do not eagerly adopt them. This study indicates that the informants regularly engage in cashless transactions despite skepticism about adopting new technologies, mainly because of their convenience.

Keywords: Diffusion of innovation theory, utilization, online purchases, convenience



SAB-SR-031

The Road to the Crown: Financial Gains and Losses

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In the Philippines, beauty pageants have become a national obsession. There are beauty pageants everywhere, and there is one for everyone: children, grandmothers, saleswomen, and even pets. Following the stellar performances of Filipino candidates in international competitions, the country quickly became a pageantry powerhouse. However, the pageant industry has also become a door to earning opportunities like media exposure, spreading advocacies, and earning financial earnings. This study aims to determine the financial implications of a candidate stepping into the pageant industry. The study used qualitative descriptive data to understand further the

perspective of beauty pageant participants regarding the financial impact of joining the competition. The study selected known pageant participants who reside in Nueva Vizcaya and neighboring provinces as informants. Further, this study used an in-depth virtual and in-person interview. It is concluded that most of the financial benefits the pageant winner received were utilized to cover expenses the informants have incurred from the contests they have joined.

Keywords: Beauty pageants, benefits, expenses, financial implication, prizes



SAB-SR-032

**Application of Life Cycle Cost Analysis of
Computer Shops**

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Computer shops are products of the advancement of technology that provides internet access for a fee. Along with applying the theory of life cycle cost analysis, this qualitative-descriptive study aimed to identify the factors that computer shop owners in Bambang, Bayombong, and Solano consider using life cycle cost analysis. Data were gathered through observation and interviews regarding the integration of the life cycle cost analysis theory. Results show that in acquisition costs, owners consider the price, specification, brand, and supplier of equipment. Moreover, most computer shop owners personally perform the maintenance and repairs, thus incurring minimal costs for operation and maintenance. Additionally, when disposing of a computer or its components, computer shop owners incur minimal costs and derive additional revenue by either recycling, selling, or disposing of defective computer units or parts. The factors that the informants consider when disposing of a computer unit are total defectiveness and partial defectiveness.

Based on the findings, the researchers recommend that the computer shop owners keep records to determine the actual costs incurred in acquiring, operating, maintaining, and disposing of equipment and use the data for economic decisions.

Keywords: Life cycle cost analysis, computer shops



SAB-SR-033

**Determinants of Pricing Strategies
Affecting Profitability of Start-Ups in
the Baking Industry in Nueva Vicaya**

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Bread is a common staple on every Filipino dinner table. The massive demand for baked goods created numerous profitable opportunities. Baking activities played a significant role as a stress reliever for many households during the COVID-19 (Coronavirus) pandemic, resulting in the proliferation of numerous start-up baking businesses competing with established baking businesses in three renowned towns of Nueva Vizcaya. With this, this study aims to determine the pricing strategy of start-ups in the baking industry by identifying internal and external factors that affect their profitability. Results were obtained using the descriptive-qualitative research method, assisted by a structured interview, and treated using content and inductive analysis techniques. The study's findings indicate that internal and external factors, such as marketing strategies, cost structure, cost decision mechanism, market structure, demand structure, product price and competitors, and supply chain influence start-up pricing strategies. It was then determined that start-ups employ various pricing strategies that they believe to be acceptable and beneficial for their businesses since it also impacts their profitability. In general, the study concluded that the

profitability of start-ups varies concerning the pricing strategies utilized, all of which are also indirectly affected by factors within and outside their businesses.

Keywords: Baked goods, COVID-19 pandemic, external factors, internal factors, indirect effect



SAB-SR-034

Implementation and Effectiveness of Credit and Collection Practices of Multi-Purpose Cooperatives in a Rural Setting

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This study used the descriptive-quantitative research approach to investigate the implementation and effectiveness of selected multi-purpose cooperatives' credit and collection practices in a rural setting. Purposive sampling was utilized to select the respondents who represented their respective cooperatives, the general managers, employees in charge of the credit and collection transactions, and employees availing of credit services. A questionnaire and measurement ratios were used to gather and analyze the data. The overall result revealed that the multi-purpose cooperatives always and often implement credit and collection practices, respectively. On average, there is little deviation in the extent of the implementation of the practices. Further analysis, however, when these are measured for effectiveness using different ratios, the results per cooperative are highly varied. Overall, the practices were proven effective regarding loan portfolio growth and not in terms of collection rate, past due, and loan loss reservation ratio.

Keywords: Collection rate, past due, loan loss reservation ratio, growth in loan portfolio

SAB-SR-035**Credit Management Practices and Problems and Financial Performance of Lending Establishments in Nueva Vizcaya**

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The economic changes due to the trends and economic crises, such as recovering from the pandemic and inflation, led people to borrow money. Thus, the study provided recommendations to lending establishments by determining credit management practices, financial performance, and problems in their practices. The study used qualitative-descriptive methods with managers and accountants as informants of 6 lending establishments, specifically microfinance listed in SEC from Bambang, Bayombong, and Solano, which have accessible financial statements. Findings revealed that they commonly conduct credit investigations for their client appraisal, and the majority imposed different interest rates based on the loan amount or programs availed for credit terms. Moreover, they set up credit limits, frequent visitation, and send default and demand letters to control credit risks. In contrast, collection policies include payment reminders through personal visitation or collecting payments through group meetings. Lending Establishments are highly leveraged, indicating a high use of debt financing. At the same time, most of their profitability ratios significantly improved their generation of profits for the year 2020-2021. Meanwhile, despite these practices, difficulties are still encountered, caused by either deficiency in credit management or uncontrollable occurrences. Problems like poor credit investigation for client appraisal, calamities, sickness, and other external factors like abrupt changes to the client's financial well-being or bankruptcy for credit terms. Credit risk control is affected by the lack of sufficient client monitoring. Lastly, the client refuses to pay their outstanding balances for the collection policy.

Keywords: Client appraisal, credit risk control, credit terms, collection policy, microfinance

SAB-SR-036

**Extent of Management Practices and Challenges
Encountered of the Top Three Performing
Cooperatives in the Province Of Nueva Vizcaya**

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Joy May R., & Ramos, Emerson G., CPA*

This study aimed to determine the management practices and challenges encountered by the top three performing cooperatives in the province of Nueva Vizcaya regarding their planning, organizing, directing, and controlling functions. The researchers used a mixed-method design. Quantitative analysis of the information required from a closed-ended questionnaire and qualitative analysis of information from open-ended interview questions. The study participants were 10 respondents per cooperative, specifically General Managers, Department Heads or Committee chairs, Bookkeepers, Administrative Assistants, Secretaries, and other employees related to the management of the cooperatives. All of the cooperatives surveyed had good planning procedures in place. Regarding organizing functions, cooperative management always organizes pre-membership seminars for cooperative officials and members. It assists in planning and supporting cooperative activities. Regarding directing, the board of directors holds regular meetings for board members at least once a month and an annual general assembly for all members, during which they always evaluate reports and deliberate on long-term strategies. Finally, when it comes to control, cooperatives always ensure that members provide annual audited financial reports. The study recommended that cooperatives should keep their merit and fitness-based hiring process because it demonstrates the proper evaluation of their applicants. The study guarantees the security of its human subjects by following strict ethical guidelines.

Keywords: Controlling, directing, planning, organizing



SAB-SR-037**Inventory Management Practices and Challenges of
Agricultural Farm Supply Businesses in Selected
Municipalities of Nueva Vizcaya**

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Constantino, Rainalene Joy S., Sison, Aubrey R., Tumatag,
Camille G., & Villanueva, Harrison T., PhD*

Inventory Management is vital among agricultural farm supply businesses in ensuring optimal levels of operational efficiency and maintenance of farm inputs. Consequently, the study focused on determining the practices, challenges, and coping strategies of the businesses in certain municipalities in Nueva Vizcaya. A qualitative-descriptive approach was utilized through the inductive method to facilitate data analysis. Findings revealed that owner-managers conduct demand forecasts considering the seasonal timing of crops and purchase behavior. Most purchase bulk-buying, Just-In-Time, and reorder point methods, considering their sales, demand, and inventory turnover. Moreover, handling hazards and product defects through regular inspection, separate storage, and warehouse layout adjustment is maintained. Control procedures, such as stock-out adjustments, manual monitoring, and reconciliations, ensure business efficiency. As to valuation, the majority utilize actual costs or retail prices necessary in periodic reports. Challenges were highlighted based on informants' accounts. Demand volatility and forecasting inaccuracy affect their adjustments, including transport issues and stock-outs. Overpiling, unwanted chemical reactions, and lack of storage space are problems regarding handling and storage. Interestingly, theft, negligence, errors in recording, and price changes were also experienced. Despite these, the informants attempt to address or mitigate issues like preventive measures against hazards, backup plans as to demand, control adjustments, and promotional strategies. Significant results imply that agricultural farm supply business owners or managers value their inventory by utilizing attainable and cost-friendly methods. Hence, improvements such as considering Point of Sale Software and support from government agencies

may elevate the country's agricultural sector towards effective operations.

Keywords: Coping mechanisms, handling, and storage, inventory control, inventory management challenges, just-in-time method



SAB-SR-038

Turnover among Online Food Delivery Service Riders: Convergent and Divergent Views

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Employee turnover is an inevitable part of a business operation, and as some might be more detrimental than others, employee turnover can cause real damage to the entity if not mitigated to a certain extent. This study focuses on the reasons for the turnover of food delivery service riders in Bayombong and Solano, Nueva Vizcaya. Furthermore, the study highlights current and former riders' convergent and divergent views regarding their perception of the retention and turnover of food delivery service providers. Qualitative comparative analysis was used to compare perceptions between current and former riders. Results showed that riders stay in their current work due to good income, healthy workplace environment, low remittance, good management, and enjoyment. Former riders left the industry due to the resumption of face-to-face classes, bad management, and lack of insurance.

Keywords: Business operation, employee retention, pandemic, food delivery service providers



SAB-SR-039

Corporate Social Responsibility of Retail

Pharmacies in Nueva Vizcaya

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Corporate Social Responsibility (CSR) is the commitment of businesses to consider how their actions and decisions will affect the environment and society, as well as to act ethically and transparently. This paper aims to identify and describe the different CSR activities of retail pharmacies in Nueva Vizcaya. This research utilized qualitative-descriptive research for in-depth understanding. The researchers identified three informant pharmacies wherein the pharmacists involved in the CSR implementation were interviewed online and face-to-face. In the findings, the CSR activities of each retail Pharmacy vary because they consider the needs of the community where they are established. In effect, CSR helps improve the quality of service and generate larger income, which benefits the company and community, thus creating a win-win situation. While having the CSR practices for the past three years as a basis, given that there are positive impacts, all informants guaranteed that they would continue to conduct CSR programs in the future despite the issues they have encountered in their implementation. Overall, each Pharmacy's CSR practices reflect its vision and mission statements.

Keywords: Economic responsibilities, legal responsibilities, ethical responsibilities, ethical responsibilities, philanthropic responsibilities



SAB-SR-040

The Extent of Operational Management Practices and Problems Encountered by the Food Processors of Buko Pie in Bagabag, Nueva Vizcaya

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The study determined the profile, extent of operational management practices, and operational management problems encountered by buko pie processors in Bagabag, Nueva Vizcaya. A descriptive-quantitative approach using frequency, percentage, mean, and standard deviation was used to analyze the data obtained from 35 randomly selected respondents and collected through a questionnaire. The business profile revealed that most of the buko pie businesses have been operating for more than 10 years and operated as sole proprietorships, with a significant portion employing 10 to 49 and over 50 workers. The most common operational management practices are providing low-cost products and maintaining production's cleanliness and sanitation. Fierce competition is the most common problem encountered by the buko pie businesses in Bagabag, Nueva Vizcaya. Recommendations were given to assist the buko pie producers in dealing with operational management problems.

Keywords: Market competition, food sustainability, business strategy



SAB-SR-41

Human Labor vs. Rented Machinery: Cost-Benefit Analysis of Smallholder Rice Farming in Nueva Vizcaya

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Influenced by the continuous increase in the costs of rice farming, this study focused on the analysis of the costs and benefits of human labor and rented machinery during harvesting among smallholder rice farmers of Bagabag and Villaverde, Nueva Vizcaya. The researchers applied purposive sampling to collect data from ten key informants. Results revealed that smallholder rice farmers have an average sale of Php 75,920 per hectare with an estimated average cost of Php

9,140 for renting machinery and Php 16,120 for employing human laborers, resulting in an estimated average income of Php 66,780 and Php 59,500, respectively. This, however, varies depending on the weather, price movements of *palay* in the market, variety of rice seeds, and quality of fertilizers. Major findings revealed that the advantages of employing laborers include less spoilage, employment opportunities, and availability in terms of calamities. At the same time, related downsides were process inefficiency, cost inefficiency, and the displeasing behavior of the workers.

On the other hand, renting machinery is determined to reduce costs and provide a fast-paced process, which avoids delays and additional expenses but is subject to limitations regarding loamy areas. Overall, the analysis revealed that renting machinery gives a better return on investment than employing human laborers. The researchers then suggested that smallholder rice farmers must consider factors like geographic location, rice field size, and rates of compensation of both renting and human laborers before choosing the most appropriate method of harvesting to minimize related costs and improve profitability.

Keywords: Cost Efficiency, Employment Opportunities, Harvesting Phase, Price Movements, Profitability



SAB-SR-042

**Stories of Part-Time Working Students in a Pandemic:
Lights and Shadows**

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The global COVID-19 outbreak has had a significant impact on several businesses. Filipinos faced an unusual challenge because of the pandemic, particularly among students. Many government entities have implemented crisis response methods

to lessen the detrimental effects on education. Working as a student is immensely challenging and involves much responsibility. Students learn a great deal while working, and these insights can help them personally and professionally. Working while in school also helps students comprehend the advantages and disadvantages of obtaining a higher education, how to deal with challenges, and appreciate how challenging it is to produce money. The researchers utilized the qualitative-descriptive method to obtain information from observation and in-person interviews. Phenomenology was applied in this study. In this methodology, participants discussed their experiences to discover the participants' perspectives, which the researchers sought to identify and correlate. The study exposed that the students value money earned through hard work and giving importance to experience that will help them in their future careers. It was also revealed that students were to do part-time work during the pandemic due to their respective universities' flexible online set-up. Despite the great set-up in academic areas, part-time students still struggled to balance their jobs and academic requirements. Still, they were able to earn enough to cover their expenses.

Keywords: Part-time working, pandemic, student



SAB-SR-043

Readiness on the Compliance of Sangguniang Kabataan in Fund Utilization vis-a-vis New COA Guidelines

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The Sangguniang Kabataan is the governing body of youth in the Philippines. They provide programs and projects that enable development for the youth to contribute to studies in financial management and public governance, especially in Sangguniang Kabataan's compliance with the new COA guidelines. This study

intends to determine their compliance with the qualifications, awareness of the handbook on SK financial transactions, attendance to training/seminars and requisition of honorarium, and readiness to comply with the said guidelines. The study used a qualitative descriptive approach. The informants were chosen based on the top five (5) barangays with the highest National Tax Allotment at Bayombong, Nueva Vizcaya. One of the methods used was a closed-ended question, such as "yes/no," supported by interviews and document scanning. A thematic analysis was used to analyze the data. Major findings show that most SK treasurers complied with the newly signed qualifications except for having a bookkeeping foundation. Furthermore, most SK chairpersons and SK Treasurers were aware of the handbook on SK financial transactions; however, they lacked training/ seminars, and only the SK chairpersons received an honorarium. In determining their readiness, the SK handled 10% of the funds. However, due to a lack of training/ seminars, they still seek guidance in preparing financial reports from the Barangay Treasurer. Hence, the Sangguniang Kabataan is not yet fully ready to comply with the new COA guidelines.

Keywords: SK chairperson, SK treasurer, financial transaction, handbook



SAB-SR-044

Work from Home Modality for Certified Public Accountants: Arrangements and Preferences

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The emergence of COVID-19 has forced companies worldwide to shift to remote work, wherein employees replaced physical conversations with virtual calls and messages through various online platforms (Siripurapu, 2020). This study focused on the experiences of Certified Public Accountants in Northern Luzon

while working from home. It aimed to analyze the modality as a work set-up for CPAs, its impact on the six key determinants, the preferred work arrangement, and coping mechanisms implemented by the informants. The qualitative-descriptive method was used to gather data from 30 informants, which were selected through purposive sampling. Content Analysis was utilized to interpret the responses and propose common concepts for discussion. According to CPAs, WFH was defined as an arrangement inside the house with a conducive workspace, and work equipment like laptops and a stable internet connection are needed. Regarding the six key determinants of the advantages and disadvantages of WFH, the study revealed that most CPAs could maintain work-life balance by managing time efficiently. Work efficiency was also not affected; CPAs still have control over their work and manage to handle home office constraints and work uncertainties. However, inadequate tools remain a challenge for most. In addition, most CPAs were more productive working from home. Thus, they prefer WFH over the traditional one. The coping mechanisms of CPAs include employing technical knowledge, strategic decision-making, and goal-setting. Good communication, adequate tools, and IT skills are also essential. Recommendations in response to the findings were also provided.

Keywords: Coping mechanism, home office constraints, inadequate tools, work control, work efficiency, work-life balance, work uncertainties



SAB-SR-045

Pairikan System in Financing of Rice Farms in Nueva Vizcaya: Who Gains More?

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Pairikan System is a special agreement between a lender and the borrower wherein borrowers pay interest with *irik* until they can

pay the principal in cash, with a percentage agreed upon each harvest season. This research paper explored and determined who gains more from the Pairikan System financing rice farms in Nueva Vizcaya. The study's sample consisted of five private lenders and five borrowers who were formerly and currently involved in the Pairikan System. Researchers used semi-structured interviews to identify the advantages and disadvantages, preferences of lenders and borrowers, and who gains more. According to the study's findings, the advantages of this system for both lenders and borrowers include the convenience of not having to buy food, no business permit needed, the satisfaction of lending (help), and payment for medical treatment. Despite advantages, the study found disadvantages for both sides, especially for farmers who struggle to pay on time and face difficulty paying lenders due to poor harvests, high interest rates, and accumulated debt. Additionally, 2/5 lenders preferred formal contracts, while 3/5 relied on verbal agreements. Three lenders accept loans between five to ten thousand pesos, one lender provides up to fifty thousand pesos, and another only offers three to four thousand pesos. The farmers all operate under the same payment terms, stipulating that payments are due at the end of each harvest season. Furthermore, the result shows that lenders gain more from this system, while borrowers almost always get the shorter end of the stick.

Keywords: Agricultural lending mechanism, borrowers, budgeting, lender, profitability



SAB-SR-046

**Profitability Ratio as an Income-Generating
Determinant in the Events
Management Industry in Nueva Vizcaya**

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The event management industry plays a significant role in our society. Events permit people to meet and reconnect in different arrays of cultures and places, making them significant in people's social lives. (S. Arora, 2017). However, the event industry was significantly impacted by the pandemic. Therefore, it is important to look into their capacity to earn income through a study that intends to employ financial metrics. The study is designed to determine the frequency of events organized from the post-pandemic period to the present and the ability of events management businesses to generate income as measured by gross profit margin ratio, operating profit ratio, and net profit ratio. The Snowball sampling method was used to choose the informants, which included eight event organizers from Bayombong and Solano, Nueva Vizcaya. Inductive analysis was used to analyze the data. The findings showed that the informant's frequency of engagement varied. The number of events requiring coordinators, caterers, photographers, and light and sound suppliers increased as health protocols were reduced. Photographers and event coordinators have the highest number of engagements compared to caterers and light and sound suppliers because they don't need a crew or substantial planning before providing their services. Despite the prolonged pause in the business, these event planners, caterers, photographers, and light and sound suppliers are still profitable and able to cover their expenses for each engagement. Though there are minimal variances between the ratios of each informant, the underlying analysis of their profitability ratios is almost the same.

Keywords: Expenses, gross profit margin, net profit margin, operating profit margin, organizer



SAB-SR-047

Venturing in the Investment Industry through Play-To Earn Games: Students' Experiences

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This study looked into student-scholars' experiences venturing into play-to-earn games, focusing on Axie Infinity. It sought to identify student-scholars' backgrounds before entering the game and describe their experiences regarding the benefits and drawbacks of being a student-scholar in their studies and finances. The study employed virtual interviews with five informants, selected through snowball sampling. It utilized thematic analysis to synthesize the data gathered from the interviews. This study highlights the considerable impact of peers and social media on decision-making regarding new games, specifically play-to-earn games like Axie Infinity, where financial gain is a primary motivation. While playing such games can enhance skills like time management, strategy, and critical thinking, it can also distract students. Moreover, being a student-scholar provides financial security and independence. Still, the ease of income can cause overspending in individuals with poor financial management skills.

Keywords: Axie infinity, experiences of student-scholars, benefits and drawbacks



SAB-SR-048

Preferences in Fund Mobilization among Farmers in a Rural Economy

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Agricultural credit is important to the development of the agricultural sector. Expanding credit programs is vital in producing agricultural goods that increase farmers' income. In the Philippines, small-scale farmers fund farming through informal and formal lenders. With the primary objective of exploring the use and access to credit, the researchers examined the accessibility and sources of agricultural credit in Bambang and Kasibu, Nueva Vizcaya. The research also examines the reasons for choosing their preferred credit institution. Lastly, the

problems encountered in obtaining a loan were also determined. In Bambang and Kasibu, vegetable farmers accessed both the formal and informal types of credit. Moreover, formal credit sources are also vegetable farmers' most preferred type of credit. It was also revealed that *Porsyento ti Interest* (Interest Rates), *Naproseso/Nagado nga papeles nga masapul* (Lengthy Documents), *Kadayu ti agpapautang/pag-utangan* (Distance of Creditor), and Terms in the Contract (Other than the interest rate) are considered by the vegetable farmers in obtaining a loan. Still, the interest rate played the most important role in considering credit type. Regarding these, there is a need to examine further the vegetable farmers' access and source of credit and investigate their preferences and perceptions regarding the available source of borrowing in their area so that their access can be improved. Their credit needs can be effectively met.

Keywords: Access to credit, borrowing, sources of credit



SAB-SR-049

Implementation of Internal Control Systems and Its Relationship on the Financial Performance of Life Insurance Companies

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As part of the financial market, life insurance companies must maintain a robust internal control system to ensure their services benefit their customers and the overall financial market. The study aimed to measure the level of implementation of internal control systems and the financial performance of four life insurance companies. The relationship between the two variables was also investigated. The study consisted of seven (7) respondents from four (4) life insurance companies in Nueva Vizcaya's first-class municipalities. The researchers used a

structured questionnaire to gather data using descriptive and correlational designs. The audited financial statements were also used to compute the financial ratios, which were used to determine the financial performance of the companies. The data was analyzed using the following statistical tools: frequency counts, median, mean, standard deviation, percentage, and Spearman-rho using the IBM SPSS. The researchers found that the companies implement all the internal control components at a high level. The results of the financial ratios also reflect that life insurance companies' financial performance is varied. The companies have good profitability and earnings ratios. Still, the financial strength ratios show weakness in the financial performance of the companies. It was also found that the level of implementation of most of the internal control components is not significantly related to the financial performance of the life insurance companies. Only the control activities significantly correlate with the return on equity and capital adequacy ratios.

Keywords: Control activities, control environment, information and communication, monitoring activities, risk assessment



SAB-SR-050

**Sustainability Practices and Financial Performance Of
Coffee Producers in Nueva Vizcaya**

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Coffee is one of the largest traded agricultural commodities in the world. Its production is an important component of the overall economy. It is essential to the livelihoods of rural households in the developing countries. This study aimed to determine the extent of sustainability practices and financial performance of seven coffee producers in three municipalities of Nueva Vizcaya. The proponents used a structured questionnaire

to gather the data using descriptive correlational and financial performance analysis. The data was analyzed using the following statistical tools: mean, standard deviation, financial profitability ratio, Spearman rho, and thematic analysis using IBM SPSS version 25. Findings reveal that coffee producers generally implement sustainable practices in their operations and achieve good financial performance, as evidenced by their average return on assets, equity, and sales ratios. This shows a commendable balance between profitability and sustainability efforts. However, it is also revealed that there is no significant relationship between the variables, and a weak negative correlation between them is discovered. Moreover, most respondents are confident in their ability to ensure long-term sustainability as they continuously seek growth and improvement in efficiency and profitability. For further findings, the researchers recommend that coffee producers continue implementing sustainability practices and that future researchers include liquidity and solvency ratios to provide a more comprehensive financial health assessment.

Keywords: Coffee growers, efficiency, financial ratios, livelihood, profitability, sustainability



SAB-SR-051

Organizational Structure and Employees' Performance: The Case of a Multipurpose Cooperative in Nueva Vizcaya

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In the Philippines' social and economic structure, cooperatives play a significant role, particularly in rural areas, by facilitating market access and resource distribution and fostering communal growth. Despite being recognized by government policies as key contributors to financial inclusion, economic growth, and poverty eradication, the effectiveness of

cooperatives concerning their organizational structures is often overlooked. This study aims to determine the correlation between Organizational Structure and Employees' Performance: The Case of a Multipurpose Cooperative in Nueva Vizcaya. It employs a quantitative approach, combining descriptive and correlational designs. The survey questionnaire used in this study is adopted from three research sources. The results revealed that most of the cooperative's workforce comprised young professional women, with an average age of 29.97. The respondents were predominantly from the Accounting Department, with a notable representation from lower/operational management. Moreover, a substantial portion of the respondents had tenure exceeding six months. The results indicated a positive perception of the subcategories within the organizational structure, significantly influencing employee performance. However, certain aspects of the organizational structure, such as hierarchical structure, formalization, and internal and external boundaries, showed no significant relationship with employee performance. These findings highlight the complex interplay between organizational structure and employee performance in a cooperative setting.

Keywords: Decentralized, internal and external boundary, formalization, hierarchical structure, technology



SAB-SR-052

Assessing the Perceived Benefits of Training and Development on Employee Performance in Municipal Financial Management Offices: A Case Study of Solano's Local Government Unit

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This research study determines the perceived benefits of training and development for employees within the financial

management offices of the Local Government Unit of Solano. Employing both descriptive and comparative methodologies, the study ensures a thorough examination of the research inquiry. This study utilizes a quantitative research approach, and a survey questionnaire focused on goal achievement, collaboration and communication, quality and efficiency, personal and professional attributes, and descriptive statistics were applied to analyze the data. Analysis of Variance (ANOVA) was employed to investigate potential significant differences in perceived benefits based on various profile variables like age, sex, current work position, and years in service. The Kruskal-Wallis test was also employed to assess the variation among the means of three or more groups, determining if there were any statistically significant differences in the group means. Moreover, the researchers employed the Mann-Whitney U test to assess if the participants' views on the benefits of training and development were influenced by their sex. Furthermore, an interview guide or an essay part was created to gather participants' insights on training and development to enrich the recommendations section of the paper. The findings indicate that there is a positive perception of the training initiatives. However, while the outcome yielded positive perceived benefits of training and development among respondents, there is a need for a comprehensive training strategy emphasizing the organization's commitment to the personal development of all employees. This emphasizes a proactive approach to training coordination, involving identifying key development areas and seeking approval and budget allocation for alignment with organizational goals.

Keywords: Collaboration and communication, efficiency, goal achievement, personal and professional, quality



SAB-SR-053

**Readiness of Micro-Enterprises from 4th And 5th Class
Municipalities of Nueva Vizcaya in Adapting
Balanced Scorecard**

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A performance measure is important in a company's strategic planning and business operation, and one usually used performance assessor is the balanced scorecard (BSC) by Kaplan and Norton. Adaption of BSC is common among large and medium enterprises but rare in micro-enterprises. This study quantitatively assessed the readiness of micro-enterprises in 4th and 5th class municipalities in Nueva Vizcaya in adapting BSC using the four perspectives: financial, customer, internal business process, and learning and growth, and their relationship among profile categories: initial capitalization, number of employees, years of business operation, and average annual sales. Snowball sampling was used to select 100-Department of Trade in Industry (DTI) accredited businesses in Ambaguio, Diadi, Quezon, and Villaverde who were given survey questionnaires to accomplish. The study finds out the profile of respondents in terms of initial capitalization, number of employees, years of business operation, and average annual sales. The study revealed that micro-enterprises are most ready to adopt BSC based on a financial perspective. Moreover, a moderately significant relationship exists between initial capitalization and average annual sales and their readiness to adapt to BSC. Nonetheless, there is no connection indicator between the number of employees and longevity. Recommendations were crafted for business owners, future researchers, and faculty to use in the results and revisions of this study.

Keywords: Assessment, evaluation, industries, performance measure, perspective



SAB-SR-054

Perceived Impact of Corporate Recovery and Tax Incentives for Enterprises Act (CREATE LAW) on Microenterprise Pharmacies in Nueva Vizcaya

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When the pandemic struck the country, a new tax law called the Corporate Recovery and Tax Incentives for Enterprises (CREATE) Act was introduced. This study aimed to determine the perceived impact of the CREATE Law on microenterprise pharmacies in Nueva Vizcaya in the first semester of AY 2023-2024. Specifically, this research sought to determine the profile of the respondents, the perceived impact of the CREATE Law on microenterprise pharmacies in terms of business growth, factors affecting their operation, and taxes that most affected them; if there was a significant difference between the perceived impact on the pharmacies when grouped according to their profile; and the challenges the pharmacies experienced during the pandemic wherein the CREATE Law was able to help them resolve those problems and how. This study used the quantitative-qualitative method, and data was gathered through survey questionnaires. The results showed that most respondents have not completed a business-related course, while most have been operating for at least 10 years. The researchers also found that the CREATE Law positively impacted business growth and factors affecting their operation, but not taxes, which affected the pharmacies. Additionally, there was no significant difference in the perceived impact of the CREATE Law on the pharmacies when grouped according to their profile. Lastly, the challenges the pharmacies experienced during the pandemic were operational restrictions, market access, supply chain disruptions, and increased expenses. The pharmacies adhered to pandemic measures for business continuity and experienced financial stability amidst market shifts. However, tax exemptions had only a limited impact. Overall, the CREATE Law had a limited impact on the pharmacies.

Keywords: Business growth, operations, pandemic, taxes,

tax laws

**SAB-SR-055**

The Extent of Implementation of the Barangay Governance Performance Management System: A Baseline for the Adoption of a Balanced Scorecard Towards an Improved Performance Management

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In local government units (LGUs), a balanced scorecard can serve as a management framework to achieve objectives and projects. This study evaluated the implementation of the barangay governance performance management system (BGPMS) in Barangay Luyang, Bayombong, and Nueva Vizcaya as a baseline for adopting a balanced scorecard towards improved performance management. Using a mixed-method approach, the study assessed respondents' profiles and perceptions of BGPMS implementation from barangay officials and residents, focusing on stakeholder perspectives. Data collection involved survey questionnaires and semi-structured interviews, with analysis conducted using statistical tools such as frequency counts, percentages, mean, standard deviation, and Spearman-rho via IBM SPSS. Results indicated that barangay officials and residents, primarily middle-aged adults, perceived varying extents of the BGPMS implementation. Residents collectively perceive a large extent of BGPMS implementation in social services, environmental management, facilities, and stakeholder services but only to a small extent in economic development.

In contrast, barangay officials perceive the overall extent of BGPMS implementation to be very large. However, economic development is rated as only large, indicating the need for improvement. The test of significant difference highlights disparities between officials' and residents' perceptions across all service areas. Therefore, it is suggested that an enhanced performance management system, such as a balanced scorecard,

could guide officials toward a more effective and responsive governance framework.

Keywords: Balanced scorecard, barangay governance performance management system, financial perspective, internal process perspective, learning and growth perspective, stakeholder perspective



SAB-SR-056

Bayombong, Nueva Vizcaya as a Farm Tourism Destination: Basis for Post-Pandemic Tourism Branding

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This study aims to assess Bayombong, Nueva Vizcaya, and the farm tourism sites located in the municipality as farm tourism destinations using the variables from the study of Singh-Knights in 2020. The data were taken through a survey questionnaire using a Likert Scale. The results of its quantitative descriptive analysis were used as a basis for recommendations for the post-pandemic branding of Bayombong. The respondents agreed that Bayombong can be a farm tourism destination in all areas. The area of natural beauty was rated highest (mean=4.22) while Existing Tourism Activity was rated the lowest (mean=3.60). The respondents also agreed that the farm sites in Bayombong possessed the features of a farm tourism destination. Business skills and personal qualities were rated highest (mean= 4.01), while built features and cultural artifacts were rated the lowest (mean=3.50). The farm tourism stakeholders also recommended promotion, road development, and strong partnership of farm owners with the government to achieve the goal of branding Bayombong as a farm tourism destination.

Keywords: Leisure activities, lush greenery, natural beauty, rural development



SAB-SR-057

**Consumer Preferences of Accommodation Facilities’
Promotional Tool in Solano, Nueva Vizcaya**

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At various levels, the Philippine government has considered tourism one of its top development priorities to ensure its economic sustainability. Tourism industries are composed of restaurants, hotels, hospitality, and anything related to travel, tourist destinations, and transportation industries, and much of it revolves around keeping tourists happy and satisfied with their tourism activities. This research emphasizes consumer preferences for accommodation facilities and promotional tools in first-class municipalities. The study determined the effectiveness of the accommodation establishment's promotional material among tourists through a quantitative analysis. The data was gathered and analyzed using survey questionnaires, which included 60 respondents who stayed in the two selected accommodation facilities. The findings revealed that there is an equal number of male and female respondents in the two selected accommodation facilities in Solano, Nueva Vizcaya, most of whom earn a salary of Php.10,000-20,000 a month, single, frequent hotel guests coming from outside the province, and checking in for vacation. The findings also revealed that the respondents prefer price, packages desired, differentiation, and timing of packages offered accessibility and something new. The study recommends that accommodation facilities differentiate their offerings by focusing on complimentary meals & loyalty programs.

Keywords: Establishment, hotel promotion, segmentation, sustainability, tourism marketing

SAB-SR-058**Internal Control Activities of Private Hospitals: A Comparative Study**

Misolas, Johnloyd Edizon D., Acosta, Danica Antonette V., Delim, Blessing Joy M., Mendoza, Micah G., Peralta, Rea Celiz B., & Tugab, Francis Leo C., CPA

The World Health Organization (WHO) defines hospitals as reservoirs of critical resources and knowledge can be classified as general and specialty according to their service. According to Morim et al. (2020), there is a growth in the attention towards internal control. Specifically in public administration, including hospitals. Hence, this study was conducted to determine the internal control activities and compare the similarities and differences between these control activities of the two Level 1 private hospitals chosen for this study. This qualitative descriptive research employed purposive sampling technique to identify the research participants. Results revealed that in terms of authorization, approval, and verification, both hospitals used PhilHealth for deduction for payments and have the same procedure for discharging patients. However, they differed in criteria for referring patients to a higher-level facility, documents needed for admission, and provisions for the kind of treatment the patient should receive. For reconciliation, it was found that both hospitals use the Bizbox Hospital Information system. However, Hospital A reconciles monthly while Hospital B reconciles daily. In terms of physical control, the checking of equipment and instruments were present in both hospitals. Concerning logical control in Hospital A, the chief nurse and her secretary were assigned to record-keeping while in Hospital B, the the Medical Records Department oversees the hospital records. In terms of the segregation of duties, both hospitals considered the skills, competency, and license to perform an individual before delegating. It was also found that the chief nurse of Hospital A can authorize the delegation in all the departments, access custody of the equipment, and access the reconciliation process.

Keywords: Authorization, approval, verification, logical control, physical control, reconciliation, segregation of duties



SAB-SR-059

Tax Awareness and Extent of Tax Compliance Among Micro, Small, and Medium Construction Supplies and Hardware Businesses of Nueva Vizcaya

Corpuz, Jessie T., Dulnuan, Jane T., Onsat, Dane Justine B., Pedro, Alpha Joy E., Santiago, Stephanie May R., & Mania, Jeanette R., CPA

This research is focused on assessing how the owners of construction supplies and hardware businesses in Nueva Vizcaya are aware of and the extent of their compliance with the various taxes paid. Through random sampling, 30 business owners of construction suppliers in Nueva Vizcaya registered with the Business Permit and Licensing Office were selected as respondents. A descriptive-correlational and descriptive-comparative research design was used in this study, utilizing standardized, adapted questionnaires for gathering data that was analyzed and interpreted using frequency and percentage, the Mann-Whitney U-test, Kruskal-Wallis, and Spearman correlation. Results indicate that regardless of their demographic profile, owners of construction supply and hardware businesses in Nueva Vizcaya exhibit a high awareness of value-added tax, documentary stamp tax, percentage tax, and income tax. However, awareness is moderate for excise taxes, withholding tax on compensation, and expanded withholding tax. Findings also show that construction supply and hardware business owners comply with the different types of taxes paid to a large extent. Additionally, no significant difference was found among the respondents when grouped according to their profile. Furthermore, penalties are the highest factor that affects taxpayer compliance. Lastly, a tax campaign was suggested to maintain high awareness and compliance among MSME owners.

Keywords: Documentary stamp tax, income tax, percentage tax, value-added tax, withholding tax on compensation



SAB-SR-060

The Extent of Financial Management Knowledge and Practices of Rice Dealers in the Province of Nueva Vizcaya

Galut, Angel N., Marzan, Robelyn Mhae V., Padilla, Katrina Grace B., Saludarez, Qira Marie Antoinette A., Tayaban, Maricar B., Tugab, Francis Leo C., CPA

This research focused on assessing the extent of financial management knowledge and practices of rice dealers in Nueva Vizcaya. Through purposive sampling, 45 rice dealers in Nueva Vizcaya registered with the Business Permit and Licensing Office were selected as respondents. A descriptive quantitative research design was used in this study, utilizing a standardized, adapted questionnaire for gathering data that was analyzed and interpreted using frequency and percentage, as well as the Spearman correlation. Regardless of their demographic profile, results indicate that the rice dealers of Nueva Vizcaya were knowledgeable to a great extent in the areas of cash management, inventory management, record keeping, and receivable management. Likewise, the level of implementation of financial management practices among the surveyed entities is quite high. The survey results show that the rice dealers prioritize inventory over receivable management. This suggests their proficiency in managing cash flow, handling receivables, maintaining inventory levels, and efficient record keeping. Effective implementation of these practices ensures financial stability and smooth business operations.

Keywords: Cash management, inventory management, receivable management, record keeping



SAB-SR-061**Corporate Social Responsibility of a Family-Owned Business in Nueva Vizcaya**

Cantero, Ashley Romer A., Liang, John Niel L., Medina, Brian Nathaniel J., Prudenciano, Keihl Neri I., Tuazon, Fritz Jairo L., Adducul-Baria, Sheryl A., MBA

Family-owned businesses are prevalent in the business industry. Yet, not all prioritize Corporate Social Responsibility (CSR), which contributes to sustainable development and the well-being of employees and communities. This study focused on assessing the extent of Saddul Corporation's CSR implementation. Researchers utilized a structured questionnaire and purposive sampling to gather data and evaluate the level of CSR practice implementation within the firm. Through the application of descriptive statistics, including mean, standard deviation, and the Mann-Whitney U test, the analysis revealed that the business fully implements CSR practices. In contrast, its efforts towards environmental and community CSR are moderately implemented. The study recommends that the Saddul Corporation continue its CSR initiatives. It suggests that future research explores other family-owned businesses, focusing on specific CSR practices. These findings underscore the significance of integrating CSR into business operations to foster sustainable development and positive impacts on employees, communities, and the environment, emphasizing the need for ongoing commitment to responsible business practices in the family-owned business sector.

Keywords: Business industry, business practices, ongoing commitment, sustainable development, CSR practices



SAB FACULTY RESEARCHES

SAB-FR-01

Reviving Interest in Herbal Medicines: Marketing Issues among Rural Health Care Advocates

*Sherween Jerry Paul V. Saquing, Maria Concepcion T. Jaliwali,
Dorilyn C. Tiongson, John Lindy R. Soriano &
Brent Jericho P. Narciso*

This study intends to examine how rural health care advocates promote the use of herbal medicines (pharmacognosy) recognized by the Philippine Institute of Traditional and Alternative Health Care (PITAHC), an attached agency of the Department of Health (DOH). Using an interview guide, the researchers sought out medical doctors and pharmacists who were interviewed regarding the spatial, temporal, procedural, and financial components of marketing and to surface reassuring and restraining circumstances experienced by the informants in promoting herbal medicines. Results showed that medical doctors and pharmacists conduct counseling and promotion within the confines of their workplaces and only within working hours. Medical doctors promote herbal medicines through prescription, while pharmacists do so by dispensing these medicines. In the financial aspect of promoting herbal medicines, medical doctors and pharmacists receive no compensation, monetary or otherwise.

Keywords: Pharmacognosy, marketing strategies, wellness



SAB-FR-02

Green Business Practices, Challenges, and Prospects of MSMEs of a Province in Cagayan Valley, Philippines: A DTI-SMU Engagement for Sustainability

*Harrison T. Villanueva, Elnora V. Adalem, Sheryl A. Baria,
Loreta V. Garlitos, & Rowena F. Mayangat*

This study aimed to document the green business practices and challenges of Nueva Vizcaya's micro, small, and medium enterprises and identify prospects for engagement in sustainability in collaboration with the Department of Trade and Industry. A qualitative method was used to present the green business practices and challenges that mainstream business owners and managers from the food sector encountered. Results revealed that most MSME respondents are engaged in bread and pastries production and have at least two to fifty employees with an initial capitalization ranging from Php 5,000 to Php 3,000,000 and generated annual revenues/sales ranging from Php 12,000 to Php 13,000,000. MSME-respondents catered to different customers in the province and other cities and provinces and have received support from the Department of Trade and Industry, Department of Science and Technology, Department of Agriculture, and local government units, and have received awards and recognition from various government agencies. Despite their limited awareness and waste sorting practices, the MSME respondents display very good practices in reducing power waste and energy saving. The common challenges encountered were limited knowledge of the MSMEs, weak implementation of environmental policies, and the expensive cost of adopting green business practices. The Department of Trade and Industry and Saint Mary's University can engage in conducting information dissemination campaigns to MSMEs to heighten their green business practices with an emphasis on zero-waste disposal practices and product development, energy-saving practices, use of eco-friendly and affordable packaging and labeling, and use of cashless transactions.

Keywords: Environmental sustainability, green entrepreneurship, sustainable business



Research Unit

SCHOOL OF ENGINEERING, ARCHITECTURE, and INFORMATION TECHNOLOGY (SEAIT)

Research Coordinator: Teofilo M. Sagabaen, Reg. ECE

Panel of Reviewers

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Guest Panel	Jerry R. Gamiao, Reg. ECE (Specialization: Biomedical Engineering) Moises Viernes, MD (Specialization: Medicine)

SEAIT STUDENT RESEARCHES

SEAIT-SR-01

“Casa Orchard”: A Tranquil Hideaway Garden Resort and Hotel Integrating Biophilic Architecture in COFCAVILLE

Patrick John R. Baltazar, Genesis P. Morales, RLA

Maddela is known for its continuous development in both the economy and tourism. Through good leadership, different investments, continuous development, and the boom of tourism, Maddela maintained its rate in economy and tourism. Tourism in Quirino became more popular because of continuous development and marketing; it allows visitors to take a visit or round tour. The problems observed are a lack of accommodation and development, especially in rural areas. Developing a Garden Resort and Hotel would probably help the Municipality cater to more tourists, open job opportunities, and be an additional tourist destination. This study explores tourism and socio-cultural, and a deep analysis is done to understand the different factors that can benefit the proposed project. “Casa Orchard” will be the foundation of this proposed project. “Casa” means home, symbolizing socialization in hotels, function halls, resorts, restaurants, commercial spaces, wellness centers, and spas. “Orchard” means different plants, which are symbols of nature, for it gives enjoyment and relaxation to tourists. This study can address tourism and the ideas of nature by implementing Biophilic Architecture in its architectural design and planning.

Keywords: Garden resort and hotel, economic development, tourism growth, biophilic architecture, accommodation solutions



SEAIT-SR-02

Ragsak Ti Bangkag: Bambang Integrated Agri-tourism

and Learning Site

Jilmar Castro, Tomas B. Binbinon, Jr., RLA

The municipality of Bambang is a renowned 1st class municipality of Nueva Vizcaya. The Local Government Unit (LGU) of Bambang, with the help of the former mayor, Dr. Pepito Balgos, provided an opportunity to develop an agri-tourism that contains a variety of recreational opportunities and the adaptation of the history of Indigenous People (IP). This will be the first-ever agri-tourism and learning site being developed by adapting aspects such as agriculture, eco-recreational, and educational purposes. The project entitled "Ragsak ti Bangkag: Bambang Integrated Agri-tourism and Learning Site" is situated in Barangay San Antonio South, Bambang, Nueva Vizcaya, having an area of approximately land area 12.95 hectares. This project will serve as one of the tourist destinations of Bambang. The study will focus on the site's aesthetic and functional flexibility, integrating all agriculture, culture, recreational and vernacular breakthroughs, and biophilic architecture. Since tourism greatly impacts economic well-being, it contributes to improving employment prospects and incomes, which can significantly impact the community; this should be a priority in improving and creating more plans regarding tourism situations and its capabilities to increase. Still, the big question is, how does the development become authentic in preserving the culture of the Bambang community?

Keywords: Ethnic village, tourism, culture, science and technology



SEAIT-SR-03

Elevating Quality of Life: A Proposed Open Space Development of Fortune Ville Subdivision at La Torre South, Bayombong, Nueva Vizcaya

Marc Jim A. Gamboa, Romeo C. Romero Jr., RLA

This study explores open spaces in residential subdivisions, emphasizing their impact on community well-being. It focuses on

design, maintenance, and management for long-term sustainability. The research contributes to architectural knowledge, promoting ethical and sustainable practices. Applied research methods inform the design process and offer practical solutions for enhancing open spaces. The study considers circulation, zoning, amenities, safety, accessibility, lighting, and inclusive design. It aims to create vibrant, sustainable, and inclusive communities.

Keywords: Sustainability, subdivision planning, infrastructure maintenance, cul-de-sacs, homeowner's association policies, infrastructure plans

SEAIT-SR-04



**SANCTUASIS: A Proposed Provincial
Greenhouse Nursery**

Marzan, Duane V, Argote Bobby U., RLA, MS Arch

This architectural thesis explores the design of a greenhouse nursery that utilizes the site's weakness and turns it into its strength and identity. Present climate change problems resulting from natural calamities such as mudslides, landslides, and flashfloods, which occur in the local scene, is the problem the greenhouse nursery addresses by establishing a space for tree seedling propagation. This thesis aims to provide a flexible design of a greenhouse and create innovation that will act as the core of the whole facility. It will also disseminate information to younger generations to educate them on the importance of natural preservation. As they say, innovation is produced in times of dire need. The site is prone to being a water catch basin during the rainy season, making the area tricky to build upon, aside from submitting to traditional backfilling. Preserving the site's natural features is one of the principles of design. The creation of the water filtration chambers to collect and recycle rainwater came to fruition. The chambers consist of natural filtration elements such as sands, stones, rocks, and roots of plants to filter flood water and be recycled. Using this

innovation, a natural water reservoir is collected and used throughout the greenhouse nursery facility. This thesis contributes to a more sustainable way of addressing environmental issues using sustainability in the form of architectural design principles.

Keywords: Greenhouse nursery, seedling propagation, backfilling, water filtration chamber, natural filtration elements, water reservoir



SEAIT-SR-05

Angat Bahay: A Proposed Mixed-Use Integrated Sustainable Subdivision in Cordon, Isabela

Mark Joshua F. Morillos, Romeo C. Romero Jr., RLA

This thesis addresses the pressing challenges faced by the town of Cordon in Isabela, specifically on housing issues such as a significant backlog, increasing demand for commercial spaces in the district, and the existence of housing units in areas with moderate to high risks. The research delves into identifying sustainable solutions to these problems by proposing the development of "Angat-Bahay," a mixed-use integrated sustainable subdivision. The proposed subdivision aims to provide a comprehensive and innovative approach to housing, integrating residential and commercial spaces to meet the community's growing demands. The emphasis on sustainability ensures that the development not only addresses the immediate housing needs but also contributes to the long-term resilience and well-being of the residents. By strategically planning and designing the subdivision, this thesis seeks to create a model for sustainable urban development that can serve as a blueprint for addressing similar challenges in other regions.

Through this research, "Angat-Bahay" aspires to contribute significantly to the enhancement of housing accessibility, mitigate commercial space shortages, and ensure the safety and security of residents in Cordon, Isabela.

Keywords: Subdivision, housing, urban development, sustainable, mixed-use

SEAIT-SR-06



**SARANAY: Agri-Ecotourism and Wellness Retreat
Complex: A Recalibration of the Saguday
Ecotourism Park**

Mark Angelo N. Olonan, & Christopher R. Dominguez, RLA

The COVID-19 pandemic has prompted a reevaluation of tourism and community well-being, necessitating a shift toward sustainable development practices. The main purpose of this research is to come up with a design that focuses on the development of Saranay, An Agri Eco-Tourism and Wellness Retreat Complex, as a recalibration of the existing Saguday Eco-Tourism Park at Villa Cardenas, Saguday, Quirino. The project aims to enhance personal growth, learning, and rejuvenation while supporting local farmers by introducing sustainable farming practices and fostering agricultural productivity and economic growth. A qualitative design collected data using interviews, consultations, site visits, and various resources to gather information on the project's concept and requirements. The study analyzes the site's conditions, strengths, and limitations, providing insights into the project's context and challenges. The data analysis serves as a foundation for conceptualization and planning. It establishes an empathetic sustainable development approach, prioritizing community well-being, socio-cultural considerations, and agricultural support. The study's findings and framework can guide future development projects, contributing to the resilience and betterment of communities in the Post-Pandemic Era – adding spaces for various visitor demographics, obtaining comprehensive market data, conducting detailed financial studies, highlighting flora and fauna, and involving specialized professionals for facility and technical planning. This research represents a transformative architecture that integrates

sustainable tourism, agriculture, and wellness, offering a sanctuary for visitors and supporting the community's long-term growth.

Keywords: Saranay, recalibration, eco-tourism, wellness, retreat, complex

SEAIT-SR-07 

BANG-AR: A Proposed Lower Magat Eco-Tourism Wellness Center

*Rameau John Philippe B. Perez, Audry May C. Dominguez,
RLA*

A wellness center is a place that provides a range of activities and services to support physical, mental, and emotional well-being. Its main purpose is to assist individuals in maintaining a healthy lifestyle, managing stress, and preventing illness due to the increasing rate of individuals experiencing poor mental health conditions, as they cannot socialize with friends and family or engage in activities that help them relax and connect with nature. In addition, various stressors such as work, in-person and online, academic pressure, and other factors can contribute to stress and anxiety, further exacerbating mental well-being. The project is designed to cater to various wellness spaces that have the concept of sensibility that will encourage the individual to explore and try wellness services; in addition, the form of the structure is inspired and unified by the modern Filipino vernacular architecture, which also gives the uniqueness of the project. Overall, through design, the project will be able to cater to various wellness services that will give relaxation and relief to individuals.

Keywords: Wellness center, sensibility, relaxation, relief

SEAIT-SR-08

PAKADA: A Proposed Crematorium

Weinfred Queral, Mendoza Giancarlo, RLA

This architectural thesis explores the design of a crematorium facility that addresses the environmental concerns of traditional burial practices and caters to the emotional needs of grieving families. With the rising popularity of cremation for its cost-effectiveness, positive environmental impact, and flexibility in memorialization, the thesis aims to provide a dignified and serene space for farewell and remembrance. However, conventional cremation methods contribute to greenhouse gas emissions and lack a human-centered design approach. To overcome these challenges, the thesis explores the concept of alkaline hydrolysis. This water-based cremation technology emits no greenhouse gases and requires less energy than traditional cremation. The study emphasizes the importance of incorporating modern technology and environmentally friendly practices to mitigate the environmental impact of crematorium facilities. This thesis contributes to a more compassionate and environmentally conscious approach to the final rites of passage, utilizing sustainable design principles in the funeral industry.

Keywords: Alkaline hydrolysis, human-centered design, serene, remembrance, crematorium, cremation

SEAIT-SR-09 

**CENTRO AGRO: A Proposed San Isidro Agricultural
Mall and Farmers:
Research Learning Center**

Rovic Joseph C. Rigos, Christopher R. Dominguez, RLA

This study presents a comprehensive analysis of the development of an Agricultural Mall and Farmer's Research Learning Center. The study aimed to create a sustainable and collaborative hub supporting agricultural activities, promoting knowledge-sharing, and fostering community development. The

research encompassed design, functionality, sustainability, and community impact. Key features of the development included the Farmer's Market, Agro Supermarket, Agro Farm Supplies, Agro Machineries and Equipment, Hardware, Indoor Aeroponic Farms, Multi-purpose Hall, Greenhouses, Administrative Office, and Farmer's Research Learning Facility. Design strategies such as passive cooling, natural lighting, indoor vertical farming, solar panel systems, and rainwater harvesting were incorporated to enhance energy efficiency and resource management. The study evaluated the feasibility, benefits, and challenges associated with the project, emphasizing its potential as a model for future agricultural developments. The findings contribute to advancing sustainable practices in the agricultural sector, fostering economic growth, environmental sustainability, and community empowerment.

Keywords: Agricultural mall, farmer's research learning center, sustainability, community development, design strategies

SEAIT-SR-010 

Nayon: An Incremental and Co-Housing Development

Reynald M. Sabanal, Rino Franz U. Gumayagay, RLA

"Decent housing for Filipinos" has always been a perennial affair among those concerned about housing needs. Many attempts by the government have been made to achieve this goal; however, even though new dwellings are continuously being produced, the demand for decent housing still exceeds the supply. This thesis presents a novel approach to address the challenges associated with the country's affordable housing developments and cultural appropriability. The design responds by manipulating standardized building systems to create an alternative form of housing. By leveraging modular processes and incremental strategy of resident-managed improvements, the approach aims to better align with Filipino ownership values and promote

thriving communities, drawing on local contextual examples in Solano Nueva Vizcaya. The concept revolves around "growth" and seeks to establish a framework for designing modular structures that accommodate residents' changing needs over time. Additionally, the design incorporates vertical development to counteract unsustainable growth patterns, maximizing the number of units and communal spaces within a smaller land footprint. The proposed system is designed to be resilient, provide long-term solutions, and endure the evolving spatial demands of current Filipino generations and beyond.

Keywords: NAYON, incremental, co-housing, development, housing typology, modular architecture, cross-laminated timber (CLT), community, thriving.

SEAIT-SR-011 

KWADRO: Negating Architecture in a Riverfront Tourism Complex for Governor's Rapids

Christian Dave R. San Andres, & Rino Franz U. Gumayagay

The prevalence of the COVID-19 epidemic had an impact on the Philippines' growing tourism economy. It is found that tourism is adaptable in its ability to respond to changing market conditions. The study aims to propose a Tourism Complex for Governor's Rapids, evaluate its potential, and address its gradual devaluation as a tourist destination. It aims to diversify products and services, showcase the destination's unique culture and natural beauty, and contribute to a more sustainable tourism industry. The study involves applied research methods and analyzes the collected data to integrate into the design process. The design aims to create a harmonious balance between the natural and built environments, providing comfortable and engaging spaces for visitors. The complex includes accommodations, dining, recreational, and cultural spaces, emphasizing intuition and emotional response, incorporating

biophilic design and framing views to enhance a seamless connection with nature. The researchers completed the project "KWADRO: Negating Architecture in a Riverfront Tourism Complex for Governor's Rapids," achieving all outlined objectives. The intentional framing of views enhanced the visitor experience by highlighting the beauty of Governor's Rapids and integrating the built environment with the surroundings. Blurring boundaries between personal and collective realms created a flexible and inclusive environment. High-quality facilities increased visitor satisfaction and encouraged repeat visits. Conducting a visitor survey, exploring technology integration, evaluating the adaptable design, and conducting a cost-benefit analysis can enhance the project's effectiveness and success.

Keywords: Tourism complex, devaluation, framing views, blurring boundaries

SEAIT-SR-012 

IGAM: A Proposed Firing Range Clubhouse

Ian Cedric M. Sugay, & Tomas B. Binbinon Jr., RLA

This study examined how One with Nature may be used at the Firing Range Clubhouse, particularly emphasizing how it can promote local gun tourism. This study has shown that incorporating Sustainable design concepts into the Clubhouse design is feasible and successful by considering case studies and thoroughly investigating pertinent literature. The results of this study demonstrate the many advantages of sustainable architecture, including its increased ecological sustainability and flexibility to adapt to shifting environmental conditions. Clubhouses that successfully integrate sustainable design principles may substantially influence the environment, produce healthier interior environments, and encourage members to live more sustainably.



**PRANA: A Proposed
Kasibu Municipal Hospital Philhealth Ward with OR-
DR Complex**

Ed Clyde B. Tabalanza, & Ireneo Guerrero II, RLA

Hospitals are one of the most important buildings needed in a community because these structures' main purpose is to provide accommodation and treatment services for those with medical problems. However, due to rapid changes in patient circumstances, healthcare staff have one of the most demanding jobs. This gives the perception that traditional hospitals' overall atmosphere is stressful and unsettling, negatively impacting their patients' health. This created the concept of *salutogenesis*, views health as "ease and disease," and highlights the elements that influence how a person changes from one state to another. The project aims to establish a new medical facility for the Kasibu Municipal Hospital. It intends to increase the hospital's bed capacity. It follows the concept of Salutogenic Architecture, which emphasizes the benefits of exposure to natural elements for improved recovery. The construction will be carried out in phases based on government sponsorships. The project will adhere to the guidelines and standards of the Department of Health (DOH) and prioritize proper maintenance and efficiency. It aims to create a clean, healing environment, provide quality services, and offer health benefits to the community. Services provided will be determined based on individuals' health needs rather than their ability to pay.

Keywords: Hospital ward, salutogenic architecture, healthcare, medical facility

SEAIT-SR-014



Amphibious Architecture: Ecorium – A Proposed Provincial Ecology Center

Limuel B. Vilar, & Bobby U. Argote II, RLA, MS ARCH

Amphibious architecture offers a promising solution to the challenges posed by climate change for designing and constructing structures that need these kinds of architectural solutions. This abstract provides an overview of amphibious architecture, highlighting its key principles, design considerations, and the ecological benefits it brings to developing ecology centers. The paper explored the application of amphibious architecture within ecology centers, focusing on its potential for disaster and risk reduction, particularly in the face of natural disasters like flooding. Amphibious architecture involves strategically integrating structures that can adapt and respond to changing water levels, allowing them to float when needed. This dynamic approach to design ensures the resilience of these types of buildings in the context of the ecology center against flooding events. By embracing this adaptive characteristic, structures can effectively mitigate risk and minimize damage to the built environment. As amphibious architecture evolves, future studies must build upon this research and delve deeper into its practical implementation and long-term impacts. By considering the experiences and findings presented in this study, researchers and practitioners can advance the field of amphibious architecture, fostering sustainable development and effective disaster management strategies.

Keywords: Amphibious architecture, flooding, sustainable, ecology center, float

SEAIT-SR-015

A Proposed 3-storey Multipurpose Building in Dupax District Hospital Incorporating Circadian Lighting

Nicole R. Bercida, & Audry May C. Dominguez, RLA

The proposed 3-story multipurpose building in Dupax District Hospital located in Malasin, Dupax Del Norte (DDH), a project from the Provincial Government of Nueva Vizcaya, will significantly enhance the healthcare infrastructure and services, addressing the growing needs of the community and improving patient care. Based on case studies and interviews, the main problem concerning the need for an additional building on the premises of Dupax District Hospital is the lack of wards to accommodate all the patients. Consequently, other facilities on the premises house patients due to the lack of availability. And function halls to cater events as venues for training medical practitioners, etc. This thesis proposes designing and integrating a three-story multipurpose building into the Dupax District Hospital, focusing on incorporating circadian lighting design and modern architecture. Circadian lighting is a concept that aims to synchronize the lighting conditions within a built environment with the natural patterns of the human body's circadian rhythm. By doing so, it has the potential to positively impact the health and well-being of patients, staff, and visitors. It is not the usual “multipurpose” where every space can be used for another in a different time setting. It is a multipurpose building where multiple spaces with specific functions are joined to complement and address the lack of spaces needed within the site.

Keywords: Hospital, wards, function hall, circadian lighting, lighting design, healing environment, multipurpose building

SEAIT-SR-016 

E-SCAPE IN SPACES: A Revitalizing Wellness Farm

Hazel Erika M. Cordero, Irone Jay C. Diozo, RLA

In today's fast and instant world leading to burnout for many, architecture plays a significant role in restoring, transforming, redeeming, and sustaining wellness. The synergy between the mind, body, and environment in establishing a sense of a soothing place can impact and support the healing and well-being of individuals in response to the pressing issue of limited access to nature-related health and wellness services in the provinces and with the set goal of government achieving SDG #3 which focuses on promoting good health and well-being, by 2023. A wellness farm, as proposed in this study, can contribute to this and serve as a way to increase health and wellness awareness. This research presents an approach of a wellness farm designed to engage all the senses, creating a holistic and immersive experience for users. The concept revolves around the guiding idea of "nature as an escape," which aims to create a sanctuary where users can escape from life's stressors and reconnect with nature's restorative power. The site is nestled in Purok 6, Brgy. Paitan is in a 13-14.5% sloped terrain surrounded by farmlands, with views of the Sierra Madre Mountains and Magat River. Design solutions and strategies include a rain-harvesting system, passive design, solar panels, water, and green features; it focuses on user-centered design to attain user comfortability, safety and security, sustainability, functionality, topography, and sensory experience. The proposed development is designed harmoniously with nature, contributing to a more sustainable and livable future.

Keywords: Wellness, well-being, farm, nature, revitalize.

SEAIT-SR-017



PAGDAGUSAN: A Proposed Modern Tropical Hotel of MIAKA Eco-park

Mariz E. Esteban, & Irone Jay C. Diozo, RLA

Tourism is one of the most important sectors in the Philippine economy. Local tourism is an income-generating industry for the

province of Nueva Vizcaya. It may not have any powdery beaches like the other provinces. Still, it has other tourist destinations such as falls, caves, rivers, mountains, and more. With the progression of tourism in the province, there is a need for additional structures to accommodate the increasing number of tourists and guests. One local destination is Miaka Eco-park in Paitan, Bayombong, and Nueva Vizcaya. This project proposed the construction of a hotel that aims to cater to the increasing number of guests and tourists of the eco-park. Since hotels are among the highest energy and water consumers per square foot, as per the study, the designer integrates tropical modernism to help address the problem. This concept aims to provide guests comfort with less energy consumption through passive design.

Keywords: Modern tropical hotel, tropical architecture, hotel



SEAIT-SR-018

Stepping Up the Game: A Proposed Multifunctional Town Center

Alysalene M. Guisangue, & Romeo C. Romero, Jr., RLA

It has been three years since the outbreak of the coronavirus. Every country had to close its borders to protect its people, which caused the Financial Times Stock Exchange to drop by 14.3% in 2020. It was said to be its worst performance since 2008, causing a huge economic downfall. But as the outbreak of COVID-19 slowly declines, the roads are again filled with vehicles, offices are being occupied, the economy is again operating, and people are having their time entertaining themselves outside their homes, just like how life was before the pandemic emerged. One of the forms of entertainment that people do today is to visit the nearest city to stroll in the parks, shop in stores, dine, and bond with other people. This proposed project entitled, “Stepping Up the Game: A Proposed Multifunctional Town Center in Luna, Isabela,” was designed to

accommodate all the needs and wants of Lunanians and expand the cater to their neighboring municipalities by being the central of commercial and social of the town. The design solution of the proposed town center was to adopt flexible architecture and contemporary vernacular architecture, which was appropriate for the project's success.

Keywords: Town center, multifunctional, sustainable, flexible architecture, contemporary vernacular architecture



SEAIT-SR-019

**SINAG: Transformable Spaces for Evacuation Center
Embedded with a Recreational Hub**

Hanah R. Manglo, & Charmaine Joy B. Bacarra, RLA

The Local Government Unit (LGU) determined that the adaptable spaces for an evacuation center intertwined with a recreational hub's location were the most accessible option for evacuation. Moreover, because the interior areas are easily adaptable to other uses or can be employed in an emergency, this suggested project will not become crucial to the municipality of Cabatuan's public users. Its main purpose is to provide shelter for evacuees; it is also open for non-residence evacuees and various events, particularly those outside the building. Moreover, in case of emergency, they prioritized the municipality's residence. Other features around the building include a banquette, park, outdoor court, and pavilion area. The project aimed to create a flexible, useful, and welcoming shelter inside and outside the building.

Keywords: Transformable spaces, evacuation center, recreational hub



SEAIT-SR-020

KALUWAGAN: A Proposed Hotel in Lower Magat Eco-Tourism Park: Integrating Culture and Technology

Arlyn Joy D. Marzan, Audry May C. Dominguez, RLA

Due to its rich cultural legacy and biodiversity, the Philippines has become a major player in the world's tourism industry. The emergence of ecotourism is noteworthy, as eco-parks exhibit the splendor of nature but also pose difficulties because of their isolated settings. Because they provide comfortable lodging and operate as hubs for park-related activities, hotels are essential to the growth of ecotourism. The hospitality sector is adopting sustainable practices that support ecotourism and benefit local economies, the environment, and tourists by offering immersive experiences that maintain natural integrity. The global movement toward green tourism reflects people's increasing understanding of how crucial it is to balance local cultural heritage preservation with environmental protection. This research explores the concept of "Eco-Cultural Tourism," merging natural and cultural elements to create a sustainable travel destination. The proposed hotel aims to improve lodging options for travelers and foster an appreciation for the outdoors. The study aligns with global trends in sustainable tourism, serving as a reference for future research. It emphasizes the importance of balancing technological integration, eco-friendly practices, and cultural preservation in hospitality projects.

Keywords: Sustainable tourism, eco-cultural design, hotel, hospitality, park



SEAIT-SR-021

MUSTRA: A Proposed Ecological Tourism Park and Recreation Center

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This research aims to design a recreational center that provides

a dedicated space for individuals to engage in different physical activities, promoting their overall health and well-being. Also, the research will emphasize the design of an administration building that serves as a central hub for managing the recreational center. This building will house administrative offices, staff facilities, and support infrastructure necessary for smooth operations. The design will prioritize functionality, aesthetics, and accessibility to ensure an efficient and comfortable working environment for the staff. The ecological tourism park and recreation center is designed to offer a range of outdoor recreational activities, including zip-lining, wall climbing, ATV riding, picnic areas, and team-building spaces. These activities promote physical fitness, mental well-being, and visitor social interaction. The park is strategically located amidst natural wonders, allowing visitors to explore forests and rivers providing a refreshing escape from urban life. Furthermore, the project is designed to benefit the local community by generating economic growth and providing employment opportunities. The administration building within the park will serve as a hub for municipal functions, contributing to the overall development of the municipality. Additionally, the park's recreational facilities and amenities will attract tourists, stimulate the local economy, and positively impact the residents' livelihoods. The findings and recommendations from this research will serve as a valuable guide for developing the proposed recreational center and administration building; by providing a well-designed and well-managed facility, the research endeavors to promote physical activity, health, and wellness among individuals and contribute to the community's overall quality of life.

Keywords: Recreational center, physical activities, administration building, ecological tourism

SEAIT-SR-022 

Plaza De Solano: A Proposed Modern and Sustainable Commercial Hub

Shaznie Ericka V. Nastor, & Irone Jay C. Diozo, RLA

A fusion of modern and sustainable design solutions is vital, especially in a municipality adopting vertical development. The project began establishing a new commercial center to cater to all spaces while considering its modern elements and sustainability. The Plaza De Solano, a commercial center with several sorts of stalls such as low-end, mid-end, and high-end stalls, will serve the people's needs while also giving local or small businesses a chance. A linkage, such as a skywalk, connecting two commercial buildings is also a significant step for users to move from one building to another while reducing traffic. Its modern and sustainable feature is evident through using materials in buildings that are energy efficient, saving maintenance and health of the structure. Also, taking into consideration human-environment interaction. The commercial hub will be an accomplishment, grown by skills, constructed by enthusiasm, and formed by the artist's talents. It will serve as a benchmark in the municipality of Solano, striving for greater growth and a positive effect on other businesses in the town and throughout the province.

Keywords: Commercial hub, modern design, sustainable design, vertical development, human-environment interaction

SEAIT-SR-023 

RANGTAY: Santiago Sports City and Recreational Park

Katleen Joy B. Pavo, & Rino Franz U. Gumayagay, RLA

The Philippines has consistently been left out of major sporting events due to a lack of sports facilities that meet high global standards. One of the reasons contributing to decreased physical activity in society is the attractiveness of sports and recreation facilities. Undeveloped sports facilities and lack of access to them are a particularly prominent hindrance in rural areas. Sports in Santiago City is one of the neglected projects of the government. As Santiago City progresses toward

commercialization, sports and recreation are neglected. This thesis project entitled Rangtay: Santiago Sports City and Recreational Park aims to create a public facility that promotes sports and recreational activities in the community. This project aims to make the facility the start of sports and recreational development in the city. The proposed design is versatile and well-suited to accommodate a range of sports and recreational activities. It includes a multi-purpose sports hall, swimming arena, sports stadium, and recreational park. By creating opportunities for physical exercise, social interaction, and relaxation, the study can generate substantial revenue for the Local Government of Santiago while enhancing the citizen's overall health and wellness.

Keywords: Sports hall, stadium, recreation, arena



SEAIT-SR-024

**Public Library and Community Park as Living Spaces in
the City: A Gateway in Building the
Community Together**

Shella Marie G. Valdez, & Tomas B. Binbinon Jr., RLA

One significant thing that the municipality of Solano aims to achieve in the next few years is to become a city. Hence, potential tourist destinations like parks are proposed to contribute to the development of Solano. However, the availability of books in some schools is evident, but the facilities for reading are not enough. Most people view reading as boring and tiring although some enjoy reading. Therefore, this research study was carried out to provide a solution for designing a public library and community park to contribute to the transformation of Solano into a city. Allowing the data to speak for itself further in this study supports an applied research method. This study explored and determined the significant data that was a foundation of the project's overall design. Several forms were used to gather data, including consultations, site visits,

architectural books, and other relevant resources. The gathered data were then organized and analyzed for implementation. The results of this study present the overall design solution of the project. This included architectural plans, elevations, sections, and perspectives. Several studies, including market, technical, financial, management, socio-economic, and environmental, were also considered to present the results further.

Keywords: Public library, community park, design solution, living space, bioclimatic



SEAIT-SR-025

**Self-Sustaining Student Center Building at
Saint Mary's University**

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Mamuric, Deanna Lianne G. Opeña, Dan Kenneth Lutchina,
RCE*

Students, as the primary clients of the university, should be given excellent services for their non-academic needs. To house additional accommodation and socialization on the campus of Saint Mary's University, the research aims to address the concerns of the student councils regarding their respective offices, determine the location and standard design parameters of the building, and consider whether the university patio/lounge area is sufficient in terms of space planning standards from its use or occupancy. A qualitative approach was used to investigate the typical services and facilities for students in a student center through basic benchmarking of some national universities with student centers. These typical facilities include the following: Administrative, Spiritual, Educational, Social & Well-being, and Extra-Curricular Offices. The researchers concluded that the university's current lounge area is insufficient by space planning standards. The proposed student center building shall be constructed in the university canteen at the southern part of Fr. Cornelius Tonus Gymnasium of Saint

Mary's University, Bayombong, Nueva Vizcaya. The estimated project cost for the proposed student center building is Php 57,484,437.85, and the project can be completed in 262 days. Moreover, the researchers recommended investigating the site's soil-bearing capacity before construction. This inspection is necessary to ensure structural safety and stability. Based on the findings, the project is technically feasible; however, an in-depth financial feasibility assessment is recommended as a basis for the decision to implement the project.

Keywords: Student center building, student welfare, student organizations, accommodation



SEAIT-SR-026

ALAWAN: A Proposed Level 1 Private Hospital in Villa Quirino, Bagabag, Nueva Vizcaya - An Integration of Solar Energy and Rainwater Harvesting to a Green Medical Facility

Jamaica Mae P. Andaya, Jan Angelo M. Malijan, Glenn Peter F. Manat, Fate Jasmin H. Ortiz, & Dan Kenneth Lutchina, RCE

One of the nations with the largest population in the world is the Philippines. In this country, health is an essential right that must be guaranteed to all citizens. Even before the onset of the COVID-19 pandemic, the country was only average in its healthcare system. The municipality of Bagabag is facing challenges similar to those of the province of Nueva Vizcaya. Accessibility is a great factor in healthcare conditions in the municipality and the hospitals. However, the nearest is still far from the municipal town center. Therefore, it can be said that Bagabag needs a more equipped hospital to address its health problems, considering the lack of health services in the existing healthcare system and the time patients need to transfer to nearby hospitals. This study mainly aims to design and plan a level 1 private hospital in the municipality that can adequately meet its population's health demands without the need to go to nearby municipalities to avail

of healthcare services. After careful planning and designing, which this study requires, the researchers devised schematic plans for the proposed hospital. The building design features solar energy and a rainwater harvesting system for energy efficiency and incorporating a greener environment. The researchers also recommend possible hospital expansion utilizing the remaining space in the lot. This further development can also be a way to meet the increasing healthcare demands adequately.

Keywords: Level 1 hospital, rainwater harvesting, green environment



SEAIT-SR-027

**Mangtay: A Proposed Transportation Hub with a
Community Recreational Park at Brgy. Malasin, Dupax
Del Norte, Nueva Vizcaya**

*George S. Torejas, Nica I. Lorenzo, Julie Ann V. Luna, Rhean
Carmina V. Pugoy, & Michelle Kyra S. Bautista, RCE*

Corresponding outcomes have closely accompanied transportation's progress in motorization. With the swift rise in population and motorization leading to transportation issues, it becomes imperative to construct transportation terminals at strategic locations. Dupax del Norte, the third-largest municipality in Nueva Vizcaya, lacks a terminal. This poses challenges, such as a dedicated facility for secured and reliable transportation operations. The lack of such a terminal exacerbates this issue, leading to roads and streets being utilized as ad hoc pick-up and drop-off spots. This contributes to traffic congestion and compromises the safety and comfort of commuters and public utility drivers due to improper loading and unloading areas. The project "Mangtay: A Proposed Transportation Hub with Community Recreational Park" aims to solve this problem. The project encompasses a total land area of 14,495 sq. m. It is located along DM Junction–Malasin Road in

Barangay Malasin, Dupax Del Norte. The location was selected for its history of urban development and numerous commercial and institutional facilities. Moreover, the terminal adopts a centralized terminal operation, providing a comfortable and safe terminal while facilitating the organized coordination of public transportation modes, including buses, minibusses, vans, and tricycles. Further, the terminal consists of the main terminal building, parking spaces, a material recovery facility (MRF), and a community recreational park. The project cost is PHP 29,686,598.25, slated for completion in 221 days. Its projected Return on Investment (ROI) is 23 years and 4 months.

Keywords: Transportation hub, centralized terminal, public transportation, commuter, traffic survey



SEAIT-SR-028

Utilization of Wastepaper as a Partial Replacement of Cement for Papercrete Masonry Bricks

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This study investigates the utilization of wastepaper as a partial replacement of cement in concrete to promote sustainable waste management practices. The motive for doing this research is to make an environmentally friendly construction material that can be a way to utilize those waste papers that do not get recycled. This research analyzes the effects of incorporating wastepaper in concrete mixtures in terms of compressive strength, flexural strength, water absorption test, fire resistance test, and weight test. To address the research objectives, 72 8" x 4" x 3" papercrete bricks specimens were prepared and subjected to compressive and flexural strength tests. 48 8" x 4" x 3" papercrete bricks specimens were tested from water absorption tests and fire resistance tests. The results revealed that the papercrete bricks with 0% wastepaper compressive and flexural strengths attained the highest strength during the 7th, 14th, and

28th days. For the water absorption test, the more wastepaper added, the more water it absorbs. The fire's diameter spread on the fire resistance test does not increase much. The higher the percentage of wastepaper, the lighter the weight. The findings also identified proper workability and compaction challenges when incorporating wastepaper, reducing the strength. These findings emphasize the need for additional considerations when using wastepaper in concrete mixtures. Overall, it is concluded that using wastepaper as a partial replacement of cement in concrete may not be suitable for components of buildings using a Class C mixture due to the reduction of strength. However, further research and refinement of the concrete mixture may yield more favorable results for specific applications.

Keywords: Compressive test, flexural test, fire test, weight test, water absorption test, cement, wastepaper, papercrete bricks (concrete bricks)

SEAIT-SR-029 

**Lungabang: A Proposed Public Library at Solano,
Nueva Vizcaya Reinforcing Knowledge with the
Foundation of the Past**

*Paulen Reign N. Castillo, Ricky B. Magno Jr., Ella Marie C.
Paladin, Carl Lanz A. Sanchez, Michelle Kyra S. Bautista, RCE*

The World Bank study emphasizes how learning poverty has rapidly increased due to school closures and other disruptions linked to COVID-19. Hence, expanding the youth's access to quality educational facilities is more crucial than ever. Public libraries are still among the few free places offering services to diverse groups. The Philippine Republic Act No. 7743 requires all provinces, cities, or municipalities to have functional libraries for every citizen and barangays to have barangay reading centers. Nueva Vizcaya is one of the provinces that don't have a functional public library despite National Reading Month and Library and Information Services Month. Solano is the second-largest municipality in the province of Nueva Vizcaya. It has a total population of 65,287 (PSA, 2020) and a school-going age

population of 20,280 (CBMS 2015). Only two functional libraries are present among the 92 schools in the municipality. Solano is a municipality in the province of Nueva Vizcaya and the next city in Cagayan Valley in the Philippines. This project proposal will help its citizens improve their reading and learning performances by providing a student-friendly learning space and learning and reading materials. The proposed Library will be named after Solano's former name, "Lungabang," which means cave in Gaddang, one of the native dialects in Solano. The cave was used before as a shelter for our ancestors to protect themselves from wild animals and weather. This study proposes a Public Library in Solano, Nueva Vizcaya that will provide individuals with a space to enhance their knowledge. Following numerous codes' architectural guidelines and requirements, the researchers developed the design and conceptual layout for the proposed Solano public library. The researchers provided a library with a user seating capacity of 360 seats based on the computed municipal population growth for the year 2030 and by using the library space planning guidebook. The researchers also provided rooms such as reading areas, book sections, a children's maker space, a digital library, a museum, an audio-visual room, a conference room, and study cubicles. The researchers also estimated the project's total cost to be 42,347,018 pesos. The following constitutes the study's conclusion after considering its goals. The study will not cover the acquisition of books and other necessary learning resources for the Library.

Keywords: Nueva Vizcaya, public library, learning space, knowledge

SEAIT-SR-030 

Kapamaize-Ing Fiberboard: The Utilization of Corn Husk and Cotton Fiber as A Noise Reduction Solution

Melody Jane M. Acar, Raven Justine R. Balila, Faye-Ann M. Cristobal, Czarina Mae T. Luis, & Aurus Jodeo C. Tiam, MSCE
The noise of modern society has led to discomfort that disrupts

our daily routine. The country's increased agricultural waste contributes to the alarming waste management issue. As a solution, this study investigates the utilization of natural fibers such as corn husk and cotton fibers as a noise-reducing fiberboard. The same acoustic absorption process as other synthetic materials is expected in natural fibers. By combining the two materials, the study aims to know the most effective blending ratio of corn to cotton and the effect of thickness and porosity on its sound absorption. Thirty-two samples were created and subjected to a functionality test to answer the objectives. The results revealed that the 75% corn and 25% cotton ratio has the highest effectivity for sound absorption; the fiberboards with a thickness of 1 centimeter have a higher effectivity of 35.58% compared to the 32.37% of the 2-centimeter fiberboards. Furthermore, the 1-cm fiberboards are more effective at lower frequencies (200-600 Hz) and middle frequencies (700-1100 Hz), while the 2-cm fiberboard offers a higher effectivity rate for higher frequencies (1200-1500 Hz). The results further prove that acoustic performance also increases as porosity increases. However, there will be a diminishing return as the porosity increases at a certain point. Overall, the results of the study provide a significant impact on noise reduction and agricultural waste management. This also opens new opportunities for future studies that could bring a breakthrough in soundproofing and construction.

Keywords: Corn husk, blending ratio, fiberboard, noise reduction



SEAIT-SR-031

**A Proposed Provincial Special Drug Education Center
(SDEC) at Vista Alegre, Bayombong, Nueva Vizcaya**

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Daguio, Jan Andrei C. Dionisio, Aurus Jodeo C. Tiam, MSCE*

The Philippines faces a significant challenge in dealing with the

widespread issue of illegal drug use. This study aims to address the problem by proposing the establishment of a Special Drug Education Center (SDEC) for Out-of-School Youth (OSY) and street children in Nueva Vizcaya. It explores existing programs such as the Alternative Learning System (ALS) and Republic Act 9165 (Comprehensive Dangerous Drugs Act of 2002) that emphasize the importance of protecting the welfare of the youth and implementing anti-drug abuse policies. The proposed SDEC aims to provide counseling, life skills training, intervention programs, and educational opportunities to OSY, preventing future drug use and promoting their integration into society. It is a three-story building with a modern architectural design using green and cream-yellow, which implies the colors of the province of Nueva Vizcaya. Additionally, wide windows maximize the wind's effect on the building. Moreover, it proposes using green engineering principles in the facility, incorporating features such as a skylight system, indoor vegetation, solar panels, and LED lighting to ensure energy efficiency and environmental sustainability. The building primarily features rooms for drug education, counseling, and other programs. These include training rooms for literacy programs where formal and non-formal education about drugs and other essential topics are discussed in coordination with DepEd and other organizations. Additionally, a computer room is incorporated that can be used by out-of-school youth (OSY) and personnel to enhance their computer skills. Furthermore, counseling rooms are available for peer and family counseling to promote positive behavior and a healthy lifestyle among the OSY. Lastly, a library is a recreational space for gaining knowledge. The total project cost for the proposal is ₱20,243,164, with 206 calendar days.

Keywords: Drug education, education, special drug education center, out-of-school-youth, youth

SEAIT-SR-032



**Strength Dynamics of Class A Concrete Mixture with
Bacillus Subtilis In Varying Concentrations of
Calcium Lactate**

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This paper investigates the strength dynamics, particularly the compressive and flexural strength of Class A concrete mixture with *Bacillus subtilis* in varying concentrations of Calcium lactate. Various studies proved that incorporating bacteria such as *Bacillus* species remarkably improves the mechanical properties of concrete. Furthermore, adding calcium nutrients further supplements the increase in strength. In this study, the researchers utilized *Bacillus subtilis* and Calcium lactate as an additive to the concrete mixture. Moreover, it follows an experimental quantitative approach where the concrete with bacteria and calcium lactate is compared with the conventional concrete mixture. There are four batches used in this study, which include the conventional concrete mixture (CCM), Bio-concrete with 0.05 mol/L, 0.10 mol/L, 0.20 mol/L of calcium lactate (BC-0.05, BC-0.10, and BC-0.20 respectively). Seventy-two concrete samples were cast: 36 cylindrical samples and 36 rectangular samples. The concrete samples are wet-cured for 7, 14, and 28 days. After curing, these are subjected to Compressive and Flexural strength tests following ASTM C39 and ASTM C293, respectively. Data are then collected and presented through graphs and tables. The tests showed that the concrete with *B. subtilis* and calcium lactate, specifically BC-0.10, had increased concrete's compressive and flexural strength by 44.25% and 4%, respectively, relative to the conventional concrete mixture.

Keywords: *Bacillus subtilis*, calcium lactate, bio-concrete, conventional concrete, strength dynamics

SEAIT-SR-033



ARAKUP: A **Proposed**
Adaptive Residential Structure with Rotating Envelope
System in Dingalan, Aurora, Subject to Strong Rain and
Wind Hazard

*Ron Carlo D. Gañalongo, Joanmae Charm D. Ancheta,
Djamica Mae N. Jose, & Aurus Jodeo C. Tiam, MSCE*

A typhoon is a phenomenon capable of destroying someone's property, whether on agriculture or infrastructure. This will result in financial devastation and even dangers to human life. High winds cause wind hazards that can cause downed trees, flying debris, and powerline disruption. Thus, Arakup, an adaptive residential structure with a rotating envelope system, will solve the dangers of high winds in Dingalan, Aurora, which can cater to a family of 2 to 4 members. The researchers focused on technical plans such as structural, architectural, electrical, and plumbing design. Moreover, the researchers also conducted a structural analysis and comparison of structure regarding the wind analysis of the study, the mechanism of the protective cover, and the cost estimate and duration of work of the study. The proposed project was designed using the principles of reinforced concrete and steel design following the National Structural Code of the Philippines (NSCP 2015) and the National Building Code of the Philippines (NBCP). By conducting site visits and interviews with the officials of the Municipal Disaster Risk Reduction Management Office – Dingalan, Aurora, the researchers gathered detailed information and data needed for the proposed project. The proposed Arakup has a floor area of 98.17 square meters, consisting of different rooms and a mezzanine. The protective cover will rotate around the structure during typhoons and can be used on various occasions. The project's estimated cost is Php4,593,640.12 and has a work duration of 129 days.

Keywords: Arakup, protective cover, typhoon, wind-hazard



SEAIT-SR-034

**SIRIB: A Proposed Hybrid Library at Northeastern
College Brgy. Villasis, Santiago City, Isabela, “An
Integration of Green Building Concept to**

Environmental Sustainability

*Ian Marve A. Val, Krizza Mei T. Razo, Azerith S. Pumihic,
Aries John Ric C. Ambrocio, & Aurus Jodeo C. Tiam, MSCE*

A library is part of the teaching and learning environment (QS Study, 2022). The library is a focal point for all kinds of reading, gathering information, lively discussion, and knowledge building for individuals with passion and desire for learning. Santiago City Isabela is a first-class independent city; however, some facilities should be paid attention to too, such as libraries that will benefit its people, especially in their academic and literacy aspects. Santiago City is home to notable institutions such as Northeastern College, the first institution in the city since its founding in 1941 to provide college-level courses. The existing academic library of Northeastern College cannot fully accommodate its users due to the constant increase in their population, making the institution suitable for the proposed hybrid library. This proposal addressed the absence of a public library in Santiago City to accommodate the increasing population. It supplied important resources such as electronic and digital resources. The proposed building's modern architectural style, L-shape, and green color played around the proponent's existing buildings to maintain the building's identity. Its total floor area is 1697 square meters. The main highlights of the building are the wide reading areas, co-working spaces, e-library, conference room, and audio-visual room. The structural, electrical, and plumbing were also designed based on the implementing rules and regulations of the research instruments used. Solar panels were used for energy efficiency and rainwater harvesting for a water-efficient building. The total cost of the structure is Php 41,372,366.76, and a project duration of 303 calendar days. The calculated Return on Investment of the structure was 3 years.

Keywords: Hybrid library, E-library, co-working space, green building concept



Evaluation of Flood Control Structures and Community Resilience of Selected Barangays of Bayombong, Nueva Vizcaya: A Comprehensive Flood Vulnerability Assessment

Christa Joyce J. Doria, Kaye Cee L. Espinas, Vicmorina S. Ingusan, & Daisy Jane T. Lampa, BSCE

In recent years, there has been an increase in both the frequency and severity of floods, presenting significant challenges to communities worldwide. These floods result in immediate loss of life and infrastructure damage and have far-reaching socio-economic and environmental consequences. That is why it has become increasingly important to understand and address the vulnerability of communities to floods to enhance their resilience and mitigate the impacts of these devastating events. This study focused on the assessment of flood vulnerability in selected communities. Their associated flood control structures aim to comprehensively analyze the factors contributing to vulnerability and explore the multifaceted nature of flood vulnerability, considering various dimensions, including exposure, sensitivity, and adaptive capacity. The communities assessed in this study include Buenavista, Busilac, Magsaysay, Vista Alegre, District IV, Sta. Rosa, Bonfal East, Magapuy, and Paitan. The assessment encompasses these communities and their associated flood control structures. A substantial amount of data was successfully gathered through meticulous site investigations, the distribution of well-crafted questionnaires, and extensive data mining. This rich dataset was subjected to rigorous analysis, allowing us to extract meaningful findings and valuable insights. To contextualize and validate our results, we conducted a comparative analysis with the study conducted by Agravante et al. in 2013. By comparing our findings with their previous research, we identified similarities, differences, and temporal changes in the flood vulnerability of the assessed communities and their flood control structures. The present study's findings highlight a significant improvement in the overall level of vulnerability compared to the study conducted by Agravante et al. in 2013. In the previous study, all of the assessed barangays were rated as high to very highly vulnerable regarding the total vulnerability of communities. However, in the present

study, all of the barangays were found to be moderately vulnerable, indicating a positive shift towards increased resilience and risk reduction efforts. Similarly, regarding the total vulnerability of flood controls, the 2013 study revealed that most barangays assessed were classified as very highly vulnerable. In contrast, the present study demonstrates an improvement in vulnerability levels, although some barangays remain highly vulnerable. This suggests that progress has been made in certain aspects of flood control. Still, persistent vulnerabilities need to be addressed to enhance the effectiveness of flood control measures further. Overall, these findings emphasize the importance of ongoing efforts to enhance community resilience and reduce vulnerability to flooding. Continued investment in flood management strategies and targeted interventions can help further mitigate risks and ensure the long-term safety and well-being of the communities in the study area.

Keywords: Flood vulnerability assessment, vulnerability of flood control, vulnerability of community, flood control structures

SEAIT-SR-036 

**Rangtay Rang-Ay: A Proposed Multi-Span Reinforced
Concrete Deck Girder Bridge at Barangay Alloy,
Kasibu, Nueva Vizcaya**

*Kamille Jemiah S. Calucag, Aleza Yvonne O. Cantor, Ryan Kurt
M. Dagdag, Mel Jay F. Quimo, & Aurus Jodeo C. Tiam, MSCE*

Bridges have a special place in transportation infrastructure due to their direct relationship with other places. It plays a significant role in transportation. However, there are still a lot of places in the Philippines that do not have well-established bridges or, in some cases, non-existent, which is one of the significant factors that affect the whole economic productivity of a particular place. With this, the researchers aim to propose the

“Rangtay Rang-ay,” a two-lane multi-span reinforced concrete deck girder bridge at Purok 1, Barangay Alloy, Kasibu, Nueva Vizcaya employing the principles of engineering. Moreover, the researchers followed the steps from DPWH’s Design Guidelines, Criteria, and Specifications (DGCS) Volume 5: Bridge Design, 2015, to create the bridge's design. The designed bridge has three spans of 15 meters, each having a total length of 45 meters. Structural analysis and design were performed using CSIColumn and the concepts of Reinforced Concrete Design. The maximum flood level obtained from MDRRMO Kasibu was used to reference the bridge's height. Due to the unavailability of soil exploration near the project location, the researchers provided two types of foundation design—shallow and deep. Furthermore, a direct shear soil test was conducted to determine the bearing capacity of the soil. After designing, the detailed cost estimate, program of works, bar chart, S-curve, and construction schedule were made.

Keywords: Overflow bridge, reinforced concrete deck girder, foundation, direct shear test, hydraulic analysis

SEAIT-SR-037 

A Proposed Slope Protection Along Diffuday-Bonifacio Provincial Road Quezon, Nueva Vizcaya

Reyven Joshua A. Galicia, Jenieson A. Mendoza, Nikki Chanelle Maye C. Toletntino, & Michelle Kyra S. Bautista, RCE

Libraries are institutional buildings where collections of resources and information are kept. It also includes arranging and cataloging, lending resources to those in need, and providing reading spaces and other related activities. Public libraries are essential to our society because they foster user education and preserve our shared cultural and socioeconomic legacy (Murugan, 2018). Additionally, public institutions offer equal access to all residents and free educational materials to satisfy the community's requirements (Handa, 2019). Nowadays,

people no longer visit libraries for books since portable documents are available (Zaine, 2012). This has badly damaged the society of libraries in the Philippines that still use traditional books. Additionally, the majority of the public libraries in the nation lack digital resources and have obsolete instructional materials, which led to the production of this project proposal. The proposed Hybrid Public Library locale is in Poblacion Road, San Fabian, Echague, Isabela, a facility designed to meet the standards of a contemporary Hybrid Library. This will consist of the technical analysis and the design of structures that will meet the needs of the public. The proposed building has an 1180 square meters floor area with three stories featuring different facilities such as a museum, gallery, computer rooms, AVR, children's area, private user area, and different sections for hundreds of collections of books.

Keywords: Public library, hybrid, libraries

SEAIT-SR-038 

**Glasscrete: Utilization of
Waste Soda-Lime Glass as a Partial Replacement of
Fine Aggregates in the Improvement of Concrete
Strength**

*Trisha Lyka A. Ancheta, Angelica M. Basilio, Jan Angela L.
Iñigo, Ingrid Rose R. Lingayu, & Jefrie T. Alindayu, MSCE*

This study investigated the utilization of green-colored waste soda-lime glass as a partial substitute for fine aggregates in concrete and its impact on its strength. The motivation behind this research stems from the need to address the environmental challenges associated with concrete production and the depletion of natural aggregate resources. The overexploitation of natural aggregates, particularly sand, harms the environment and threatens sustainable construction practices. The problem statement centers around investigating concrete's compressive and flexural strength with varying percentages of glass replacement for fine aggregates. The research aims to

understand the relationship between the glass replacement percentage and the resulting strength properties of the concrete. The approach taken in this study involved mixing and casting concrete specimens according to a class A mixture. Cylindrical and rectangular specimens were produced and subjected to curing for different time intervals. Seventy-two samples were produced to meet the requirements of ASTM standards. The samples were tested for compressive and flexural strength tests. The results indicate that the concrete's compressive and flexural strengths varied with different percentages of glass replacement and curing periods. The compressive strength increased with higher glass replacement percentages, indicating improved concrete's ability to resist compression forces. However, the flexural strength decreased as the glass replacement percentage increased, suggesting a reduced capacity to withstand bending or flexural stresses. In conclusion, this study demonstrates the potential of using green-colored waste soda-lime glass as a partial substitute for fine aggregates in concrete. It provides insights into the relationship between glass replacement percentage and the resulting strength properties of the concrete. These findings contribute to sustainable construction practices by addressing environmental concerns and promoting the efficient use of waste materials in concrete production.

Keywords: Class A concrete, soda-lime glass, fine aggregates, compressive strength, flexural strength,

SEAIT-SR-039



**PANNATOM: A Proposed Public Hybrid Library in
Poblacion Road, San Fabian, Echague, Isabela**

*Enjel Susane T. Balinag, Coralye T. Atenao, Jerome B. Fronda,
& Marvin Ryan C. Ferrer, RCE*

Libraries are institutional buildings where collections of resources and information are kept. It also includes arranging and cataloging, lending resources to those in need, and providing reading spaces and other related activities. Public

libraries are essential to our society because they foster user education and preserve our shared cultural and socioeconomic legacy (Murugan, 2018). Additionally, public institutions offer equal access to all residents and free educational materials to satisfy the community's requirements (Handa, 2019). Nowadays, people no longer visit libraries for books since portable documents are available (Zaine, 2012). This has badly damaged the society of libraries in the Philippines that still use traditional books. Additionally, the majority of the public libraries in the nation lack digital resources and have obsolete instructional materials, which led to the production of this project proposal. The proposed Hybrid Public Library locale is in Poblacion Road, San Fabian, Echague, Isabela, a facility designed to meet the standards of a contemporary Hybrid Library. This will consist of the technical analysis and the design of structures that will meet the needs of the public. The proposed building has a 1180 square meters floor area with three stories featuring different facilities such as a museum, gallery, computer rooms, AVR, children's area, private user area, and different sections for hundreds of collections of books.

Keywords: Public library, hybrid, libraries



SEAIT-SR-040

**A Proposed Greywater System in Barangay San Nicolas
with Treatment Plant at Barangay Luyang, Bayombong,
Nueva Vizcaya**

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Lester F. Ventura, Jossanth D. Vicente, & Dan Kenneth
Lutchina, RCE*

Residents in Barangay San Nicolas have been discharging their greywater to Colocol Creek because the elevation of the disposal site for greywater is higher than the source of greywater itself. There is limited space for canal construction, which is against The Philippine Clean Water Act of 2004 (Republic Act No. 9275). Meanwhile, Barangay Luyang requires clean water for

irrigation, aquatic livestock, and fertilizer. This research aims to create an appropriate greywater system for San Nicolas and a treatment facility in Barangay Luyang. The objective is to enhance sanitation, provide legal greywater disposal options, decrease water pollution produced by barangay San Nicolas, and ultimately assist barangay Luyang in expanding its agriculture and aquatic activities by supplying them with treated water. The study's goals include analyzing the total greywater discharge, developing pipelines, valves, and fittings, and estimating the project's expenses. Additionally, the researchers intend to create a project schedule, specifications, and maintenance plans. The analysis of the site's greywater discharge showed that the total amount of daily wastewater is approximately 400,973.4 liters. The estimated cost, project schedules, specifications, and maintenance plans are compiled to guide the project's timeline, design, construction, and maintenance. The study provides valuable information for constructing sewage treatment plants. Still, limitations exist, such as the study being limited to a single site.

Keywords: Greywater system, treatment plant, pipelines, greywater, management office



SEAIT-SR-041

A Design Structure of a Commercial Parking Complex in Barangay Centro East, Santiago, Isabela

*Jan Laurenz V. Abinuman, Clifford B. Laudencia,
Alexandre R. Padiernos, & Jan Marc S. Sagaysay*

Parking challenges in Santiago City, Philippines, are intensifying due to the escalating use of private vehicles and a surge in registered cars. Inadequate urban planning and insufficient parking infrastructure have led to rampant illegal street parking, causing traffic jams and accidents. The COVID-19 pandemic has exacerbated the situation, with increased demand for parking driven by online shopping and a growing logistics sector,

resulting in a higher volume of delivery vehicles on the roads. To address these pressing issues, constructing a multi-story parking facility in Centro East, Santiago, Isabel, was proposed. This location boasts strategic proximity to key landmarks and 4-lane access roads, making it an ideal site for a comprehensive parking complex. The study's primary objective is to provide essential data on Santiago City's parking challenges, forming the basis for the facility's design. The envisioned multi-story parking complex offers a vertical alternative to conventional surface lots, enhancing vehicle security and alleviating traffic congestion. It prioritizes pedestrian safety and optimized traffic flow. Moreover, the project's adaptability includes accommodating night markets, significantly boosting revenue. This parking complex is designed to serve nearby establishments and those within a 0.125-mile radius. Additionally, this paper addresses the issue of informal tricycle terminals along national highways by incorporating a dedicated space for these terminals within the parking facility's design. The research aims to solve parking challenges, enhance urban planning, and offer valuable insights into vertical construction. The proposed multi-story parking facility aims to enhance transportation and traffic management in Santiago City, ultimately alleviating traffic congestion and enhancing the overall quality of urban living in the region.

Keywords: Santiago City parking building, multi-story parking facility, commercial parking, night market, tricycle terminals

SEAIT-SR-042 

Kapwa: A Proposed Mental Health Facility in Bonfal Proper, Bayombong, Nueva Vizcaya

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This study proposes establishing a mental health facility named KAPWA in Bonfal Proper, Bayombong, Nueva Vizcaya. The facility aims to address the growing need for accessible and

comprehensive mental health services in the region. The proposed research project holds immense significance for the mental health of individuals not only in Bayombong, Nueva Vizcaya but throughout the entire province. The World Health Organization (WHO, 2022) identified mental health services as a global objective, emphasizing the urgent need for accessible and comprehensive care worldwide. As the first mental health institution in Nueva Vizcaya, the outlined planned facility is crucial in providing needed treatment and counseling to needy individuals. It represents a significant step forward in addressing the existing gap in mental health services within the province. The proposed mental health facility, KAPWA, encompasses two main components, namely 1) Outpatient Clinic and 2) Inpatient Ward. The Outpatient Clinic serves as the initial point of contact for patients visiting for consultations or those recommended for assessments related to employment purposes. This clinic acts as a gateway, determining whether inpatient admission is necessary for further treatment. The combination of the Outpatient Clinic and Inpatient Ward allows KAPWA to cater to various mental health needs. This comprehensive approach ensures that individuals receive appropriate and tailored care depending on the severity of their condition, promoting holistic well-being and recovery. By incorporating these distinct areas within the facility, KAPWA aims to provide a continuum of care for individuals seeking mental health services in Nueva Vizcaya, ultimately fostering a supportive and therapeutic environment for their journey toward improved mental health.

Keywords: Clinic, inpatient, institution, outpatient, psychology, ward

SEAIT-SR-043



MAPIA: A Proposed Four-Storey Parking Building and Terminal with Roofdeck at Brgy. Poblacion North, Solano, Nueva Vizcaya

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Angelica Faye A. Roduta, & Michelle Kyra S. Bautista, RCE

MAPIA: A Proposed Four-Storey Parking Building and Terminal with Roofdeck at Brgy. Poblacion North, Solano, Nueva Vizcaya, is a project that aims to provide parking slots to aid the limited parking spaces in commercial establishments and to minimize the practice of on-street and illegal parking on the roads of Solano, Nueva Vizcaya. The total floor area of the project is one thousand one hundred seventy-two square meters (1172) sq. m., which can accommodate four (4), sixty-four (64) motorcycles, six (6) tricycles, and forty-two (42) slots for four-wheel cars on the second, third, and fourth floors. Located in one of the urban barangays that serves as a commercial area and is close to a national highway, making it a convenient place to secure private vehicles. The data gathered contributed to analyzing and computing the required parking slots for vehicles for the proposal's architectural components. Amenities for drivers and passengers are included in the space planning, such as comfort rooms, a control room, a bagger area, a waiting area, and an area for food and beverage stalls for their satisfaction and comfort. Engineering software such as Structural Analysis and Design (STAAD) and Reinforced Concrete Design and Calculations (RCDC) was utilized for the structural analysis. The computation for the cost estimates and schedule of the program of work is done through Microsoft Excel. The final estimated cost of the project is PHP 121,109,271.80, and the project duration is 454 working days.

Keywords: Parking building, terminal, on-street parking, illegal parking, parking slots



SEAIT-SR-044

**Abante: A Proposed Central Terminal at Punawa,
Calaocan, Bambang, Nueva Vizcaya**

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Cabiao, Maria Natividad M. Dela Cruz, &*

Christopher John P. De Vera, RCE

Public transportation terminals are crucial in maintaining the efficacy and convenience of the public transport network configuration. Since existing terminal locations were identified as a traffic bottleneck in the Bambang Nueva Vizcaya transit system, terminal development has been recognized as necessary to remove traffic congestion. All transportation nodes and terminals, including bus stops and jeepney loading/ unloading sites, should be carefully constructed to enable the smooth and safe flow of general road traffic and the effectiveness of public transport operations. The crucial node in transportation systems is the transportation terminal. Effective terminals can, among other things, optimize the assembly and distribution of contemporary logistical modes, improve the operation of passenger transportation networks, change the design of public transportation networks, offer a system for guiding passengers, and control the evolution of commercial forms. This study attempts to establish the function layout design and define the relationship between the function and structure of transportation terminals. The demand, function, and structure mapping processes were investigated, and a quantitative relationship between function and structure was obtained from a design perspective. Passenger demand and terminal structure were split into various demand units and structural elements following the engineering principle. The relationship maps between these two sorts of items were then studied. A function-oriented concept layout model of transportation terminals was built utilizing the prior method. Thus, a technique for planning and design of transportation structures was proposed. Meaningful results were gained from optimizing transportation terminal facilities, which guide the design of the functional layout of transportation terminals and improve the growth of passenger transportation systems.

Keywords: Central terminal, public transportation, parking space, traffic flow, commercial building, and cost estimate

SEAIT-SR-045**A Proposed Multi-Storey with Roof deck Parking Building at Saint Mary's University - College Campus**

Khristal Jennah S. Bautista, Gleanne Mae T. Conti, Charlene D. Francisco, & Aurus Jodeo C. Tiam, MSCE

The population of Saint Mary's University is increasing, as is the number of registered vehicles. With the increased number of vehicles comes an increase in the demand for parking space. This research study presents the design of a multi-story with a roof-deck parking building at Saint Mary's University, specifically on the college campus, addressing issues such as insufficient parking space and no proper parking system. The building design consists of five floor levels. All floors are designed to accommodate 217 regular car sizes and 150-200 motorcycles. With the accumulated data from the data gathered, the conceptual framework of this study will serve as a basis for the analysis of the main and specific objectives. This research study highlighted different data findings in the design and space planning for facilities to achieve the serviceability and efficiency of the proposed building. The total project cost was calculated with P94 895 647.80 and 397 work days. This project entitled "A Proposed Multi-Storey with Roof Deck Parking Building at Saint Mary's University-College Campus" has added amenities such as elevators and stairs for easy ascending and descending of drivers and their passengers. Volleyball courts were also installed on the roof deck of the proposed building.

Keywords: Multi-storey, roof deck, parking building, parking management system, serviceability, efficiency

**SEAIT-SR-046****Design and Development of an Equipment Borrowing System for ECE, EE, and CpE Laboratories**

Vyron Joshua F. Buen, Darrel Jon M. Galapon, John Patrick C. Guanizo, Jeremiah M. Pucayon, & Kenosis B. Wajchina, BSCPE

Systems are now regarded as a marvel of civilization. Processes have become a lot more labor-efficient. It can completely alter procedures, automate processes, and ensure every task is carried out properly. The challenges and complexity of the old methods in practically all aspects are resolved or reduced by the power of ever-evolving technology. In laboratories, borrowing equipment can occasionally be time-consuming and inconvenient due to the procedure. Equipment borrowing will be quick, simple, and reliable through the use of RFID technology. In this project, the primary objective of the equipment is to return equipment using RFID. The system keeps an up-to-date equipment transaction, with specific details like the availability and state of borrowed equipment. RFID reader is used to implement the system. It can detect student ID, instructor ID, laboratory assistant ID, and equipment tags concurrently within a specific range, making it more convenient for students and laboratory assistants. The database was created using Microsoft Access and integrated into the equipment borrowing system using C# programming language. The researchers conducted alpha testing to test the integrity and accuracy of the borrowing system. The collected data showed that the equipment borrowing system could perform with 100% accuracy and integrity during the alpha testing. The researchers were able to design and successfully establish a system that allowed equipment to be borrowed and returned.

Keywords: Borrowing system, database, RFID reader, alpha testing, programming language, equipment accounting system



SEAIT-SR-047

**CAPTSURA: A Face Recognition-Based
Classroom Security**

Mark Kenneth B. Bia, Marc Daniel O. Flores, Vincent Moises G. Pating, & Paulina A. Marzan, MSIT

In schools, it is essential to guarantee the safety and security of

both faculty and students. Traditional attendance monitoring is insecure and inefficient. Face recognition is a biometric technology that has advanced over time and is frequently used in various organizations to boost security. This study shows how face recognition technology can save student information such as name, course, and year while safely verifying their admission to a classroom using a webcam. The system's hardware for recognizing faces is a GSE Gsou T16s Webcam. A database created in Microsoft Excel was joined using the Python programming language. Ten electrical, computer, and electronics engineering students from Saint Mary's University participated in the data collection activities. The participant was registered before the data collection, which was then completed utilizing the tests on various distances that the researchers established. The False Accept and False Reject Rates were obtained to assess the collected data. The collected data was compiled and plotted in correlation to different threshold percentages to obtain an Equal Error Rate, resulting in the face recognition system's accuracy being 85.6546%. This demonstrated how accurate the facial recognition security system was at assessing the safety of students. The researchers successfully developed a system that could recognize students' faces and preserve their profiles along with their time of entry.

Keywords: Biometric, face recognition, false accept, false reject, profile



SEAIT-SR-048

**Biometrics and Alcohol-Detection Reinforced
Technology for Motorcycle Safety System (BARTech)**

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Better Jino M. Bangligan, & Teofilo M. Sagabaen, RECE*

The continuing technological advances interest new developments in different areas of technology, such as technologies involving motorcycle safety systems. By nature,

motorcycles are significantly less crashworthy than closed automobiles. In addition, they are less visible to other cars and pedestrians and less stable than four-wheel vehicles. The most common causes of motorcycle-related accidents are driver negligence, inclement weather, road hazards, and drunk driving. Under driver negligence, motorcycle riders' incomppliance in wearing helmets is one of the main factors. The main objective of this study is to design, develop, and test a smart motorcycle helmet with alcohol detection, fingerprint biometrics technology, security, and lock system for the safety of riders and the general public. This study offers a successful strategy for lowering the rise in the number of accidents caused by drunk drivers. This study will provide a high level of safety and an efficient solution to control accidents caused by drunk driving. With the Smart Helmet and enhanced Motorcycle Safety System as outputs of the study, accidents related to motorcycles will be lessened.

Keywords: Biometrics, fingerprint scanner, alcohol sensor, breathalyzer



SEAIT-SR-049

**Design and Development of Wearable Navigating
Technology for People with Blindness
(Project e-SENSE)**

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Chrisel M. Bautista, Lexa Glizel A. Altre, &
Rojan I. Reyes, RECE*

The study highlights people with visual impairments, prompting the researchers to apply technology to support them. The researchers proposed using ultrasonic wave technology to assist them in moving with speed and confidence by detecting surrounding obstacles. The researchers suggested a system with five ultrasonic sensors comprising three modules affixed to different body areas. People with blindness can move around freely using technology to detect objects in a five-dimensional

view around them. When the ultrasonic sensor detects an obstacle, this device will vibrate and emit audible beeps to notify the user. Furthermore, when the user approaches the obstacle closer, the rate of vibration and beeps increases, and vice versa. Specially built boards and high-quality waterproof ultrasonic sensors were used for faster response. In testing the hypothesis, the accuracy and reliability of the devices were assessed using two-sample T-tests, and the accuracy percentage and percentage errors of the devices were solved. The results showed that all devices accurately measure distances and give the expected rate or frequency of sound and beeps per distance range. Furthermore, the results showed that all the devices are reliable for a significant period when used in vibration and sound mode. People with blindness can benefit from using the device in terms of mobility, independence, and quality of life.

Keywords: Ultrasonic sensors, navigation, detection, wearable, blindness



SEAIT-SR-050

Satsuma Citrus Sorting Machine Using Machine Vision and Neural Networks

Ira Mae L. Carreon, Christian Neil C. Guerrero, Cris Ismael J. Rodriguez, & Angelino A. Pimentel, MSECE

Project CitRush, which seamlessly combines cutting-edge artificial intelligence with citrus growing techniques, ushers in a new age in agricultural technology. CitRush is a ground-breaking citrus sorting solution that upends the established paradigms of fruit quality assessment by utilizing cutting-edge Machine Vision and Neural Networks. This initiative addresses the ongoing issues that the citrus farming sector faces, such as ineffective sorting procedures, high production costs, and inconsistent fruit quality. Using cutting-edge AI algorithms, CitRush properly recognizes and categorizes citrus fruits based on several characteristics, including color and maturity. Its comprehensive dataset, painstakingly curated from various citrus cultivars

across several geographies, guarantees accuracy and adaptability. By lowering food waste, Project CitRush improves sorting efficiency and significantly moves sustainability goals forward. Because of its user-friendly interface, which facilitates training and operation, it may be utilized by agricultural specialists with a range of technical proficiency. CitRush is also designed for remote monitoring, providing real-time performance assessment and issue resolution, saving farmers time and resources. Reduced labor expenses, increased production, and better overall fruit quality result from using CitRush in citrus farming operations. Its beneficial effects on agriculture are consistent with the world's transition to precision farming and sustainable methods. Project CitRush is an outstanding, innovative research project showing how agriculture and AI can work together harmoniously to produce more effectively and ecologically.

Keywords: Machine vision, neural network, artificial intelligence, AI algorithms, adaptability, sustainability



SEAIT-SR-051

Control and Monitor of Electrical Loads in a Classroom Using IoT Technology

Pauline Faye B. Gomez, Clifford Jhon W. Ignacio, Nestor Jay R. Piscoso, Kyle Kenneth Heirol B. Toledo, & Wenson R. Evangelista, REE

The improvement of technologies is prominent now. With this comes various features like automation of devices, such as the Internet of Things (IOT Application), where smartphones can be used to view data. The study created an application program to control and monitor lights, outlets, special purpose outlets (SPO), and orbital fans in a classroom. The study aimed to find an application that security guards can use to turn on/off the devices using the Internet of Things. Data are gathered to see the accuracy of the application in measuring the voltage and current

with the use of PZEM-004T. The study using Internet of Things technology can be implemented into the classroom with a strong and proper internet connection. The study used Percentage Error to test the functionality of the system. A T-test was used to analyze the data gathered, wherein there are no significant differences between the clamp meter and Blynk application, and all the data are less than the critical value of 2.000. The study deduced that the programmed application's accuracy has minimal difference between the voltmeter and the ammeter. Therefore, the studies concluded that it aimed to control and monitor lights, outlets, and orbit fans with Internet of Things technology.

Keywords: IoT, automation, control, monitor, application, classroom



SEAIT-SR-052

ARDUINO-Based Control and Monitoring of Electrical Panel Board

Marianne P. Andres, Philip James M. Bucahan, Angela B. Pulinnek, James Aaron M. Rosario, & Joel T. Mendoza, RECE

This study aimed to create and build an electrical panel board that can be operated and monitored by a mobile application that depends on a Wi-Fi-based system to give the user easier access. The study utilized an Arduino-based system composed of two microcontrollers, Arduino Mega, for monitoring and UNO for controlling. Blynk IoT served as an application platform for controlling and monitoring with a notification feature. The T-test method provided statistical data and analyzed and compared data in two measured values. There was no significant difference between each parameter when values displayed in Blynk IoT and other measuring instruments were compared. The percent error was used to assess the functionality of the project, wherein the prototype successfully performed as expected, and all features resulted in an error percentage of 0.

Keywords: Electrical panel board, arduino-based, monitoring, controlling, parameters, blynk IoT



SEAIT-SR-053

A Proposed Gravitational Water Vortex Turbine in Dumabato Waterfalls

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A. Gatan, Alvin Jae P. Gauuan, & Wenson R. Evangelista, REE*

This study explored the potential construction and use of a gravitational water vortex turbine as a power source in Dumabato Sur, Maddela, Quirino. It also aimed to know the feasibility of using a gravitational water vortex turbine, its cost, and comparison to connecting to the local electric distribution utility. The float method was used to determine the water flow rate in the waterfall. The Capitalized Cost was computed and compared to power costs when connected to an electric distribution utility during the lifespan of a gravitational water vortex turbine at 25 years. The average water flow rate after three trials was 1.65 m³/s. A 5 kW turbine was selected for a maximum power demand of 982.5 W. The Project construction cost is PHP 418,226.95 and has a capitalized cost of PHP 477,059.19 due to annual operation and maintenance costs. The project has a 17.95% rate of return for an annual income of PHP 85,640.76, and a return on investment can be achieved after 10.4 years. The turbine project was also cost-effective compared to connecting to an electric distribution utility for 25 years, costing PHP 591,501.86 for eight households and PHP 2,141,019.12 for 15 households.

Keywords: Gravitational water vortex, turbine, hydro energy, feasibility



SEAIT-SR-054

Solar-Powered and Automated Hydroponics Farming

Using IoT Technology

Catherine V. Cutaran, Allen Paul D. Ilarde, Philip Jude E. Tucay, & Jojo C. Mariano, REE

This study delves into an approach to urban agriculture by developing a solar-powered and automated hydroponics system that utilizes Internet of Things (IoT) technology. The system is specifically engineered for indoor use in urban areas, employing the ESP32 microcontroller and a range of sensors such as BME280, DHT11, HC-SR04, pH4502C, LDR module, and TDS module. These sensors collectively oversee the ambient temperature and humidity, water temperature, water level, total dissolved solids, light intensity, and pH levels, guaranteeing proper management of the hydroponic environment. Implementing a solar photovoltaic system improves sustainability by decreasing dependence on conventional energy sources. This study represents the pioneering introduction of the initial automated Internet of Things (IoT) hydroponics system in Nueva Vizcaya. This study also utilizes the Blynk IoT cloud platform to facilitate real-time monitoring and control, allowing for remote manipulation of the hydroponic settings. By examining the technical elements of system design, implementation, and optimization while also assessing the economic viability of implementing this technology in urban agriculture, the findings make a valuable contribution to the expanding field of smart agriculture by providing a scalable and efficient solution for sustainable food production.

Keywords: Hydroponics, sensors, internet of things, solar photovoltaic system



SEAIT-SR-055

Mobile Waterwheel Generator

Harveyrex Vinzent D. Cabanayan Jebrent B. Damayon, Jaylord Jerell A. Fernando, Allan Paul P. Gonzales, & Jojo C.

Mariano, REE, MBA

This study aimed to design and develop a mobile waterwheel generator that can be deployed in remote areas with an available water source with an observable drop. The researchers have observed that Nueva Vizcaya has a lot of mountains and streams. With the increasing cost of electricity, a proposal for said prototype was presented. Three testing sites were selected, and the collected data is shown in a table. The float method was used to gather information on the water flowing at a given time. Power output was determined by connecting a load to the generator. Amperage was computed by dividing the power output by the voltage, wherein voltage was discovered using a multimeter. The first two trials did not produce positive results until modifications to the prototype were done and the data required was filled. The first site produced 14 volts, 3.8 amps, and supplied a 54-watt load; the second site produced 10.5 volts, 1.7 amps, and 18 watts; the third site produced 12 volts, 6 amps, and 72 watts. The water wheel project has proven to be a feasible renewable energy resource that can supply small loads. The pitchback design has demonstrated that it can produce large torque, and the compact configuration allows it to be mobile and carried by two people.

Keywords: Mobile water wheel, pitchback, generator, renewable energy



SEAIT-SR-056

**A Proposed Electrical System Design of Saint Mary's
University High School Department**

*John Darryll S. Gonzales, Mike R. Macadangdang, Victor
Abcede C. Madalura, Khrystal T. Tomas, & Wenson R.
Evangelista, REE*

The lack of a centralized power source is common in institutions and organizations during development stages. In Saint Mary's University Junior and Science High School, each building relies

on a different service entrance, with some buildings tapping into the service entrance of the nearest electric post. In contrast, others draw their electricity from neighboring buildings. The researchers aimed to develop a Modified Electrical System as a solution. The actual and computed load of each building is used to design the transformer bank needed to supply the school appropriately. Alberto building has the highest load current, measured at 39.6 amps; the difference in actual load measured on buildings lies with the number of installed electrical equipment and usage, size of buildings, and occupancy. On the other hand, the Florentina building has the highest computed load current of 160.6 amps because the building has computer sets and a library installed with air conditioning units. To appropriately design the transformer bank, the researchers used the computed load for each building. Whereas to compute for the highest phase current and attain a balanced distribution of loads, the demand of each building had been distributed across the transformer. In line with this, the modified electrical system will supply 3-37.5KVA, as the campus load was 92.8KVA. The bill of quantities of materials to be used in the modified single-line diagram of the electrical system was ₱ 1,217,503.

Keywords: Centralized power source, computed load, electrical system, service entrance, single-line diagram



SEAIT-SR-057

**Digital Archiving and Preservation of Saint Mary's
University Research**

*JC Ron Miguel D. James , Calvin D. Ferrer, Kliford A. Balgos,
Adonis V. Garces, DIT*

Research works are an important body of knowledge. Thus, they should be organized and kept secure for future reference. However, organizing and archiving research poses some challenges. This study aimed to design a system for easier organization, management, and archiving of research outputs. To address the objective of this study, the researchers identified

the practices and challenges encountered by the University Research Center and the University Learning Research Center in organizing, monitoring, and archiving student research outputs that will serve as the basis for the system design. A structured survey questionnaire found that the URC and the ULRC organize students' research output in hard-bound papers, Compact CDs, and research journals. The challenges encountered in organizing and archiving research outputs include limited space for filing hard-bound copies, availability of CD readers, unreadable CDs, and misplaced CDs. Hence, a more organized and systematic way of organizing, monitoring, and archiving research output has been developed. Based on the evaluation of IT experts, students, and the URC, the systems developed comply with ISO 25010 Software Quality Standards regarding Functional Suitability, Performance Efficiency, Compatibility, Usability, Reliability, Security, Maintainability, and Portability.

Keywords: Research management, archiving, quality standards



SEAIT-SR-058

A Mobile Recipe Application for Meal Preparation and Meal Planning

Seenivasagam, Jean Rae V., & Taborda, Rogie B., MIT

People spend less time at home as they get busier at work. There isn't enough time to plan meals, much less cook them. A mobile recipe app can help with these needs. Unfortunately, there aren't any existing Filipino recipe apps that can cater well to these needs. Almost all the Filipino recipe apps on the Play Store are completely outdated regarding UI and functionality. Hence, the research aims to develop a mobile recipe app primarily catering to Filipino households. The study used a questionnaire to gather relevant data on factors and practices regarding meal preparation and planning among students, teachers, and restaurant owners. Data gathered from the study participants were examined, compiled, and evaluated to answer the

objectives of this study. The factors that were found to affect meal planning are a busy schedule in terms of time, a busy schedule in terms of the family eating together, the COVID-19 pandemic, a busy schedule in terms of the type of meal that can be planned, and diet. In terms of meal preparation, availability of ingredients, busy schedule in terms of the type of meal that can be prepared, busy schedule in terms of time, lack of ingredients, availability of cooking utensils, having the help of family members, and knowledge in cooking are the common challenges. Common practices in terms of meal planning include scheduling meals at home, having family members cook at home, and having some family members eat at home. Common practices in terms of meal preparation include family members who help in the kitchen, role in meal preparation, Filipino dishes (such as breakfast, lunch, dinner, and dessert dishes) that are eaten at home, and cooking utensils used at home. Thus, a mobile recipe app was developed using Android Studio, Adobe XD, Zeplin, Photopea, ClickUp, Android Studio, and Kotlin programming language. The participants found the mobile recipe application useful in meal planning and preparation. Through the app, users could search from a list of pre-installed recipes, add and save recipes, and schedule meals on a calendar.

Keywords: Mobile recipe application, meal planning, meal preparation



SEAIT-SR-059

Project BEVY: A Promotional System for Nueva Vizcaya Supplier Association

Mike Jovant D. Bautista, Donald D. Calma Jr, Alldriv Zim S. Cuenca, Andrei Hector C. Fariñas, & Rogie B. Taborda, MIT

Project Bevy, a Progressive Web application for registered members of Nueva Vizcaya Suppliers Association, is a promotional platform that allows suppliers to promote their

products and services and enables clients to browse faster to find a supplier they need. Hence, this research was conducted to help the Nueva Vizcaya Supplier Association members promote their products and help consumers easily find them in just one click. To attain the study's objectives, the researchers used descriptive and developmental methods to develop and test the system's possible features and functions and identify the current practices and problems encountered by Nueva Vizcaya Suppliers Association members. The system has been developed using React JS. The researchers believe that the system's features and function are consistent and will help promote the products and services of a Nueva Vizcaya Suppliers Association member.

Keywords: E-commerce, rapid application development, promotional system, event supplier

SEAIT-SR-o6o 

Pa-Dala: An Online Errand Service for Consumers.

Kim Paolo Salgado, James Azli Umayam, Nicomario Angelo Raza, Hendrix Macababbad, & Rocel Audrey Batara, BSIT

Pa-Dala: An Online Errand Service for Consumers is a Progressive Web Application allowing consumers to book a rider for errands. Specifically food delivery, door-door delivery, custom errands, and paying bills. It allows riders to fulfill the orders of the consumers if they deem it appropriate, and the admins can oversee the transactions. The researchers aim to create a platform dedicated to erranding services to help consumers with their everyday errands and give riders an income. To attain the study's objectives, the researchers used descriptive and feature-driven development to identify the current processes and problems encountered in the current erranding service process. The system has been developed using React JS. The researchers believe that the features and functions of the system are consistent and will help build a better platform for erranding services.

Keywords: Progressive web app, react js, errands, delivery



SEAIT-SR-061

Candidates for Graduation Dissemination System (CDGS) of the Registrar's Office of a Higher Education Institution in Nueva Vizcaya: A Web Application

Justine Paula R. Balanay, Warren C. Lacaden, Jan Dee A. Paragas, John Vincent Pataweg, Gertrude G. Danao, PhD

The Candidates for Graduation Dissemination System (CDGS) of the Registrar's Office of a Higher Education Institution in Nueva Vizcaya: A Web Application provides the candidate for graduation with the necessary information regarding their deficiencies in both academic and non-academic. This system gives accurate information on what is needed to be accomplished by the students who are candidates for graduation. Furthermore, it allows the student to access the web application anywhere, for it is deployed online, giving more convenience to the candidates for graduation. To do the overall process of the project, the researchers utilized Rapid Application Development for immediate results of the project and for any changes that the client needs for the same reason that it can meet the expected requirements of the system. It also results in successful feedback to the users of the CDGS. The system itself is developed through the Laravel framework and bootstrap. With this web application, the students will have more time to deal with their deficiencies and graduate on time.

Keywords: Academic, non-academic, real-time, deficiency, dissemination, graduating, deadline, curriculum, information dissemination



SEAIT-SR-062

Guidance and Counselling Management Information

System of Guidance Testing Office

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Information Systems offer an efficient and digital way to store and analyze data without wasting time and with data readily available at a moment's notice. Saint Mary's University's Guidance and Testing office has faced problems with its workflow due to the analog and needlessly complex structure of how it handles its records and data. Most of their methods, such as data archiving, rely heavily on printed forms and physical printed records. And since data is in the physical form, any meaningful analysis would require them to re-encode all individual sheets into a spreadsheet file manually. The GCM-IS (Guidance Counseling Management and Information System) aims to alleviate if not outright remove, any issues found in their existing system. Execution of the study and development followed a RAD Methodology (Rapid Application Development) for the overall method of developing the web-based information system. The GCM-IS and its features have been developed to address the issues that the study identified and offer a practical system for analyzing and storing student data. It provides a flexible, digital, and modern way to handle data and can be used for further analysis if required.

Keywords: Web server, Code igniter



SEAIT-SR-063

ParaBookNa: A Progressive Web App Booking Application of Nueva Vizcaya Paragliding

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ParaBookNa, a Progressive Web Application for Nueva Vizcaya Paragliding, allows customers to book a time-efficient and convenient service to reserve a slot. It also allows the admin to

control and confirm customers' bookings. The researchers aim to have a progressive web application to help the admin and the customer lessen the hassle of booking in Nueva Vizcaya Paragliding. Rapid Application Development methodology was used to attain the study's objectives, including the four phases: Requirement Planning, Design, Construction, and Cutover. Also, the researchers used descriptive methodology to identify the current processes and problems encountered by Nueva Vizcaya Paragliding and its customers. The system has been developed using React JS. The researcher utilized the Progressive Web App to develop the booking application, allowing users to access the system in the web browser and save it on their mobile phones. With these, the admin who manages the system and the customers found the system functionalities useful and user-friendly.

Keywords: Progressive web app, react JS, Nueva Vizcaya Paragliding, booking



SEAIT-SR-064

A Web-Based Information Management System of Lingkod Maria Community Development and Advocacy Center

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Beatriz J. Vallejos, & Rogie B. Taborda, MIT*

The Web-Based Information Management System of Lingkod Maria Community Development and Advocacy Center is a Web-Based System that allows the Lingkod Maria Community Development and Advocacy Center (LMCDAC) to easily manage and retrieve necessary information of employees regarding their accumulated extension points for their performance evaluation for the current school year including the students. The researchers aim to make it easier for the LMCDAC to retrieve information on employees' extension activities and easily manage/keep their records. The researchers used the Scrum

framework to develop the LMCDAC system. The Agile Scrum Development consists of the product backlog, sprint planning, sprint backlog, scrum meeting, daily scrum, sprint execution, sprint review, testing and product demo, retrospective, and next sprint planning. The researchers also used descriptive and developmental research methods to develop the system. The descriptive method allowed the researchers to obtain sufficient data through a survey questionnaire to achieve the goals and objectives. The researchers utilized the developmental method to effectively design, develop, and evaluate the system's processes in accumulating employee extension and outreach activities in adherence to internal consistency and effectiveness standards. The system has been developed using PHP Laravel. The researchers developed a web-based system to allow employees to access it through the web browser and submit their filled-in forms regarding their extension and outreach activities. With these, the LMCDAC will benefit from having a system for a centralized repository of the submitted forms.

Keywords: Web-based system, LMCDAC, agile scrum, PHP Laravel



SEAIT-SR-065

Web-Based Medical Record Management System of Bambang National High School

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J. Batara, BSIT*

The web-based Medical Record Management System of Bambang National High School is a system that allows users, such as nurses or school administrators, to add medical records and generate reports for clients. The system used a local host network and was only designed within the school area range. The researcher's goal is to make a system for Bambang National High School clinic to manage and generate their report using the system or modern technology. The system was developed using a

code igniter. The researchers believe that this system will help the school's clinic easily manage and generate the records of their clients with ease. Furthermore, it will reduce the damage and loss of their files and forms in the school clinic.

Keywords: Web-based, local host network, manage



SEAIT FACULTY RESEARCHES

SEAIT-FR-01

Information Technology Teachers and Students’ Acceptability of Open Education Resources (OERs) Using the Diffusion of Innovation Theory Towards the Adoption of a Flipped Classroom

*Gertrude G. Danao, Rogie B. Taborda, Rocel Audrey J. Batara,
& Mabel D. Mamaoag*

This research aimed to determine the acceptability of IT teachers and students in a higher education institution to use Open Education Resources (OERs) for teaching and learning. It used Roger’s Diffusion of Innovation theory attributes of relative advantage, compatibility, complexity, triability, and observability to determine its adoption acceptance. The researchers used two separate questionnaires, one for the faculty and another for the students. The two questionnaires used a Likert scale with “4” as a number that represents strongly agree and “1” for strongly disagree. Responses from the IT and Computer Engineering faculty and IT students were analyzed using mean and standard deviation. The one-way ANOVA was used to determine if there was a significant difference between the faculty members’ responses when grouped according to years of teaching experience. One-way ANOVA was also used to determine the significant difference in student’s responses when grouped according to year level. The results revealed no significant difference in the responses of the faculty when grouped according to years of teaching. Similarly, the results showed no significant difference in the students’ responses when grouped according to year level. The study results were used as bases for developing the OER-based flipped classroom syllabus, which will serve as the model for the IT and Computer Engineering faculty OER training, which is the first step towards adoption and utilization.

Keywords: open education, innovative teaching approach, free educational resources



SEAIT-FR-02

AI-based Predictive Supply Chain Solution with Automatic Mobile Notification System

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Joel T. Mendoza, & May Paulene A. Juan*

The effective management of supply chain activities can have a big impact on the profitability and performance of the company. In any business, significant loss would result from the over- or underproduction of a specific product. It has been demonstrated that using artificial intelligence (AI) and the Internet of Things (IoT) can enhance the performance of supply chain systems. This study aims to develop an AI-based predictive supply chain solution with an automatic mobile notification system to enhance the production of customized bamboo tumblers. The study used a product development process to build a hardware and software platform that performs feature extraction, trains an AI model using machine learning algorithms, and notifies users of real-time supply chain data via a mobile notification system. The study was conducted in Saint Mary's University's Technology Transfer and Business Development Office. The Jupyter Notebook, Raspberry Pi OS, and Minitab statistical software were used as study tools. As production data were acquired, there were no research participants. Different machine learning algorithms were examined to find the top-performing algorithm since the study aimed to evaluate the system's accuracy and dependability. The findings demonstrated that the Random Forest (RF) Machine Learning Regression Model with hyperparameter tuning and ensemble learning ($R^2=72.07\%$, $\square 7$ times, $y = 1.05+0.47x$) was the most effective AI model. The derived "Just-in-Time" buffer inventory was found to range from 2 to 13 custom bamboo tumblers, and it was capable of notifying users of real-time supply chain data via a mobile notification system.

Keywords: Just-in-time system, internet of things, machine learning algorithms, custom bamboo tumblers



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SCHOOL OF
HEALTH AND NATURAL SCIENCES
(SHNS)

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SHNS STUDENT RESEARCHES

SHNS-SR-01

Reasons for Using and Level of Awareness on the Content of Vape and Its Effects on Health among College Students

*Ma. Cristina Joyce T. Salazar, Nicole Ann O. Cadiente,
Alezandrea Glyca O. Garcia, Rajima D. Natividad, Zyle Ruth
Xyza C. Palantag, Geraldine Y. Ferreras, RN, MSN*

Electronic cigarettes, also known as e-cigarettes or vapes, have been lauded as a possible method of harm reduction for adult smokers looking for alternatives to conventional tobacco products, leading to heated discussions within the field of public health. While considered by some as a safer alternative to traditional cigarettes, regulatory bodies warn against their usage due to insufficient evidence regarding safety and effectiveness. Additionally, college students, characterized by unique stressors, peer influences, and resources, exhibit diverse vaping behaviors. Thus, comprehending their motivations and knowledge of vape content is crucial for tailored interventions, health education, and policy formulation. This study at Saint Mary's University of Bayombong, Nueva Vizcaya, aimed to determine college students' reasons for vaping, their awareness of vape products' ingredients, and their effects on health. Findings revealed that students primarily vape for stress relief and are generally aware of vape ingredients and health effects. However, there are variations in the level of awareness among students, highlighting the need for targeted educational interventions. An informative pamphlet was created to educate students about vaping's components, harmful effects, and alternative quitting methods, with continuous improvement aimed at strengthening awareness and correcting misconceptions.

Keywords: Adolescent, e-cigarette components, perception, university students, vape usage

SHNS-SR-02**Perceived Level of Knowledge and Compliance with Infection Prevention and Control of Nursing Students**

Skye Jane B. Cal-Ing, Lea Mae B. Atad, Jeremiah P. Salvador, Elijah Dominique Sta. Ines, Marissa Lyn A. Labangcoc, MSN

The level of knowledge and compliance with infection prevention has already been introduced in the Philippines for many years, but the effectiveness of IPC (Infection Prevention Control) education methods in promoting compliance with IPC protocols remain a subject of ongoing debate. The study aimed to determine the perceived level of knowledge and compliance to IPC of Nursing students at Saint Mary's University. The descriptive correlational and comparative design was utilized to determine the relationship between the respondents' level of knowledge and the number of hospital duties attended to their level of compliance to IPC and to examine differences between the respondents' methods of IPC education and level of compliance to IPC, respectively. Through a stratified random sampling technique, 232 nursing students participated. Results indicate a high level of knowledge and compliance with IPC among nursing students, suggesting a positive correlation between knowledge and compliance. However, no significant relationship was found between the number of hospital duties attended and compliance with IPC. There were no significant differences in compliance among different IPC education methods. Hence, nursing students clearly understand the risks associated with infectious diseases and the potential consequences of non-compliance. This knowledge motivates them to prioritize IPC, particularly when they attend to their clinical duties. Future research should explore factors beyond knowledge, such as attitudes and beliefs, that may influence compliance with IPC protocols. Further investigation into nursing students' knowledge and compliance with other standard precautions beyond hand hygiene, PPE use, and waste disposal is also recommended.

Keywords: Compliance, hand hygiene, knowledge, standard

precautions, waste disposal



SHNS-SR-03

Related Learning Experience of Nursing Students

Chelsea Kate S. Jorge, Paul Harvey D. Llamas, Jel Ann M. Scott, Lester F. Zingalawa, Sherylou A. Benig, PhD

Nursing education must integrate theoretical learning with practical experiences to equip students with essential skills and knowledge for future healthcare professional roles. The Related Learning Experience (RLE) is a pivotal component of nursing education, providing students with opportunities to apply theoretical knowledge in real-world healthcare settings. While RLE offers invaluable learning opportunities, it also presents challenges that can significantly impact students' learning and professional development. This study aims to thoroughly explore the experiences of Bachelor of Science in Nursing (BSN) students during their Related Learning Experience at Saint Mary's University during the academic year 2023–2024. Specifically, it investigated students' positive experiences, challenges encountered, and coping mechanisms employed in navigating these challenges. A qualitative phenomenological approach was employed to gain an in-depth understanding of nursing students' experiences. Semi-structured interviews were conducted with 20 BSN students enrolled in the program's second, third, and fourth years. Data were analyzed using thematic analysis to identify common patterns and themes. The study revealed that nursing students encounter many positive experiences, professional growth and confidence, and learning and skills development during their RLE. However, they also face RLE expectations and the initial transition to clinical practice. Hence, students employed various coping mechanisms to navigate these challenges, including seeking support and guidance from the Clinical Instructor (CI), group support and collaboration, social and emotional support, and self-directed learning. It is evident that nursing students' experiences in RLE courses significantly contribute to their professional development and preparedness for clinical practice. By

understanding these experiences and implementing supportive measures, nursing institutions can enhance students' learning outcomes and promote their resilience in navigating the challenges of clinical placements. Based on the study findings, it is essential to further integrate practical experiences into the curriculum, implement support systems for students, and foster mentorship programs to enhance students' adaptive strategies and resilience in RLE courses.

Keywords: Challenges encountered, clinical experiences, clinical placement, coping mechanism, nursing education



SHNS-SR-04

Level of Awareness on Reproductive Health Among Adolescents of Vista Hills

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Awareness of reproductive health and its various aspects is notably present in the Philippines, as indicated by other studies (Asio, 2019). However, topics revolving around sex remain to be considered taboo at a regular Filipino home (UPPI, 2022). The study gathered the data through a survey questionnaire. Sixty-seven (67) respondents were included in the study, and their demographics, such as age, sex, religion, whether they are attending school, and sources of information on reproductive health were determined. Their level of awareness regarding reproductive health topics was analyzed, as well as its possible correlation to the demographics above. For the analysis, the study utilized the Mann-Whitney U-Test to assess whether there is a significant difference between the level of awareness when grouped according to sex and educational status. In contrast, the Kruskal Wallis Test assessed the significant difference in awareness when grouped according to age, religious affiliations, and source of information. Findings showed that there are

generally high levels of awareness across various aspects of reproductive health. Furthermore, the study revealed no significant difference in the level of awareness when participants were grouped by age, sex, or religious affiliation. However, the study did show a significant difference in awareness levels when respondents were grouped according to their educational setting, as the respondents who were not attending school had higher median scores regarding awareness levels.

Keywords: Pregnancy, contraception, sexually transmitted infections, sources of information, sex education



SHNS-SR-05

Nurturing the Future of Nursing: Student Motivation and Perception of the Nursing Profession

Unida, Anabel U., Vejandre, Rachelle Anne V., Portilla, John Mart J., Naguiat, Jhastine Grace M., Sado, Myla Karyle L., Ferreras, Geraldine Y., MSN

The pandemic has impacted the nursing field, leading to a shortage of nurses and a decline in enrollment. However, there has been a sudden increase in nursing enrollees post-pandemic. This qualitative descriptive study aimed to explore the motivations of nursing students enrolling in the BSN programs and to understand the perceptions of nursing students regarding the responsibilities and demands of the job. Fifteen first year nursing students at Saint Mary's University for the academic year 2022-2023 participated in the individual face-to-face interview. The transcribed data were analyzed thematically. Nursing students' motivations for pursuing a BSN program revealed four themes: Personal Interest, Financial Stability, Career Stability or Job Security, and Parental Influence. Before enrolling in the BSN program, nursing students' perceptions are based on four themes: idealized portrayals, academic rigor, care companionship, and nurture navigator. After enrolling in the BSN program, nursing students' perceptions are challenging careers, mental and physical demands, expanded career

horizons, diverse fields, and patient advocacy. The study concludes that nursing students are influenced by their family members, especially parents, siblings, and close relatives when enrolling in nursing programs. Before enrollment, students perceive the nursing profession as an easy degree, attributed to society's influence and misconceptions. They perceive nursing as a challenging career that demands time, physical capability, and strength. Students' perceptions and motivation influence how they perceive the nursing profession.

Keywords: Nursing program, nursing responsibilities, challenges, family influence, stability, fulfillment



SHNS-SR-06

The Impact of Nutritional Intake and Meal Skipping on the Academic Performance of Third-Year Nursing Students at Saint Mary's University

Darwin Hanes G. Salviejo, Kristine Joy E. Baler, Crizel Grace M. Bunagan, Mary Juliene M. Calpito, Precious Penelope F. Javier, Joman J. Baliton, PhD

Nutrition is one of the basic factors that can contribute to a person's overall well-being. Nutritional intake can be classified as balance and imbalance and can also be affected by skipping meals. Hence, nutritional intake can affect several areas of a person's life, including students' academic performance. This study aims to determine the correlation between nutritional intake and skipping meals and the academic performance of third-year nursing students at Saint Mary's University, Bayombong, Nueva Vizcaya. The Quantitative approach using Pearson's r-correlation was utilized in this study. A total of seventy-seven nursing students participated in the study using the total population sampling method. Based on the preceding research, the demographic profile of the respondents predominantly consists of females aged 20-21 years, with heights ranging from 5 to 5.99 feet and a notable tendency to skip breakfast. The respondents have a commendable academic

achievement, reflected by a general weighted mean of 81.75% and a standard deviation of 2.17%, categorizing their performance as "good." However, an imbalance in nutritional intake was observed among the nursing students, with deficiencies in most essential food groups except dairy products and an excess consumption of chips and sweets. The correlation analysis indicates no significant relationship between nutritional intake and academic performance, nor between the frequency of meal absences and academic achievement. To enhance the nutritional knowledge and practices of nursing students, it is recommended to collaborate with nutritionists to strengthen the Nutrition and Diet Therapy program. Additionally, conducting a detailed analysis of the students' nutritional intake through methods such as 24-hour food recalls or food diaries and investigating the reasons for meal skipping will provide valuable insights.

Keywords: Educational progress, diet therapy, eating habits, health, nourishment.



SHNS-SR-07

The Relationship Between Hypertension Self-Care Profile and Demographic Factors among Elderly Individuals

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Hypertension is a leading global health burden, contributing to 7% of disability-adjusted life years. Its prevalence increases with age, especially among the elderly, elevating the risk of cardiovascular diseases and mortality. This study explores factors influencing hypertension self-management in older adults. It examines how these factors interact with demographic and health-related variables to enable tailored interventions that enhance self-care and mitigate consequences. A quantitative, descriptive-correlational methodology assessed participants'

demographics and explored factor relationships. Conducted in Barangay Salvacion, Bayombong, Nueva Vizcaya, the study involved 90 participants aged 60 and older who had managed hypertension for at least six months, selected through stratified random sampling. Results indicated a demographic skew towards younger elderly, significant female representation, and a prevalence of individuals with normal body weight. Unemployment was common, especially among housewives, with most lower to middle-income bracket participants. A majority had a family history of high blood pressure and frequently practiced self-care, emphasizing the role of motivation and confidence in hypertension management. The study found no significant relationship between age or BMI and self-care behavior. However, there was a weak negative correlation with economic status, indicating that self-care frequency slightly decreases as economic status rises. Similarly, no significant correlations were found between self-care motivation and age or BMI. Nonetheless, a strong negative relationship with economic status suggested that motivation decreases with increased economic status. Additionally, while self-efficacy showed no significant correlation with age or BMI, there was a moderate negative relationship with economic status, implying that confidence in controlling hypertension declines as economic status increases. In the Philippines, hypertension is a major health risk for the elderly, with insufficient self-care practices contributing to its prevalence. The significant impact of socioeconomic status on motivation and self-efficacy underscores the need for customized interventions that consider economic factors to promote effective hypertension management.

Keywords: Behavior, geriatric, health maintenance, high blood pressure, motivation, self-efficacy



SHNS-SR-o8

**Nursing Students' Perceptions of Their Learning
Environment: Basis for an Enhanced Learning**

Environment for Their Laboratory Skills Acquisition

*Acoba, Rachelle Mae E., Dela Cruz, Karyle V., Oligan,
Michelle R., Topinio, Niña Fe T.,
Robert S. Aceret, MA*

The quality of the learning environment plays a pivotal role in shaping the effectiveness of any educational program, directly influencing student learning, motivation, and, ultimately, academic outcomes. Students' perceptions of their learning environment can guide adjustments to ensure quality education and suitable associated skills acquisition. This study determined the level of perceptions of the first- and second-year nursing students surveyed about their learning environment, particularly in their laboratory skills acquisition under the School of Health and Natural Sciences with face-to-face classes at Saint Mary's University. Dundee Ready Education Environment Measure (DREEM) inventory was used for face-to-face data gathering. Quantitative research design was used, specifically employing the descriptive-comparative research design to describe the demographic profile of the respondents and determine their perceptions of the learning environment. Additionally, a comparative research design was used to analyze significant differences in the levels of perception based on respondents' demographic profiles. A total of 252 respondents from first- and second-year levels were selected through purposive sampling. Of 252 respondents, 166 (65.9%) perceived their learning environment as more positive than negative, with an overall mean DREEM score of 146.05. Furthermore, the overall perception varied significantly based on age and with all the five subdomains of the DREEM; only perception of atmosphere showed a significant difference when comparing the respondents' and the domains' profiles. There was a significant difference in perception between the First- and Second-year students across five subscales ($p=.040$) except for perception of learning, teaching, and academic self-perception. However, there was no significant difference in sex and socioeconomic status. The findings of the study established a statistically significant difference in perception across age groups and between first- and second-year nursing students. Despite the

generally positive perception of the learning environment of the surveyed nursing students, there are still areas that require improvement to achieve excellence in their laboratory skills acquisition.

Keywords: Academic perception, clinical learning environment, performance, quality, satisfaction



SHNS-SR-09

Stress Experience and Coping Mechanisms of Female Inmates in BJMP: Implications to Correctional Nursing

Nicole Angelu S. Aranda, Jeshierlyn P. Baua, Rinoa Lei S. Guntalilib, Janelle V. Pasamonte, Joman J. Baliton, RN, PhD

The stress experienced by female PDLs within correctional facilities is significant but often overlooked issue. This study delves into the stress experienced by female PDLs at BJMP Curifang, Solano, Nueva Vizcaya and examines their coping mechanisms. This study explores the stress experiences and coping mechanisms of female PDLs, applying Callista Roy's Adaptation Model (RAM) to understand their adaptive processes. PDLs face unique stressors such as confinement, separation from family, and the dynamics of prison life. RAM's framework, which includes stimuli, coping processes, and adaptive modes, provides a comprehensive approach to analyzing how these stressors are managed. This study is focused on a qualitative study, which is a purposive sampling technique having three guided questions to be answered by 10 female PDLs. The findings reveal that female PDLs encounter various stressors, including interpersonal conflicts, separation from family, delays in legal proceedings, and challenging prison environments. To cope with these stressors, PDLs employ a range of strategies, including emotional introspection, physical activities, religious involvement, and seeking support from peers and family. Based on these findings, proactive recommendations are proposed to address the identified stressors and enhance

coping mechanisms. These recommendations include implementing conflict resolution programs, facilitating regular family contact, providing mental health support services, organizing group activities, encouraging physical exercise, fostering peer support groups, and facilitating religious practices within the facility. Overall, this study sheds light on the unique stressors faced by female PDLs and provides valuable insights for correctional institutions and healthcare professionals to develop targeted interventions aimed at improving the mental well-being and rehabilitation outcomes of female PDLs. This research highlights the significance of adopting a holistic approach to PDL care, recognizing and addressing the complex nature of stress and adaptation within correctional environments. The insights derived from this study stress the necessity for continuous support and the establishment of comprehensive programs aimed at improving the adaptive abilities of female PDLs, thereby enhancing their overall well-being and facilitating their successful reintegration into society.

Keywords: Stress, Person Deprived of Liberty (PDL), Coping mechanism



SHNS-SR-010

Cultural Awareness Among Nursing Students

Bautista, Jhonalyn D., Cabbigat, Christine Mae B., Coronado, Mathew L. Mangagil, Danica Maureen M., Salagubang, Nathane Loreleen B., Peter-Tom A. Callang, MAN, RN

Recognition, understanding, tolerance, and appreciation of the differences and similarities between and among cultures is cultural awareness, which is increasingly needed in our globalized world, especially within the healthcare setting. This research study investigated the level of cultural awareness among nursing students of the School of Health and Natural Sciences of Saint Mary's University, highlighting its importance in delivering effective and compassionate health care in a diverse society. Utilizing a descriptive-comparative research design, the

Cultural Awareness Scale was administered to 232 sophomore, junior, and senior nursing students. The same study employs a quantitative method, supported by a qualitative method through one-on-one interviews, to measure and compare cultural awareness across profile variables. Findings showed that the level of cultural awareness among sophomore, junior, and senior nursing students is moderately high (Mean= 5.07; SD=0.59). Respondents' age, year level, religion, and ethnolinguistic affiliation have no significant difference with regard to their level of cultural awareness. Socializing, clinical experience, and lectures were identified as primary factors enhancing nursing students' cultural awareness. Recommendations for enhancing the nursing curriculum to improve cultural awareness include modifying nursing subject courses, innovating clinical instructor training, and organizing cultural awareness workshops and programs/activities. Findings underscore the critical importance of cultural awareness for nursing students. Emphasis is given weight to the need for continuous cultural education and training to cultivate a healthcare workforce respecting and celebrating cultural diversity in pursuit of optimal patient care.

Keywords: Clinical experience, cultural diversity, ethnolinguistic affiliation, nursing curriculum, optimal patient care



SHNS-SR-011

Perceived Clinical Competency in the Quality Nursing Care of Junior Marian Nursing Students

Princess Vallerie F. Catatuya, Kyra Zyan T. De Guzman, Sherie Jane R. Feria, Mary Heart D. Tolenada, Geraldine Y. Ferreras, RN, MSN

Clinical competency is essential for nurses to deliver quality nursing care to patients, which encompasses having both knowledge and accompanying skills. This study aimed to determine the perceived clinical competency of the quality of nursing care of Junior Marian nursing students as perceived by

students and their clinical instructors (CIs). The researchers utilized an adopted questionnaire, the A Structural Equation Model on the Attributes of a Skills Enhancement Program Affecting Clinical Competence of Pre-Graduate Nursing Students, which was distributed among two hundred (200) enrolled nursing students in the Related Learning Experience (RLE) program and twenty (20) Clinical Instructors (CIs) from the third (3rd) year level at Saint Mary's University. Data were analyzed using a T-test. The findings show that the Junior Marian nursing students perceived that they are knowledgeable and skilled in the quality of nursing care along with nursing professional behaviors, core nursing skills, and general performance, except for advanced nursing skills, which they are not knowledgeable but skilled (3.75 ± 0.43). Furthermore, the CIs perceived that the Junior Marian nursing students are knowledgeable and skilled in the quality of nursing care along with nursing professional behaviors and general performance, except in core nursing skills and advanced nursing skills, in which they are not knowledgeable but skilled. This study recommends that the School of Natural Health and Sciences enhance nursing practice, education, and future research. For nursing practice, the results can aid in structuring a standard of care, promoting personal and professional growth, and incorporating evidence-based decision-making. For nursing education, the study suggests further investigation and improvement of specific skills, such as shift reports and tracheostomy care. Future researchers are encouraged to conduct long-term follow-ups and gather more diverse data to strengthen the evidence.

Keywords: Advanced nursing skills, clinical competency, core nursing skills, general performance, nursing professional behaviors, Related Learning Experience (RLE)



SHNS-SR-012

In Vitro and In Vivo Analyses of the Antifibrinolytic

Activities of Billy Goat Weed (*Ageratum Conyzoides*) In Albino Rats

*Vera L. Bato, Jubilee N. Batton, Jerline Kate M. Butay, Faren
Brithnie N. Calingayan, Gian Kate M. Inobiahn, & Elsa L.
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Ageratum conyzoides (Asteraceae), commonly known as Billy goat weed, has enormous significance in therapeutic and ethnomedicinal uses and possesses a hemostatic effect that has been proven preclinical, either in the form of decoction or extract. With the hemostatic activity of *A. conyzoides*, this study evaluated its antifibrinolytic activity using a quantitative, comparative-experimental research design using *in vitro* and *in vivo* analyses in albino rats. The study showed that the highest dose of *A. conyzoides* with 75 mg/kg exhibited the greatest reduction in bleeding time compared to the positive control using tranexamic acid (TXA), which came second. For *in vitro* analysis using Euglobulin clot lysis time, the positive control and test group have no significant difference, with a p-value greater than 0.05. This suggests that the *in vitro* analysis of *A. conyzoides* extract is comparable to that of TXA, which has the same efficacy. Similarly, the *in vivo* analysis showed that the bleeding time of the different concentrations of the test group and the positive control has no significant difference, having a p-value of greater than 0.05, indicating that the efficacy of the positive control and the plant extract when subjected to *in vivo* analysis, is the same. Based on the findings, *A. conyzoides*' extract can be a basis for developing a therapeutic drug that manages cases of excessive bleeding. Still, it is recommended to explore its immunogenicity to prevent adverse immune reactions that can lead to clinical consequences.

Keywords: Bleeding disorders, bleeding time, euglobulin clot lysis time, tranexamic acid, clotting factors



SHNS-SR-013

Fractionated Tannins And Starch From Taro

(*Colocasia esculenta*)
As An Alternative Clot Activator And Serum Separator
For Non-Protein Nitrogenous Compounds

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In response to the emerging demand for a cost-effective blood coagulant and gel separator, this study explores the potential of tannins and starch extracted from Taro as alternative clot activators and gel separators in serum separator tubes. These tubes are used to determine ammonia, blood urea nitrogen, blood uric acid, and creatinine. Employing a quantitative-experimental methodology, the research aimed to evaluate the clotting and gel separation properties of Taro-derived tannins and starch compared to commercially manufactured polymers. Taro tannins were fractionated, and various concentrations were used to formulate the gel. Comparative analyses were conducted between commercial clot activators, Taro-based clot activators, and serum separators, focusing on their performance with non-protein nitrogenous compounds. Statistical analyses were employed to assess the data, including mean levels and one-way repeated-measures ANOVA. The results indicated that Taro-based serum separator tubes are comparable in efficacy to commercially produced tubes. This suggests that Taro can be effectively utilized in gel formulations as an additive for serum separator tubes. The findings propose a cost-effective, readily accessible, and renewable alternative that aligns with sustainable and green practices in healthcare and diagnostics. Utilizing Taro in laboratory settings could significantly reduce testing costs and promote environmentally friendly laboratory operations.

Keywords: Blood coagulant, blood urea nitrogen, blood uric acid, creatinine, thixotropic gel



SHNS-SR-014

Assessment of the Health Status of Food Handlers

Using Clinical Laboratory Tests: Occupational Diseases and Risk Factors

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Occupational safety and health introduction in the Philippines date back to 1903 when industries provided health services to treat their employees' injuries and diseases. From then on, institutions, establishments, and the Philippine government have started to recognize the importance of the health of their workers so that they can be more productive. A national food safety program was initiated in the Philippines in 2013. Collective efforts by food regulatory agencies have increased awareness of the significance of food safety in the country by signing the Philippine Food Safety Act into law. This study assessed the health status of food handlers using clinical laboratory tests according to possible risk factors to identify probable occupational diseases. A quantitative research design was utilized to assess the health status of food handlers according to their profile variables using a checklist along with a correlational research design to assess possible risk factors using clinical laboratory tests in the identification of possible occupational diseases. The study was conducted in Barangay Don Mariano Marcos and District 4, specifically within the university and 5 to 10 meters near the vicinity of Saint Mary's University with 30 food handlers, which is sufficient enough in the central limit theorem who voluntarily answered and got tested. The results of this study found that the majority of the clinical laboratory tests of food handlers, according to their possible risk factors, were normal. The possible risk factors identified were not significantly correlated with the clinical laboratory tests that were conducted. These were associated with age, years of working as food handlers, number of hours of work, and dietary preference. Public health is a must, requiring a systematic and routine clinical laboratory test for food handlers. It must be placed in prioritizing health in order to increase awareness of major occupational diseases and risk factors that affect the food handlers and their community recipients.

Keywords: Clinical laboratory tests, health status, occupational diseases, risk factors



SHNS-SR-015

**Thrombolytic Activity of Flavonoids from Arugula
(*Eruca sativa*) Crude Extract**

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Cardiovascular diseases are a major global health concern, with thrombotic events such as myocardial infarction and ischemic stroke contributing significantly to the associated morbidity and mortality. Natural compounds have gained attention for their potential to function as thrombolytic therapy, which dissolves blood clots and is a pivotal approach in managing thrombotic disorders. This study explored the thrombolytic activity of flavonoids from Arugula (*Eruca sativa*) *in vitro* using an experimental research design. The leaves were collected, processed, and subjected to sequential solvent extraction. The resultant crude extract underwent further investigation through thin-layer chromatography to determine the presence of flavonoids. Using column chromatographic techniques, the flavonoids were fractionated, yielding 1.1% of the total from the three solvents used. *In vitro* assay was conducted to assess the thrombolytic activity of flavonoids across various concentrations by evaluating the clot lysis. The results indicated that 20 mg/ml consistently demonstrated the highest activity in lysing thrombus formation: Ethyl Acetate-Ethanol solvent (Mean=90.3; SD=22.5), Ethanol solvent (Mean=78.0; SD=6.9), and Methanol: Distilled water (Mean=83.2; SD=10.8). The comparison of results between the Ethyl Acetate-Ethanol and the positive control Streptokinase (Mean=89.7; SD=21.5) in this study revealed that flavonoids from Arugula leaf extract exhibit no significant difference in terms of thrombolytic activity. Findings derived from this experiment warrant further investigation in the medical field, from *in vivo* applications to

developing safer and more efficient thrombotic therapies benefiting the healthcare sector, the pharmaceutical industry, and thrombotic patients.

Keywords: Cardiovascular diseases, clot lysis, flavonoid fraction, thrombolytic therapy, thrombus, thrombotic patients



SHNS-SR-016

Body Mass Index, Hematological Profile, Dietary Pattern, and Health Status of Children in the Selected SMU Partner Community: A Case Study

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This case study investigates the Body Mass Index (BMI), Hematological Profile, Dietary Pattern, and Health Status of children within a selected SMU partner community, Sitio Masina, Baretbet, Nueva Vizcaya. Through a comprehensive examination of these factors, the research aims to provide insights into the overall health and well-being of children in this community. The study employs various assessments, including BMI measurements, hematological analysis, and dietary pattern surveys. BMI measurements serve as indicators of height and weight status. At the same time, hematological analysis provides insights into blood-related health parameters such as complete blood cell count. Additionally, dietary pattern surveys are utilized to identify the types of foods regularly consumed by the children and assess their nutritional adequacy. By conducting a thorough examination of these factors, this research aims to uncover the connection between lifestyle, nutrition, and health outcomes among the children in the Sitio Masina community. Through this qualitative case report design approach, the study seeks to generate valuable findings that can inform the development of interventions and policies aimed at promoting

better health outcomes for children. By understanding the specific health challenges and needs of children in Sitio Masina, policymakers and healthcare providers can design targeted strategies to address these issues effectively. The research aims to contribute to efforts aimed at improving the overall health and well-being of children in marginalized or underserved areas, thereby fostering a healthier future for these communities.

Keywords: Children, hematology, nutrition



SHNS-SR-017

**Phenolic Property of Ginger (*Zingiber officinale*)
Rhizome: A Serum Creatinine Reagent for Kidney
Function Test**

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RMT*

This research investigated the viability of using ginger rhizome as an eco-friendly reagent for serum creatinine measurement. The study sought to determine the percent yield of the phenolic content of ginger rhizome, determine the best concentration of phenol extract, assess its efficacy in measuring serum creatinine levels based on pH and color intensity, and compare serum creatinine levels across two treatments. The study used a comparative-experimental design, comparing serum creatinine levels using the Phenolic Reagent from ginger rhizome against Jaffe's Reagent. The study utilized Column chromatography for phenol extraction of the ginger rhizome. Its total phenol content was determined through the Folin-Ciocalteu method, which was utilized in the preparation of phenolic reagents. The serum samples were collected and treated with the Phenolic reagent and the Jaffe reagent. Spectrophotometric analysis of the serum creatinine levels was done at 505 nm. It was found that phenol can be isolated in Acetone and Methanol at gradients 100:0 and 75:25, and the percent yield for 100g phenol of ginger was 14.35%. The best concentration of phenol extract obtained is 6.25%, and its acidic pH and yellow color intensity are effective

in quantitating serum creatinine levels. A T-test was applied to quantitative data analysis. The data showed that there's a significant difference in the creatinine level results between the use of Jaffe reagent and Phenolic Reagent (t-value=4.009, p-value=0.001) implying that Phenolic Reagent has lower creatinine levels (Mean=0.72). This natural sourcing of reagents ought to contribute to a cost-effective, accessible, and environmentally conscious solution to assessing kidney function levels.

Keywords: Color intensity, green chemistry, Jaffe method, kidney function, pH, phenolic reagent



SHNS-SR-018

Formulation and Evaluation of Antimicrobial Soap and Cream From Pikaw (*Alocasia navicularis*) Leaf Extract

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This study aimed to formulate and evaluate antimicrobial cream and soap formulations using Pikaw crude extract. The antimicrobial properties of Pikaw leaf extract were investigated through a descriptive-comparative experimental design. The most effective concentration, 200mg/mL, was used to formulate the cream and soap, which was tested on six healthy guinea pigs (3 for the Pikaw cream and 3 for the Pikaw soap). Hypersensitivity reactions and physical properties of the formulations were evaluated using sensitivity, scratch, and patch tests. The 200 mg/ml and 100 mg/ml Pikaw extracts had significantly higher zones of inhibition than the 50 mg/ml Pikaw extract. The antibacterial activity indices revealed that the 200 mg/ml Pikaw extract was almost equivalent to Ofloxacin (5µg/disc) and inferior to Chloramphenicol (30 µg/disc), 50µL of 1% Clotrimazole solution, and 100mg of 2% Ketoconazole. Increasing Pikaw extract concentration correlated with higher

zones of inhibition and antimicrobial activity indices. Pikaw extract showed the highest antimicrobial activity against *P. aeruginosa*, followed by *S. aureus*, *T. mentagrophytes*, and *C. albicans*, indicating its stronger antibacterial than antifungal properties at the given extract concentrations. These findings suggest the potential use of Pikaw as an alternative in treating microbial infections, such as abscesses, cellulitis, cutaneous candidiasis, vaginal yeast infection, and fungal dermatophytosis. The formulated Pikaw Cream and Soap exhibited moisturizing and refreshing properties without any grittiness, greasiness, skin inflammation, or irritation. The study highlighted the versatile abilities of Pikaw extract, warranting further exploration for new dosage formulations and commercial production.

Keywords: Antibacterial, anti-fungal, topical formulation, *pikaw* leaf extract, antimicrobial assay



SHNS-SR-019

Hypoglycemic Property of *Bidens pilosa* Aerial Part and Formulation of an Herbal Supplement

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Bidens pilosa L. is traditionally used as herbal medicine for various ailments. It was evaluated in this study for its hypoglycemic properties. The crude extract was subjected to thin-layer chromatography (TLC) to identify its secondary metabolites. It was then tested in Brine Shrimp Lethality Assay (BSLA) for cytotoxicity. It was further subjected to a hypoglycemic assay on alloxan-induced diabetic rats. The Phytochemical Screening identified essential oils, phenols, anthraquinones, anthrones, tannins, flavonoids, alkaloids, and steroids. The BSLA resulted in an LC₅₀ of 1,323.32 µg/mL. The hypoglycemic assay showed an observable reduction in blood glucose levels in three concentrations: 250 mg/kg, 500 mg/kg, and 750 mg/kg. The secondary metabolite that could account for

the reduction of blood glucose would be the alkaloid since this group of compounds had been reported to have hypoglycemic activities. The crude extract is also noted to be nontoxic based on the criteria of Meyer 1982 and Clarkson 2004 ($LC_{50} > 1000 \mu\text{g/mL}$ is nontoxic). The results of the hypoglycemic assay reveal that the concentration of 250-500 mg/kg can immediately reduce the blood glucose level, and it remains effective for at least 4-8 hours. The crude *Bidens pilosa* extract was prepared into a food supplement in an aqueous solution. The 30% w/v aqueous solution of *Bidens pilosa* was made by dissolving 4.5mg of the plant sample's methanolic crude extract in 10.5 mL of water. The herbal supplement is dark green with an agreeable taste, slightly bitter, and designed to be taken orally to maintain normal blood glucose levels.

Keywords: Blackjack, blood glucose reduction, diabetes mellitus, herbal medicine, aqueous solution



SHNS-SR-020

**Isolation of Antibacterial Compounds from
Caesalpinia pulcherrima (Bulaklak Ng Paraiso) Flower
through Bioassay Guided Fractionation against
Extended
Spectrum B-Lactamase (ESBL) Producing Bacteria**

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Jair DG., Puguon, Mitzy Kate B., Tugade, Robert Jr. G., &
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This research aimed to assess the antibacterial characteristics of the flower extract of *Caesalpinia pulcherrima*. The antibacterial efficacy was determined using the disc diffusion method on Mueller Hinton agar. The crude extract from *Caesalpinia pulcherrima* flowers underwent fractionation using different solvents to isolate the antibacterial components. Gradient elution was employed to partition the extracts, utilizing solvents with varying polarities for sequential separation. Preliminary phytochemical screening of the crude extract indicated the presence of several bioactive compounds, such as phenols,

coumarins, anthrones, tannins, flavonoids, steroids, and alkaloids. Confirmatory tests revealed that phenols and terpenoids were present in the ethyl acetate and distilled water solvent extracts while absent in hexane, chloroform, dichloromethane (DCM), ethanol, and methanol. The ethyl acetate extract exhibited a complete presence of phenols, alkaloids, and terpenoids, crucial for its antibacterial properties. Regarding inhibition results, the ethyl acetate extract demonstrated the highest inhibition against ESBL-producing- *E. coli* compared to other solvent extracts, with inhibition sizes of 13.10mm, 12.11mm, and 11.41mm. Similarly, it showed significant inhibition against ESBL-producing- *K. pneumoniae*, with sizes of 10.41mm, 11.41mm, and 12.21mm, indicating the potential bioactivity of specific phytochemicals. The toxicity assay indicated no observed mortality or toxicity at lower concentrations (30 mg, 300 mg, 500 mg, and 1600 mg) of the extract over seven days. However, higher concentrations (2900 mg and 5000 mg) exhibited a dose-dependent increase in mortality rates, suggesting a potential toxic response at elevated doses. This study unveiled the diverse plant-based chemicals in *Caesalpinia pulcherrima* flower extract, showcasing promising antibacterial properties. Emphasizing the importance of careful dosing is crucial to prevent potential toxic effects, contributing to a better understanding of its pharmacological properties.

Keywords: Bioactive compounds, ethyl acetate, *Escherichia coli*,



gradient elution,
Klebsiella

pneumoniae

SHNS-SR-021

Hypoglycemic Activity of *Mangifera indica* (Mango) and *Syzygium polycepalum* (Lipote) Leaves as Tea

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Diabetes mellitus is a chronic metabolic disorder with increasing prevalence worldwide, presenting a substantial public health challenge. This study aimed to investigate the potential hypoglycemic effects of *Mangifera indica* (mango) and *Syzygium polycephalum* (lipote) leaves when prepared as tea. The leaves were meticulously collected, dried, and finely ground before being steeped in hot water to create tea infusions. The experimental setup included six Sprague-Dawley rats, which were divided into three groups, each receiving different concentrations of the tea (1g/200 mL, 1.5g/200 mL, and 2g/200 mL). Additionally, one rat served as the positive control and received glibenclamide, a known hypoglycemic drug. Blood glucose levels were closely monitored, and oral glucose tolerance tests were performed throughout the study. The findings revealed that the hypoglycemic effects of the tea infusions were dose-dependent. Specifically, the tea with a concentration of 1.5g/200 mL (Dose 2) showed a significant 68.51% reduction in blood glucose levels after two weeks of administration. In comparison, the hypoglycemic effect of glibenclamide was more immediate and pronounced, with a 73.73% decrease in blood glucose levels observed within 24 hours. Remarkably, the combined mango-lipote leaf tea achieved an 86.44% decrease in blood glucose levels after two weeks, highlighting its potential as an effective hypoglycemic agent. Despite the promising results, it is essential to recognize that the rapid action of glibenclamide outperformed the tea in the short term. This suggests that while *Mangifera indica* and *Syzygium polycephalum* leaves possess notable hypoglycemic properties, they may be more suitable as a complementary treatment rather than a standalone therapy for diabetes management. The study underscores the necessity for further research to identify the active compounds responsible for the observed hypoglycemic effects. Additionally, human clinical trials are crucial to validate these initial findings and determine the practical applicability of mango-lipote leaf tea in treating individuals with diabetes or impaired glucose tolerance. With continued investigation, these natural teas may become valuable adjuncts to conventional diabetes therapies, offering a natural alternative with potential health benefits.

Keywords: Anti-diabetic, blood glucose level, diabetes mellitus, glibenclamide, herbal supplement, hypoglycemia

SHNS-SR-022

Antibacterial Properties and Formulation of Liquid Soap from *Ixora coccinea* Linn, (Santan) Crude Leaf Extract

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This study evaluates the antibacterial effectiveness of Santan crude leaf extracts against *Staphylococcus aureus* and *Escherichia coli*, aiming to develop an antibacterial liquid soap. Disk diffusion tests showed the Santan extracts inhibited *S. aureus* with a zone of 10.65mm, 12.53mm, and 13.44mm at 10%, 20%, and 30% concentration, respectively. For *E. coli*, the zones were 7.12mm, 15.33mm, and 7.23mm at the same concentrations. The ANOVA test confirmed significant antibacterial activity ($p < 0.05$). Subsequently, a liquid soap with 30% Santan extract was formulated and compared to a commercial antibacterial soap. Hypersensitivity testing on a guinea pig showed irritation or redness. These results indicate that Santan crude leaf extracts are potent antibacterial agents that are suitable for liquid soap formulation to enhance skin protection.



Keywords:

skin, inhibitory zones, irritation, redness

ANOVA, human

SHNS-SR-023

Formulation and Evaluation of Antihypercholesterolemic Capsule Containing *Tasmannia Piperita* Leaf Extract

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Brent Jericko P. Narciso, RPh

Hypercholesterolemia, a prevalent metabolic disorder, poses a significant risk factor for cardiovascular diseases globally. Nowadays, alternative treatments using medicinal plants have gained much attention due to their potential efficacy as an alternative medicine to commercial ones. This study was designed to investigate the antihypercholesterolemic effects of *Tasmannia piperita* using hypercholesterolemia-induced rabbits in comparison to atorvastatin and to formulate and evaluate capsules containing *T. piperita* leaf extract. Fifteen local New Zealand white rabbits were divided into 5 groups: Group A acted as the negative control and received only distilled water. Group B served as the positive control, receiving a daily dose of atorvastatin at 5 mg/kg body weight. Groups C, D, and E were administered daily doses of *T. piperita* leaf extract at 100 mg/kg, 200 mg/kg, and 300 mg/kg body weight, respectively. The analysis revealed a significant difference (p-value in the final cholesterol levels, with the negative control group having the highest level. However, no significant differences were observed between the positive control and treatment groups at any tested dose. These findings suggest that the methanolic extracts of *T. piperita* leaf show similar efficacy as atorvastatin in lowering cholesterol levels in hypercholesterolemic rabbits. The disintegration time of *T. piperita* capsules was within acceptable limits, which were less than 5 minutes. However, the in vitro dissolution profile did not reach 80% release within 30 minutes, failing to meet the USP criteria.

Keywords:

Atorvastatin,
hard gelatin
capsules, hypercholesterolemia, local New
Zealand white rabbits, *Tasmannia piperita* leaf
extract

SHNS-SR-024

**Bioactivities of Purple Shamrock (*Oxalis triangularis*)
Crude Extract and Evaluation of Shamrock Topical**

Antibacterial Gel

Krizelle Joy B. Dupra, & Robert S. Aceret, MA

The skin microbiome is composed of millions of bacteria, fungi, and viruses vital in the body's primary defense against pathogenic infections. Due to burns, abrasions, or surgical incisions, compromised skin may allow resident microbes to invade and cause infections. Inflammation, the body's immediate response to infection or injury, is essential for innate and adaptive immunity and constitutes a complex biological reaction of vascular tissues to harmful stimuli. Ineffective responses to these stimuli can result in infections, impeding wound healing. Various secondary metabolites, predominantly derived from plants, have demonstrated significant potential in reducing wound infections. These metabolites are known for their diverse bioactivities, including anti-inflammatory, antibacterial, and wound-healing properties. This study investigates the bioactivities of purple shamrock (*Oxalis triangularis*), focusing on detecting secondary metabolites in its crude extract and its anti-inflammatory, antibacterial activities, dermal toxicity, wound healing properties, and physical characteristics. An experimental research design was utilized, with plant samples collected from San Roque, San Mateo, Isabela, and subsequently authenticated. The samples underwent various assays, including thin-layer chromatographic screening, egg albumin denaturation assay, antibacterial assay using the agar well method, acute dermal toxicity tests, wound healing assessments, and evaluations of physical characteristics. The crude extract of *O. triangularis* revealed six secondary metabolites: essential oils, phenols, coumarins, steroids, glycosidic flavonoids, and fatty acids. The R_f values of these metabolites were also calculated. Although the crude extract exhibited anti-inflammatory properties, its inhibition of protein denaturation was lower than that of diclofenac sodium. Notably, it demonstrated significant inhibitory effects against *Escherichia coli* but limited activity against *Staphylococcus aureus*. The formulated topical antibacterial gel showed no signs of erythema or edema within three days. In rat wound models, treatment with *O. triangularis*

led to accelerated healing compared to hydrogel and povidone-iodine treatments, with povidone-iodine exhibiting the slowest healing rate. The topical antibacterial gel formulated from purple shamrock was characterized by a brown color, a musky-sweet scent, and a pH of 7.12 ± 0.02 , indicating a basic solution with good spreadability. It remained stable under refrigeration but exhibited phase separation after being stored in a dark place at 28-30°C for over  seven days.

Keywords: Edema, erythema, inflammation, protein denaturation, skin microbiome, wound healing

SHNS-SR-025

Molluscicidal Property of *Aspergillus sp.* on the Golden Apple Snail (*Pomacea canaliculata*) and Formulation of Bio-Molluscicide

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Rice is a staple food in many countries, including the Philippines, leading many individuals to pursue rice farming as their primary livelihood. However, the threat of snail pestilence significantly impacts rice crop yields, prompting farmers to use commercial molluscicides to control snail populations. The chemical composition of these molluscicides poses significant health risks to farmers and non-target organisms. This experimental and developmental study aimed to evaluate the molluscicidal properties of *Aspergillus sp.* crude extracts against *Pomacea canaliculata* eggs, juveniles, and adults. Cultural and morphological characterization was employed to identify the isolated fungi. Hatchability inhibition assays were performed on snail eggs. At the same time, mollusk mortality bioassays were conducted on juvenile and adult snails to test the effectiveness of various concentrations of *Aspergillus sp.* crude extract. Frequency count and percentage were used to determine the mortality rates of the eggs, juveniles, and adults exposed to the *Aspergillus sp.* crude extract. Probit Analysis was performed to calculate the LC₅₀ values of the extract. The results

demonstrated that all concentrations of *Aspergillus sp.* The EtOAc crude extract exhibited molluscicidal activity, with the highest concentration of 1000 ppm proving most effective against *P. canaliculata*, inducing the highest mortality rates across all developmental stages. The LC₅₀ values for the eggs, juveniles, and adults were calculated to be 789.82 ppm, 226.37 ppm, and 143 ppm, respectively. These findings indicate that the *Aspergillus sp.* EtOAc crude extract can kill at least half of the juvenile and adult populations at relatively low concentrations. However, higher concentrations are required for effective egg mortality. Based on these findings, a bio-molluscicide was formulated using the *Aspergillus sp.* EtOAc crude extract as the active ingredient. Further evaluation of the formulated bio-molluscicide is necessary before it can be recommended as an alternative to traditional chemical molluscicides.

Keywords: Hatchability inhibition, isolated fungi, juveniles, mollusk mortality, snail pest

SHNS-SR-026

Antimicrobial Potential of *Anuang (Rhynchospora colorata)* Crude Extract: Towards the Formulation and Evaluation of Emollient Cream Against Pathogens Worsening Psoriasis

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Rhynchospora colorata is a seed-propagated perennial plant with many active compounds used as an alternative medicine for skin itching. The study aimed to determine the antimicrobial potentials of *R. colorata* crude extract and its formulated emollient cream against selected skin pathogens worsening psoriasis. Several secondary metabolites were detected using Thin-Layer Chromatography. Antimicrobial assays were performed through disk diffusion, Minimum Inhibitory Concentration, Minimum Bactericidal Concentration, and Minimum Fungicidal Concentration to identify the crude

concentrations exhibiting antimicrobial activity against *S. aureus* and *C. albicans*. The crude concentration of 80% showed a capability to inhibit microorganisms, while 30% and 50% showed no inhibitory activity. The 80% crude concentration was used to formulate an emollient cream. The formulated cream was evaluated based on standard parameters in emollients and moisturizers. Prior to the efficacy test on psoriatic rat models, the rats were divided into three groups: one male and one female. The positive control utilized CeraVe as its healing agent. The experimental control utilized formulated emollient cream as its healing agent, and the negative control utilized cream with no plant extract as its healing agent. Psoriasis Area Severity Index was used to score the severity of redness, induration, and desquamation before and after treatment. The emollient displayed a notable difference in reducing the effects of psoriasis. In conclusion, a crude concentration of 80% has antimicrobial activity, and the formulated emollient cream is efficacious in reducing the effects of pathogens that worsen psoriasis. The study recommends using *R. colorata* crude extract for further bioassay tests, such as antioxidant activity and toxicity tests.



Keywords:

Imiquimod

Aldara 5%, Minimum Bactericidal Concentration, Minimum Fungicidal Concentration, Minimum Inhibitory Concentration, Natural Product, Psoriasis Area Severity Index (PASI)

SHNS FACULTY RESEARCHES

SHNS-FR-01

Assessment of Nitrate and Phosphate Content of Farm Soil and Groundwaters in an Agricultural Municipality in Nueva Vizcaya: Basis for MLGU Restoration Efforts and Eutrophication Control Program

Elsa L. Cajucum, PhD, Gloria Vicky A. Antonio, & Lorna C. Aban

Water safety and quality are essential, especially to human health, agriculture, aquaculture, industry, and all life forms. Effective crop production depends on an adequate supply of nutrients through fertilizer application to achieve maximum yield. However, farmers must manage soil nutrients appropriately to meet crops' fertility requirements without adversely affecting the quality of our valuable water resources. This research assessed the concentration of nitrates and phosphates in farmland soil and groundwater in the selected agro-ecosystem barangays in Dupax del Sur, Nueva Vizcaya, to ascertain the degree of anthropogenic influence via the application of fertilizer and other agrochemicals to farmlands by farmers. Results show that the dissolved nitrate concentrations of both water sources and farmland soils for both barangays are below the recommended levels set by the respective standards referenced in the study - with the statistical analysis showing no statistically significant difference in nitrate concentration between both barangays. Also, data indicate that the soil phosphate concentrations on all sampled farmlands in both barangays are below the recommended levels set by the standards referenced in the study. However, the dissolved phosphate concentration in all sampled water sites is significantly above the recommended levels. The differences in soil and water phosphate concentrations can be due to having a separate irrigation source that has experienced multiple runoffs and leaching events, increasing its dissolved phosphate.

Keywords: agrochemicals, biogeological processes, fertilizer application, sustainable farming

SHNS-FR-02

Exploring the In-Person to Online Flexible Teaching and Back: From the Lens of Nurse Educators” and Self-Efficacy in Online Teaching: Towards a Functional Training Program

Marissa Lyn A. Labangcoc, Mary Rose C. Jontilano, Thelma D. Delos Reyes, Mary Antoinette B. Aseron, & Peter-Tom A. Callang

For educators and schools all over the world, transitioning to online education during the Covid-19 presented difficulties. To assess online teaching self-efficacy (TSE) during COVID-19 and investigate participants' experiences during the transition from face-to-face teaching to online and back, this study used a mixed-method design. Seven of the 20 participants were contacted for an in-depth interview to explore their experiences during the transition. Results using the MNESEOT obtained scores of $M=15.93$ $SD=2.19$, which implies a moderate online teaching efficacy. Initial uncertainties, Issues caused by the disconnection with the students, managing situations, a good changeover, and lessons learned emerged as themes in the nurse educator's transition. The proposed activities include training on instructional materials development and the use of technology. Regardless of the teaching mode, they will undergo a transition. This study shows the benefit of educating and training nurse faculty to increase their self-efficacy as teachers. When there is a crisis in the educational system, nurse educators can adjust by having access to programs for faculty development that are tailored to their needs.

Keywords: COVID-19 pandemic, instructional materials, teaching efficacy, technology



SHNS-FR-03

Ethno-botanical Documentation and Diversity Assessment of medicinal Flora Used by Local Inhabitants in Bagabag, Nueva Vizcaya

Cathelyn C. Mariano, Olivar Reimos D. Barroga, Hansen T. Villanueva

This study documented and assessed the diversity of herbal medicines used in traditional therapies of local inhabitants in Sitio Masina, Brgy. Baretbet, Bagabag, Nueva Vizcaya. The ethnobotanical documentation was through field observation, semi-structured interviews, group discussions, and guided field walks. Use-value, informant consensus factor, and fidelity level of the identified species were quantified. The result of this endeavor may later benefit the community by informing them of the benefits of the medicinal plants around them, which could help them cope with their inability to get these from pharmacies and hospitals because of distance and lack of resources. Based on the survey, 31 medicinal plants with therapeutic purposes were identified by 22 local inhabitants. The plant with the highest Use Value (UV) was *Moringa oliefera* (*malunggay*). It is regarded as most important in the treatment of wounds. In terms of the Informant Consensus Factor (ICF), *Euphorbia hirta* (*tawa-tawa*) recorded the highest values. *Psidium guajava* (*bayabas*) was recorded to have the highest Fidelity level (FL). The leaves were the most used part as an infusion to cure different illnesses. The majority of the informants are familiar with the utilization, availability, importance, and perceived efficacy of these plants. Informants have a consensus that these plants may be used for a particular disease category, and each plant species mentioned has multiple uses. This study then provides baseline data of plant diversity in Sitio Masina, Bagabag, Nueva Vizcaya, and their medicinal uses can be used for the development of a compendium and will serve as a basis for drug discovery to improve the utilization of herbal plants from national perspectives.

Keywords: fidelity level, field observations, informant consensus factor, traditional medicines, use-value



SHNS-FR-04

SHNS – Looking Back and Beyond: Factors that Influence the Licensure Exam Performance for

Medical Laboratory Science and Pharmacy

Arlene L. Tabaquero, Melchora Bautista, & Shiela Ramos

This study investigates factors influencing licensure exam performance at Saint Mary's University in two board programs: BS Medical Laboratory Science and BS Pharmacy. The study covers the period from 2016 to 2023, including graduates from SY 2016-2017 (the first batch of licensure exam takers) up to SY 2021-2022 (the latest exam takers). Researchers conducted a retrospective review of academic performance records, focusing on predictors such as CET scores, college GWA, internship ratings, and integrated course ratings. Additionally, the study correlates institutional licensure exam performance ratings with participants' assessment of curriculum and instruction quality. Strengths and areas for improvement were identified based on qualitative responses. Notably, CET score, GWA, Internship Rating, and Integrated Course Rating serve as predictors for MTLE performance. In contrast, similar predictors apply to PhLE (except for Integrated Course Rating). The study also highlights the importance of course objectives, content coverage, instructional materials, faculty mastery, and relevant assignments in achieving exam success. In assessing quality factors for instruction, both MTLE and PhLE takers frequently observed the following in their professional courses: faculty adherence to instructional procedures, implementation of course requirements, and use of written exercises. Additionally, the availability of learning facilities was deemed important for exam success. Surprisingly, no significant correlation was found between Institutional Licensure Exam Performance Ratings (IPR) and participants' assessment of curriculum and instruction quality. This lack of correlation may be due to the limited number of examinees represented in the study. Notably, MTLE and PhLE exam takers credited SMU's contributions to their success in areas such as instructors, review classes, seminar lectures, facilities, instruction, internship, independent learning, and SMU branding. However, opportunities for improvement lie in enhancing instructors' delivery of instruction, review classes, seminar lectures, and facilities.

Keywords: Board Exam Performance, Curriculum, Instruction, Academic Performance

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SCHOOL OF TEACHER EDUCATION and HUMANITIES (STEH)

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STEh STUDENT RESEARCHES

STEh-SR-01:

Effectiveness of Kabataan Kontra Droga at Terorismo (KKDAT) Program for the Youth and Community in the Municipality of Pasil, Kalinga

Bawalan, Rema Elaine W., Dulnuan, Irish D., Gawongna, Ma. Theresa D., Melegrito, Gwyn G., Ravana, Brylle Cedric T., Naval, Erwin D., PhD

Kabataan Kontra Droga at Terorismo (KKDAT) is a program that endorses the campaign against illicit drug use and terrorism and places particular emphasis on student organizations in schools and youth groups that are vulnerable to persuasion and infiltration by criminal and insurgent groups. This study determined the effectiveness of the KKDAT Program for the youth and community in the municipality of Pasil, Kalinga. Clearly, it defined the following: the level of effectiveness of the KKDAT Program in terms of leadership, volunteerism, and civic participation of the youth and young adults as well as illegal drug prevention and communist terrorist prevention as well as the significant difference in the level of effectiveness between the implementer and recipient. The researchers adopted a descriptive, comparative-type research method using a quantitative approach to determine and answer the research problems. Pilot testing and data gathering were done using survey questionnaires with the PNP, KPMFC, MPOCC, and active KKDAT members of Pasil, Kalinga, as the respondents. It is evident and consistent with the result of the study that the KKDAT Program is effective in developing the leadership, volunteerism, and civic participation of the youth and young adults, as well as it is an effective strategy in preventing youth from engaging in illegal drugs as well as combating the acts of terrorism in our country. Therefore, the result of the study shows that the KKDAT Program is excellent and that it benefits the community, especially the youth. So, it is good practice that makes it a model system.

Keywords: Leadership, volunteerism, civic participation of the youth, combating terrorism, preventing youth from engaging in illegal drugs



STEH-SR-02:

Level of Satisfaction on Police-Community Relation Programs of the Philippine National Police among the Residents of San Leonardo, Aglipay, Quirino

Buahon, Jocoson, O., Guyud, Emmanuel Steven, G., Guyud, Emmanuel Philip, G., Vallente, Sheena Joyce, B., & Bautista, Gerome, H., MST

“The Police are the Public, and the Public are the Police.” It is said that police and community collaboration is needed to maintain peace and order in the country, and such remarks highlighted not only the role of police regarding effective law enforcement but also the role of the citizens. This study aimed to describe the level of satisfaction of the residents of San Leonardo, Aglipay, Quirino with the implementation of Police Community Relation Programs using descriptive-comparative methods to address research problems. A descriptive-comparative method was used to describe the respondents’ level of satisfaction with police-community relations (PCR) programs, namely the Public Information Program, Public Relation Program, Civic Action Program, and Psychological Program. The study showed that there are no significant differences in the respondents’ level of satisfaction in terms of Sex and Age. However, there is a significant difference in their level of satisfaction with psychological programs when grouped according to their years of residency. The researchers recommend that the PNP regularly update themselves on the profile of the residents of the barangay and other barangays to be able to provide gender-sensitive and age-sensitive programs, especially for the older populations. The relevant activities crafted based on the salient findings are the following: Establishing Linkages, Strengthening the Barangay Justice System, Enhancing Competencies in Medical and Dental Care

Services, Bulletin of Information, and Police Gerontology Services.

Keywords: Law enforcement, public information, public relations, civic action, psychological program



STEHR-SR-03:

Analysis of Crime Dynamics in the Municipality of Bayombong, Nueva Vizcaya Before and During Covid-19 Pandemic Restrictions

Bungubung, Julia Louise M., Aquino, John Paul B., Mariano, Ericson D., Soncuan, Angelo A., Daquiaoag, Elmar Jr., T., Maslang, Kenneth L., MAEd

Crime is a social phenomenon that is continuous and constantly happening around the world. It is progressive and can adapt to any situation. Every second, there is a crime happening, and it sometimes makes the community feel unsafe and uneasy. In recent years, a pandemic broke out and affected the world, the same with how crimes are committed and how it affected the crime rate of the community. This study aims to analyze the crime dynamics in the municipality of Bayombong, Nueva Vizcaya, and to help enhance the prevention of crime in the said municipality through the use of interviews and document scanning from the Bayombong Police Station. The qualitative-descriptive design was used to describe the profile of index and non-index crime incidents in the Municipality of Bayombong from 2018 to 2021 and to analyze the prevalent offenses under the index and non-index crimes in two distinct periods. The results showed the demographic profile of crimes between the two periods. It shows that crimes are prevalent in the pre-pandemic period. Moreover, it shows that non-index crime is more likely to be committed in both periods, with reckless imprudence as the highest offense. It also shows how the system of PNP crime prevention effectively decreased the crime rate in the municipality. However, the crimes that mostly are

committed on the road are still high; therefore, the researchers recommend enhanced crime prevention strategies that might help the community for the crime rate to decrease continuously; this includes enhanced police visibility, moral and legal awareness, installing technological deterrence, and strict traffic control. The continuous cooperation and support of the community in the police programs is one of the key factors in the decrease of crime frequency.

Keywords: Crime, crime prevention, crime rate, index crime, non-index crime



STEHR-SR-04:

**Effectiveness and Level of Implementation of
Community-Based Rehabilitation and Wellness
Program (CBRP) of Bagabag, Nueva Vizcaya**

*Cardenas, Jan Yndie A., Estimada, Jammu Kashmir B.,
Lapurga, Jaymark D. Lim, Rhyce V., Ramiro, Jude Walter G.,
& Damayon, Samuel B., MA*

The Community-based Rehabilitation and Wellness Program (CBRP) is a program by the Philippine government aimed at the treatment of drug addiction as it provides individual and family programs, community care intervention, health and psycho-education, and psychological, social, and spiritual support services. The program has been in its implementation for several years, but no extensive studies exist about its implementation and effectiveness. This study, thus, determined the level of implementation and effectiveness of CBRP in Bagabag, Nueva Vizcaya. It employed a descriptive-quantitative approach to research, having the Municipality of Bagabag, Nueva Vizcaya, with 17 barangays as the locale of the study. Utilizing a survey questionnaire, the researchers found that the health and psychological program components of CBRP were implemented to an excellent extent.

In contrast, all the others were implemented to a great extent. In terms of the program's effectiveness, they were found to be

effective to a great extent. In sum, the CBRP in Bagabag, Nueva Vizcaya, was implemented and effective to a great extent, which implies that it was well-managed and very effective. This is attributed to the cooperation and collaboration of all the agencies implementing the above program.

Keywords: Drug surrenderees, drug addiction, rehabilitation, community-based rehabilitation



STEh-SR-05:

Awareness and Compliance of Saint Mary's University College Students on Traffic Rules and Regulations

Foronda, Isagani Jr., R., Torres, Fritz Iverzon D., Morales, Alyzza Isabelle L.C., Ariola, Paul John B., Simon, Christian Jobert S., Nantes, Felipe Jr., V., PhD

Education plays a key role in road safety as it has likely reduced deaths caused by accidents in developed countries. This study determined the level of awareness and compliance of Saint Mary's University students to the traffic rules and regulations of the Land Transportation Office, as well as the ordinances of the Municipality of Bayombong, Nueva Vizcaya, through an adapted and modified questionnaire by the researchers. The descriptive-quantitative design was used to describe the respondents' level of awareness and compliance with traffic rules and regulations using the numerical and statistical data collected through the questionnaires. Snowball sampling was utilized to identify respondents. The respondents were from the tertiary level who have experience in driving, are enrolled at SMU for the Academic Year 2022-2023, have a driver's license, and are current residents of Bayombong, Nueva Vizcaya. The study outcomes show that the students have high knowledge and are aware of the rules and regulations of the LTO and the municipal ordinances. Moreover, it shows that the students have a high sense of compliance with these rules and regulations and the traffic ordinances. However, since they do not always comply with some of the traffic rules, some improvements should be

made. The researchers recommend that the DSAS office increase its regular orientation about traffic rules to provide a high level of compliance to the student drivers of Saint Mary's University.

Keywords: Road safety, LTO, traffic ordinances, student drivers

STEh-SR-06:



Predictors of Academic Dishonesty among College and Senior High Students

Cantor, Sarah May C., Dagupon, Rockenson L., Bumakil, Kathleen Joice M., Malingan, Gwyneth Clouie A., Callangan, Rachelle R.

The threat of academic dishonesty to future professionals is still viewed with utmost importance in current dilemmas. As such, this study aims to aid past researchers regarding possible predictors of academic dishonesty. A proportionate stratified random sampling has been used to gather participants from senior high and college students in private higher educational institutions in Northern Luzon. About 432 students willingly participated in this study. Quantitative methods were utilized, particularly descriptive-predictive research design. The results showed that respondents have a high gratitude disposition, a high level of sympathy and empathy, and a moderate level of guilt-proneness. It was also found that they have very low academic dishonesty. Yet, there are still a few prevalent cheating behaviors, such as whispering of answers, collaborating on an assignment, copying in exams, improper citation, and using cheat notes. Moreover, findings revealed that among the demographic profile, religion, specifically Catholic, BS Biology, and BS Architecture courses, STEM and HUMSS strand significantly predicts AD. Additionally, Dean's Lister and Bronze awardees under academic achievement significantly predict AD among the academic profiles. Similarly, moral emotions, sympathy, guilt, and gratitude significantly predict AD. This result implies substantial and practical significance for professors and institutions in managing career enhancement

and dealing with course design development and school regulations regarding academic integrity.

Keywords: Cheating, academic integrity, morality, plagiarism, professionalism



STEh-SR-07:

**Cybercrime Vulnerability of
Saint Mary's University Students**

*Bayangan, Esthyre Kate A., Balonquita, Maria
Luisa F., Guieb, Gwen Princess G., Tawaran,
Daniella Grace G., Uyaan, Shekinah Grace M.,
Budaden, Jonathan R., PhD*

The commission of cybercrimes in the advent of technological advances, industrialization, and globalization is inevitable. This is one of the prevailing challenges in universities that must be addressed. Using a quantitative, descriptive, comparative method, this study endeavored to bring out baseline information on the vulnerability of SMU students as offenders of cybercrimes. The findings included profile variables such as gender, year level, school, and frequency of Internet use. This study was dominated by female respondents, with almost equal distribution in terms of year level and the considerable proportion concerning school, and most of the respondents had a frequency of Internet use between 4 – 8 hours. Further, findings showed that SMU students had a very low probability of committing cybercrime: 1) Offenses against confidentiality, integrity, and availability of computer data systems; 2) Content-related offenses; and 3) Computer-related offenses. Lastly, gender affects the responses of SMU students in terms of offenses against confidentiality, integrity, and availability of computer data systems, as well as content-related offenses but not computer-related offenses. Only the responses between First - and fourth-year students vary for the year level. Meanwhile, the school of the respondents influences the responses of students

but not the frequency of Internet use. The researchers recommend enhancing and expanding policies and guidelines in Internet use and virtual learning to include safe browser systems. For future research, it is highly recommended to look at the side of the victims and not only the vulnerability of becoming offenders.

Keywords: Computer and content-related offenses, cybercrime act of 2012, hacking, phishing, privacy act of 2012



STEh-SR-o8:

Published Police Cases and the Extent of Effects as Perceived by the Humanities Students of a Higher Educational Institution

Villar, Meldan R., Yarcia, Jhoenn Faith S., Pumihic, Angelika T., De Vera, Gerald B., Lactam, Marlon Jr., G., & Vergara, Jonathan P., MAEd

In the promotion of peace and order and the enforcement of the law, police personnel are trained to do their tasks and educated to obey the code of conduct. During their service, police officers deal with complaints, violations of the code of conduct, violations of the law, and failure to fulfill duties and responsibilities. As a result, they faced criminal charges. This study primarily sought to profile published Police cases and determine their extent of effects on the PNP's public image as perceived by the Humanities students of a Higher Educational Institution. This utilized the descriptive-comparative-quantitative-qualitative type of research to answer the objectives of the problem forwarded. Published Police cases in the year 2018-2023, either through online platforms or social media, were compiled, reviewed, and analyzed using a qualitative approach, while the perceived extent of the said published police cases was determined using descriptive statistics after gathering pertinent and reliable data from students of Humanities in a Higher Educational Institution (HEI). The study shows that

both male and female police personnel of various positions or ranks are involved in cases. It also shows that the published police cases have a moderate extent of effects on police images as perceived by Humanities students. Moreover, the Humanities students significantly differ in their perception of the effects of the published cases on police images when they are grouped according to program.

Keywords: Philippine national police, profiling, case type, rank



STEHSR-09:

The Functionality of Barangay Violence against Women and Children's Desk in a Municipality in Nueva Vizcaya

Joelyne B. Espiritu, Harold G. Inuguidan, Daren Aristotle C. Mercado, May Kailee C. Santos, Diana I. Tayaban, Florence Nawew-Bahni, PhD

The Violence Against Women and Children Desks in every barangay is a facility that serves as a frontline service provider at the grassroots of society to protect women and children. A VAWC Desk Officer manages it. This study uses a quantitative-qualitative design to assess the functionality of VAWC Desks in a municipality in Nueva Vizcaya. The quantitative part used a descriptive design to present the data collected through the survey and document scanning. Thematic Analysis was utilized to analyze the issues and challenges Barangay VAWC Desk Officers encountered in addressing VAWC cases. VAWC Desk Officers and Punong Barangays were the subjects of the study. Findings suggested that the functionality of VAWC Desks has been improving each year, with most of the desks at the "Ideal" level. However, the COVID-19 pandemic affected the functionality of VAWC Desks, causing some VAWC Desks to return to the mature, even progressive, and basic levels. Analysis of qualitative responses led the researchers to generate three main themes in the issues and challenges encountered by VAWC Desk Officers in addressing VAWC cases. These are fear, lack of proper implementation, and amicable settlement. On the other

hand, two main themes were generated from the respondents' recommendations to counteract these issues, which are improving implementation and coordination with the Philippine National Police. The findings imply that although most VAWC Desks maintain an Ideal functionality, issues regarding implementation, like the need for training/seminars, lack of personnel, lack of some resources, and insufficient budget, still need to be solved. Hence, the continuous monitoring of VAWC Desks is vital to further improving the implementation of the VAWC Law.

Keywords: Customary laws, implementation of the VAWC law, VAWC desks functionality, RA 9262

STEHR-SR-010: 

Level of Satisfaction of the Persons Deprived of Liberty in Solano District Jail in the Implementation of Minimum Health Standards in Times of Pandemic

Ibarra, Jerico M., Lucero, Darren Wayne P., Neri, Renato N. Jr, Diozon, Neil Bryan F., Vergara, Jonathan P., MAEd

This study determined the level of satisfaction of the persons deprived of liberty in Solano District Jail in the implementation of minimum health standards in times of pandemic. The quantitative-qualitative design was used to describe the respondent's level of satisfaction with the implementation of the minimum health standards through the numerical and statistical data gathered using questionnaires and to determine the problems encountered by the PDLs on the implementation through an interview. The respondents were male PDLs present in Solano District Jail from March 2020 to March 2022 who were at least 18 years old. The result showed that the PDLs are highly satisfied and that they are compliant with the implementation of the minimum health standards. However, they experienced problems with the implementation of these health protocols, like the lack of supply of facemasks sometimes, non-observation of social distancing due to small spaces of cells,

the strict control of alcohol due to abusive trait of the PDLs in drinking it as a beverage, and the non-accommodation of some of the PDLs in the implementation of *e-dalaw* due to their number. Since problems are encountered in the implementation of health standards, improvements should be made. The researchers recommended that the BJMP management may consider partnering with the government and private agencies to address the problems encountered by the PDLs like the lack of supply of facemasks, adding facilities to lessen the overcrowding in cells to observe social distancing and additional equipment where all the PDLs can be accommodated for the *e-dalaw* and the continued compliance of the PDLs with the minimum health standards for the welfare of everyone in the facility.

Keywords: PDL, level of satisfaction, minimum health standards, implementation, and problems encountered



STEHSR-011:

Factors Influencing Millennials and Generation Z Voters on Their Preference for Political Candidates in Solano, Nueva Vizcaya, Philippines

Respicio, Noreen Jeanne P., Ramirez, Ayesha Q., Laygo, Sandra Lou L., Malcat, Robert Dymier D., Garcia, Lyneth M., & Nantes, Felipe Jr. V., PhD.

This study sought to comprehend the political behavior of Filipino millennials & Generation Z voters, particularly their voting preferences. It aimed to explain and assess the level of influence of voters in seven different factors: educational attainment, political influence, stand on social and political issues, platforms, party identification, pre-election polls, and advertisement. The study used a quantitative approach, specifically the descriptive-comparative design. It was conducted in the six urban barangays of Solano, Nueva Vizcaya. One of the seven variables, pre-election polls, proved to be not influential.

Most notably, respondents are not easily swayed by public opinion and the “bandwagon effect.” One variable, platforms, proved highly influential and affirmed that when a political candidate explains their platforms and advocacies, voters are mostly given information about the political candidate’s platforms. In terms of sex, the analysis showed a significant difference between pre-election polls and sex. Men care more about the pre-election, as women focus on the post-election. There is also a significant difference between advertisements and age groups. Social media advertisement shapes both the voters’ views and involvement with issues of personal interest, and it enables relationships that form voter decisions where millennials are the most informed voters. Correlated, the political advertisements moderately swayed Generation Z or first-time voters’ decision-making about candidates. The study’s outcome has departed from the stereotype; voters are now inclined to be influenced by government platforms and are now pivotal for explaining Filipino voting preferences rather than personality-driven aspects and fantasy polls.

Keywords: Advertisements, choice, platforms, voting generation, voter’s preference

STEH-SR-012: 

English Teachers’ Attitudes Towards Philippine English and the Acceptability of Its Grammatical Features

*Tolentino, Miguel John Cuaresma, Asuncion, Zayda Santiago,
PhD*

Philippine English has gained attention throughout the years, but there seems to be a dearth of literature regarding attitudes and acceptance of Philippine English in other parts of the country. Using a descriptive-correlational design, the study aimed to determine the attitudes and level of grammatical acceptability of 27 English teachers of a private tertiary educational institution in Northern Luzon through a 17-item and 20-item attitudinal and grammatical acceptability

questionnaire, respectively. Results showed that the respondents had a positive attitude towards Philippine English, and they accepted its grammatical features. However, when the respondents were grouped according to highest educational attainment, a significant difference was found. It is recommended that future studies focus more on a larger set of respondents to yield more conclusive data and include the contexts where the grammatical features are acceptable or unacceptable.

Keywords: English teachers, grammatical acceptability, grammaticality test, highest educational attainment, positive attitude



STEHR-SR-013:

Moves Analysis of Results-Discussion Chapter in Senior High School Research

Abraham, Joshua P., Pugong, Nizza Vivienne B., Ruiz, Ethelwolda Bianca S., Villanueva, Marinel A., & Asuncion, Zayda S., PhD

The results-discussion chapter of a research paper is critical in justifying the significance of the study in a particular area. Using descriptive research design, this study aimed to determine the common moves, steps, and patterns of the results-discussion of Grade 12 STEM, ABM, HUMSS, and ICT based on Yang and Allison's Model (2003). A total of 18 research papers consisting of five (5) results-discussion chapters were gathered from each track of the academic strand, and three (3) from the technical-vocational and livelihood strands were analyzed. The findings revealed that the most common moves were Move 2 and Move 4. The most common steps were Step 1: Interpret Findings and Step 2: Compare findings with the literature. The move patterns dominantly observed in the four fields were M2-M4. Generally, not all research papers employ the moves and steps, which implies that the student researchers lack familiarity with a well-

written research result discussion adhering to the move pattern in Yang and Allison's Model (2003). Hence, this study forwards the following pedagogical recommendations : (1) for teachers of Practical Research and English for Academic and Professional Purposes to consider integrating Yang and Allison's Model (2003) into STEM, ABM, HUMSS, and ICT as another way of organizing the results-discussion chapter; (2) for future researchers to possibly conduct a similar study regarding the results-discussion chapter using the Yang and Allison's Model (2003); and (3) for future researchers to include research papers written by senior high school students in the public schools. Moreover, the number of research papers analyzed can be increased to arrive at a more generalizable finding.

Keywords: Moves, move-pattern, results-discussion, steps; Yang and Allison Model (2003)



STEH-SR-014:

The Challenges and Coping Strategies of Primary Elementary Teachers in the Implementation of MTB-MLE in the Post-Covid Era

Alayu, Shareen M., Baldovino, Pauline B., Cubangbang, Lovely O., Pocyao, Humbert M., Rufinta, Saint Iverette C., Calauagan, Federicia C., MAEd

Since the implementation of Mother Tongue-Based-Multilingual Education (MTB-MLE) as a viable strategy in the educational environment, it has received criticism and has confronted several concerns. Despite the benefits of MTB-MLE implementation, it presented several problems that impeded its complete implementation. In this context, the researchers investigated the challenges and coping strategies of primary grade teachers in the implementation of MTB-MLE in the post-COVID era. Using the quantitative-qualitative approach, the researchers described the challenges that primary grade teachers must address in implementing MTB-MLE in a

particular district in Paracelis, Mountain Province, for the school year 2021-2022. In general, the primary teachers generally perceived the challenges on content, instruction/strategies, learning resources and instructional materials, physical facilities, and equipment as their least problems, which means that they display enough confidence to implement MTB-MLE using their mother tongue as a medium of instruction. Through thematic analysis, the generated themes that served as their coping strategies in addressing the challenges in implementing MTB-MLE using the mother tongue as a medium of instruction were the following: contextualization of content and learning resources, bridging and multilingual teaching and training, online-based resources and assistance and partnership with the stakeholders. Teachers had a common strategic way to cope with the challenges brought by implementing MTB-MLE using their mother tongue as a medium of instruction. Likewise, the recommended activity is formulated to give insights on how to lessen the burden of the teacher in implementing MTB-MLE using the mother tongue as a medium of instruction.

Keywords: Ethnolinguistic tribes, Ilocano, lingua-franca, native language primary grade learners, primary grade teachers



STEh-SR-015:

An Assessment of the Campus Ministry of A CICM Higher Educational Institution in Nueva Vizcaya: Towards A Revitalized Program

*Lorraine Joy M. Jose, Mark Anthony M. Carabbacan,
John Rey D. Maximo, & Jonathan P. Vergara, MAEd*

The Campus Ministry is a ministry of the Church that engages the laity in worship, service, and inclusive community for students, faculty, staff, and administrators of Catholic Institutions. This study was primarily conducted to assess the Campus Ministry of a Higher Educational Institution in Nueva

Vizcaya. It utilized the Descriptive-Evaluative type of research and employed the mixed method (Quantitative and Qualitative) type of research. Respondents were students and employees of the CICM Higher Educational Institution. Data were gathered using a survey questionnaire. Physical observation and informal interviews with purposively selected individuals (students and employees) were conducted to validate and substantiate data gathered that were treated and analyzed using descriptive statistics (frequency, percentage, mean, and standard deviation). Results showed that the Campus Ministry Office is accessible to students and employees and well-lit and ventilated; however, it lacks space and facilities because it is a shared office with VPMI and Scholarship Grants. Formation programs, activities, and projects are not properly and widely disseminated because they are only extended to selected groups of students and employees. The pandemic caused the university to conduct online classes. The campus ministry was unable to implement and conduct many formation programs, activities, and projects, which resulted in the very minimal impact of the campus ministry on the lives of students and faculty. The Campus Ministry needs to improve the study's results to be more functional, relevant, and proactive in forming projects, programs, and activities.

Keywords: Campus ministry, CICM, formation programs, implementation, implication, involvement



STEH-SR-016:

**Parental Involvement in Learning Mathematics of
Grade 6 Pupils in a Blended Learning Modality towards
the Development of Instructional Materials**

*Tadena, Nicole L., Agruda, Ezra Ian P., Sagun, Whriz Debhrey
D., Fonbuena, John Paulo B., Chalajchaj, Jubie Ann L., &
Bautista, Gerome H., MST*

This study aimed to determine the parental involvement in the learning of mathematics among Grade 6 students at Muir

Woods Academy, Inc. during the academic year 2022–2023 because both blended learning and learning mathematics are thought to be difficult for academic success. A total of 27 parents participated in the quantitative and descriptive-comparative research design and completed an online or offline questionnaire; it was found that most parents have bachelor's degrees, are employed in several occupations, and have two to three children. The parents were also highly involved in encouraging, modeling, reinforcing, and instructing mathematics learning during blended learning of the Grade 6 pupils. It was also found that no significant differences exist in the extent of parental involvement when grouped according to their educational attainment, occupation, and number of children. From these, instructional interventions in the form of online parent-teacher conversations flipped collaborative projects, and contextualized learning materials were forwarded. It is then recommended that mathematics teachers and school administrators implement these interventions to improve parental involvement and, consequently, learning outcomes.

Keywords: Educational level, encouragement, parents' occupation, reinforcement, flipped learning, instructional intervention



STEh-SR-017:

Disabilities and Psychosocial Needs of SPED Learners

Belington, Sachiko C., Domdom, Zedy Angel T., Ubaldo, Jeska Mae A., & Bahni-Nawew, Florence

In the Philippines, the Department of Education estimates that the percentage of children in the country with special needs is 12%; two percent includes gifted children, while 10% includes children with disabilities. Special education learners require careful and well-planned interventions. In the municipality of Lamut, Ifugao, the provision of psychosocial activities is limited. Thus, a needs assessment must be conducted to identify the type

of program or activities to be provided. The purpose of the study is to provide a basis for creating psychosocial programs, especially in assessing the Psychosocial needs of SPED learners in Lamut, Ifugao. Specifically, it investigates the SPED disabilities present among the SPED learners and determines the psychosocial needs of SPED learners. The participants are composed of SPED learners' parents. The study is qualitative and uses a descriptive research design. The SPED disabilities present among the SPED learners are orthopedic impairment and speech or language impairment. Two SPED learners have an orthopedic impairment, while one has a speech or language impairment. Their psychosocial needs include assistive technology, medication, therapy, socialization, formal medical diagnosis, and psychoeducation. Additionally, the psychosocial support and services parents receive are activities and programs, subsidies, and discounts. Moreover, the services parents would like the SPED center to offer are accessible educational materials, free medical consultation, behavioral management techniques, and home visits.

Keywords: Disability type, Lamut Ifugao, learners with disabilities, needs assessment, parents of SPED, psychosocial needs



STEH-SR-018:

Interpersonal Relationships and Emotional Intelligence of Social Work Students During the Pandemic: Basis for Social Activities

Madronio, Evelyn M. C., Dumangeng, Jesa M. B., and Cadingan, Arvie P., Reiner Dulawan, MAEd

Individuals need assistance and companionship in times of distress, and it is essential to maintain interpersonal ties in the face of a crisis. Especially in our current situation, relationships need to be nurtured and maintained. The study aimed to determine social work students' interpersonal relationships and emotional intelligence during the pandemic and see if significant

relationships will serve as a basis for social activities. The Interpersonal Competence Questionnaire and Rotterdam Emotional Intelligence Scale were used to gather data from the participants. A quantitative method approach and descriptive-correlational research design were utilized for data collection and analysis in the study, a total of 236 social work students from Saint Mary's University, University of La Salette Santiago City, Saint Paul University of the Philippines Tuguegarao City Cagayan, Cordillera Career Development and ISAP MNCP Tuguegarao City Cagayan participated in the study. Findings reported that social work students had average interpersonal relationships and emotional intelligence during the pandemic. A significant correlation was found between interpersonal relationships and students' emotional intelligence. There is no significant difference in the level of interpersonal relationships and emotional intelligence between the respondents based on sex, grade level, or age. However, there is a significant difference in the level of interpersonal relationships and emotional intelligence regarding socio-economic status. Social activities are recommended for social work students to enhance interpersonal relationships and emotional intelligence. Recommendations are made for teachers, social workers, guidance counselors, and future researchers.

Keywords: Emotions, school activities, communication, social support, social relationship



STEHSR-019:

Barriers and Challenges of Guidance Practitioners in Delivering Guidance Services During the Pandemic

*Hoggang, Zyra Millen M., Mamangon, Reanna Cheruvin B.,
Tiu, Nicole Kate T., Palina, May Juliet S., MS*

The COVID-19 pandemic has significantly increased the need for guidance counseling services, and this trend is expected to continue. This study aimed to identify the barriers and

challenges guidance practitioners face in providing guidance services during the pandemic. A mixed-methods descriptive and cross-sectional approach was used to collect data through a survey questionnaire administered to 48 guidance practitioners from public and private schools in Nueva Vizcaya. The questionnaire consisted of three parts: the profile of the guidance practitioners, the barriers to delivering guidance services, and the activities and challenges faced by guidance practitioners. The identified barriers included administrative barriers, lack of competency and motivation among guidance practitioners, and resource constraints. Moreover, the identified challenges of guidance practitioners include limited RGC to implement counseling services, stress caused by a heavy workload, many students to work with, and COVID-19, with some students not fully vaccinated. The study highlights the need for school administrators to make sure the working conditions of guidance practitioners with the necessary resources and facilities to deliver guidance services effectively, such as counseling rooms and materials, and also give opportunities where they can enhance their performance through training and seminars, further to enhance the degree of understanding of the guidance responsibilities. Additionally, it is recommended to hire guidance practitioners full-time to ensure they have enough time to work with students. This study's outcomes could serve as a basis for relevant authorities, including guidance practitioners, school administrators, and education personnel, to reduce barriers and challenges and raise awareness of the importance of school counseling services.

Keywords: administrative barriers, barriers, challenges, COVID-19 pandemic, guidance practitioners, guidance services, resource constraints



STEh-SR-020:

**Perceived Parental Support and Academic Motivation
among Senior High School Students**

*Canonizado, Leighzanne Keith F., Nacin Jossa Camila L.,
Bambico, Xienah May L., Dulawan, Reiner B., MAEd*

Parental support is important to children, especially their studies and motivation. Students' academic motivation has been affected during the sudden shift to online learning and then back to traditional face-to-face education. This study aims to discover how the different forms of parental support, such as informational, emotional, appraisal, and instrumental support, increase and decrease students' academic motivation. A descriptive, comparative, and correlational research design was used to investigate the relationship between these variables. The study's respondents consist of 284 Senior High School (SHS) students of Saint Mary's University (SMU), and random sampling was administered. A three-part survey questionnaire was used to collect the desired data, which consisted of the participants' profiles, and the Child and Adolescent Social Support Scale (CASSS) was used to measure the perception of support received from the students by their parents. The Academic Motivation Scale (AMS) measures students' motivation to study. The results of this study have found a positive relationship between perceived parental support in frequency and importance and students' academic motivation. Despite the sudden shifts of online and traditional learning, it has been found that students were not motivated and were high in extrinsic motivation. Students also receive support most of the time, and they consider these very important for their studies. Future researchers are encouraged to expand their research to junior high school and college students and include public and private schools in their future studies. The Guidance and Testing Office may utilize this study's result to learn other ways and apply recommendations that could greatly improve the academic motivation of SHS students. The paper will be submitted in hard copy to the senior high department. It can serve as a basis for topics discussed during their homeroom guidance.

Keywords: Amotivation, appraisal support, emotional support, extrinsic motivation, informational support, instrumental support, intrinsic motivation, social support



STEH-SR-021:

Digital Productivity and Literacy of Working from Home Employees at Saint Mary's University

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Nuestro, Galo Augustine R., BA*

Digital productivity is associated with using ICT-based tools to carry out tasks effectively, productively, and with attention to quality (Technology Enhanced Learning, 2019). However, the abrupt shift from traditional work settings to remote work because of the COVID-19 pandemic has been a great challenge for employees with inadequate digital skills, which may have a significant relationship with their digital productivity. This research aims to determine the level of digital productivity and digital literacy and whether there is a relationship between digital productivity and literacy among work-from-home (WFH) employees. This study used a quantitative research design, specifically a descriptive correlational and comparative design, to investigate the relationship between WFH employees' digital productivity and literacy. Also, to compare the two groups, the non-academic and academic employees. The collected data were obtained through adapted and self-administered questionnaires among academic and non-academic employees who experienced or are currently engaged in remote work. The researchers' findings showed a significant difference between digital productivity and literacy among WFH employees. This means that if the digital productivity of the employee is low, so is their literacy, and vice versa. Hence, this study can help institutions establish digital workshops for employees, particularly in the field of organizational psychology, to address the problem of poor digital skills in the workplace further and potentially propose a solution.

Keywords: Digital skills, traditional work setting, remote work, employees' performance, workplace



STEh-SR-022:**Social-Emotional Competencies and Student Engagement of Junior High Students in the Blended Learning Modality**

Corpuz, Meca Jade M., Francisco, Richelle D., Kimayong, Ellen Gae A., Bahni, Florence N., PhD

Limited opportunities for social and emotional learning and widespread changes in how students engage with the education system were brought about by the socially distanced learning during the COVID-19 pandemic. Many factors can affect student engagement in school. Existing research found that social-emotional competencies influence student engagement. This study aimed to compare the levels and determine the relationship between social-emotional competencies and student engagement of junior high students in blended learning in terms of sex, grade level, curriculum, perceived socioeconomic status, birth order, and daily household responsibility. A quantitative research approach, specifically the descriptive-comparative and descriptive-correlational survey design, was used to examine the social-emotional competencies and student engagement of a population of 554 junior high school students. Findings revealed that the social-emotional competencies of Grade 7 are the highest among all the grade levels. At the same time, female student engagement is higher than male engagement. Furthermore, social-emotional competencies and student engagement have a significant relationship. The study's findings can be a basis for the development of activities and programs for the Homeroom Guidance subject of junior high school, as the study discovered that the students' levels of student engagement are moderate.

Keywords: Academic engagement, emotional skills, hybrid learning, learning engagement, social-emotional learning, social skills



STEh-SR-023:

Understanding Group Cohesion and Teamwork Among College Students in Online Learning

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Abella, Maylyn Grace J., Layugan, Jasmine Nicole V.,
Kristine Ann L. Israel, MAEd*

The shift from face-to-face to online mode of learning has impacted student's teamwork. Existing studies show its relevance mostly to sports, medical fields, organizations, and the workplace but limited to academic settings, especially in the online mode of learning. Thus, the pursuit of the study aims to explore the role of group cohesion in teamwork among college students of Saint Mary's University (SMU) during online learning (n=365). This project uses a quantitative approach, utilizing a descriptive-comparative-correlational survey design. Descriptive surveys are used to measure the demographic profile, the level of group cohesion, and the level of teamwork of the respondents. Moreover, a comparative approach is used to contrast the level of group cohesion and teamwork of college students to their demographic profile. Furthermore, a correlational approach is used to determine the relationship between the level of group cohesion and teamwork. Results revealed that group cohesion and teamwork vary between sexes, ages, schools and year levels, and group sizes. Moreover, the results presented a positive relationship between group cohesion and teamwork. Therefore, with respect to the results of the study, recommendations were made for the institution, college students, teachers/instructors, and future researchers.

Keywords: Academic setting, face-to-face, sports, medical fields, organizations, workplace



STEh-SR-024:

Prosocial Behavior Among Emerging Adults

*Bitla, Jane C., Ortal, Joshua D., Patnaan, Kristel Slai F.,
Bryant M. Soliven, MAEd*

Cooperation, mutual aid, and prosocial behavior are significant for a society. Thus, it is essential to comprehend how prosocial behavior develops throughout crises and to identify variables that foster social conscience. This study aimed to determine prosocial behaviors among emerging adults. The study used a quantitative research design, specifically the descriptive-comparative survey, to show emerging adults' prosocial behaviors when they are grouped according to their sex, course, and socioeconomic status. Using Slovin's formula, a total of 368 college students were chosen to participate in this study. The researchers used a proportional stratified sampling technique among all college students from the four strata (SAB= 86, SEAIT=98, SHANS=123, and STEH=61), giving an equal chance of being chosen as research participants. The research highlighted that while certain types of prosocial behaviors, such as dire, anonymous, and compliant behavior, are consistently high among students, others, like public and emotional prosocial behavior, vary across courses. Notably, gender and socio-economic status do not significantly impact prosocial behaviors, indicating the need for interventions that cater to individuals from diverse backgrounds. The study emphasizes the importance of individual factors and social environments in fostering prosocial behaviors, suggesting the design of interventions accordingly. Future research should focus on exploring the factors contributing to variations in prosocial behavior among students and examining the impact of interventions.

Keywords: Altruism, dire, empathy, public, voluntarism



STEh-SR-025:

**University Students' Active Procrastination and Its
Relation to Emotional Intelligence**

*Tifang, Stefanie Mae P., Tayaban, Lorraine B., Donato,
Reymar M., Leslie Doris Divina, MAEd*

Procrastination is a prevalent phenomenon that greatly troubles individuals and society. Various studies have shown that students' procrastination is of different types, namely academic, passive, and active. However, this study focused on active procrastination, which refers to the adaptive behavior of students that is intentionally delayed as a means of enhancing motivation without compromising valued outcomes. This study examined the relationship between university students' active procrastination (AP) and emotional intelligence (EI). A quantitative approach was used in this investigation, specifically a descriptive-correlational and descriptive-comparative one. A proportional-stratified sampling technique was administered to obtain 368 respondents enrolled at Saint Mary's University. The findings indicated that respondents' EI is at a high level, especially in the dimensions of self-motivation, self-control, social awareness (empathy), and social skills, yet at a moderate level of self-awareness. Meanwhile, the respondents have a moderate level of AP. The overall result showed no significant relationship between AP and EI. Thus, it is recommended that future researchers explore the four components of the AP scale to find out its relationship with EI and utilize qualitative methods in gathering data regarding active procrastination.

Keywords: Emotional quotient, academic procrastination,
passive procrastination, undergraduate,
dimensions



STEH FACULTY RESEARCHES

STEH-FR-01

Step-Up: The Making of a Marian Leader

*Ma. Cristeta M. Aduca, Ruby Lyn R. Nuestro, John G. Tayaban,
Kristine Anne Israel*

This research is conducted to determine the career stage of school leaders under the five (5) domains of the Philippine Professional Standards for School Heads (PPS-SH) and school leader's professional practice using the Success Competencies of Southeast Asian School Heads. The researchers considered the descriptive survey to be the most applicable method in determining the school leader's career stage and practice. A questionnaire was then given to the school leaders as the main instrument to gather the data needed. It revealed in the frequency distribution of School Leader Respondent's Profile the following: age, majority of the respondents belong to 41-50 years of age, female, whose educational attainment belongs to those with Master's Degree, mostly from the tertiary level, five and below years of experience as a school leader and have attended seminars or trainings on leadership/management. It further revealed that the school leaders are in career stage 2, particularly in the following domains: leading strategically, managing school operations and resources, focusing on teaching and learning, and building connections. School leaders are categorized in career stage 3 for developing self and other domains. As to the school leader's professional practice, they can do well in their leadership roles and responsibilities. However, they need to develop more in some aspects of the leadership responsibilities in the areas of financial management, strategic thinking, and innovation. It is vital to engage school heads to actively embrace a continuing effort to attain high levels of proficiency through leadership developmental formation.

Keywords: school leadership, professional development,

instructional leadership, leadership formation



STEH-FR-02

Status of Students' Post-Pandemic Physical Fitness: Towards a Functional Institution-based Intervention Program

*Dr. Mary Grace Medina-Bulatao, Miss Ronda Lubong Navalta,
Mr. Michael Ancheta Gabriel, Mr. Niño Nadera Baldonado, &
Dr. Zayda S. Asuncion*

As prescribed by DECS Order No. 58, s. 1990, college students should enroll in physical education to complete their degree. More than that, physical education is an integral part of the educational system designed to promote the optimum development of the individual through total body movement in the performance of properly selected physical activities. This study was conducted to determine the post-pandemic performance level of all freshman college students enrolled in FIT HW in AY 2023-2023 in the physical fitness tests designed to measure the fitness level of students in terms of their speed, trunk flexibility, leg power, muscular strength, agility, and endurance and to ascertain the effectiveness of the intervention activities in their post-test. As a descriptive study, data were analyzed using the Standard Physical Fitness Test Transmutation Table, utilizing frequency counts and percentages to describe the respondents' age, sex, BMI, somatotype, physical activity readiness, and overall physical fitness performance level. The results indicate that the respondents were excellent in terms of flexibility. Additionally, an improvement in the respondents' leg strength and power, as well as in their agility, was observed. The respondent's performance in basic planking revealed that they had excellent general endurance. However, the respondents' performance in the other physical fitness test activities, which assess speed, arm strength, abdominal strength, leg strength, and balance, ranged from fair to very poor, suggesting the need for improvement. Hence, to ensure the students' growth and development, intervention activities should be implemented on an everyday

basis. Physical fitness tests and intervention activities should take place not only during the students' PATH FIT classes but should be considered self-help physical activities that can be carried out even outside their classes. Thus, a module in self-help physical activities is indeed necessary.

Keywords: Physical fitness test, physical activity readiness, gain scores, body mass index, somatotype



STEH-FR-03

Farm Mechanization among Tenant Farmers in Northern Philippines: Implications to Cultural Practices, Gender Roles, Household Food Security, and Socio-Economic Status

Samuel B. Damayon, Pearl Via S. Coballes**, Kerwin N. Bayot, Brian M. Baristo, & Rodora P. Tipay*

Nueva Vizcaya is an agricultural province and could be one of the top rice producers in Region 2, Northern Philippines. The province introduced mechanized farming as part of the government's attempt to improve food security. Most studies on farm mechanization focused on its effect on productivity; this study explored its effect on cultural practices, gender roles, household food security, and socio-economic setup amidst the mechanization of farming materials viz-a-viz tenant farmers' lives using a qualitative design. The study found that farming in the province is not mechanized. Tenant farmers engage in small-scale farming that does not guarantee high profits. Gender roles were affected differently as mechanization was utilized. Traditional cultural practices such as *bayanihan* and *ammuyo* were lessened due to mechanization. The farmers recommended intensified government programs to promote progress in farm mechanization.

Keywords: Agricultural machinery, landless farming, commercial agriculture, subsistence farming, gender

STEH-FR-04

**Freshman College Students' Extent of Knowledge,
Skills, and Dispositions on Civic Engagement: Towards
Nurturing Social Entrepreneurship**

*Susan A. Galamay, Judith P. Daguio, Jonathan Vergara,
Benjamin Messakaraeng*

This study aimed to determine the extent of knowledge, skills, and dispositions of the freshman students on civic engagement. The study employed a quantitative-qualitative research design. In the quantitative approach, a descriptive-comparative technique was used to describe the extent of knowledge, skills, and dispositions of the freshman students on civic engagement and to determine the relationship among the variables. The research tool used for this study was adopted from the Civic Engagement Survey, which was developed during the spring 2008 semester by the Southwest Minnesota State University (SMSU). The study also employed qualitative methods to surface responses, which were used to provide in-depth discussion through open-ended interview guide questions. The respondents of the study were first-year students from the School of Accountancy and Business, School of Health and Natural Sciences, School of Teacher Education and Humanities, and School of Engineering, Architecture, and Information Technology. Findings showed that the freshman students' extent of knowledge, skills, and disposition on civic engagement was moderate. Moreover, socioeconomic status affects the freshman students' extent of knowledge, skills, and disposition toward civic engagement. This implies that there is a need to strengthen this particular concern through activities that will help nurture the students' civic engagement. The study further recommends enhancing students' knowledge, skills, and dispositions to civic engagement through the provision of activities such as classroom, co-curricular, and extra-curricular activities.

Keywords: Age, community project, religious affiliation, service learning, sex, socio-economic status



STEHR-FR-05**In the Eye of the Beholder: Senior High School Learners' Perceptions of an HEI's Brand Equity**

*Clara M. Gonzales, Angela Garra, Joman Juanino Baliton,
Queen Nessellyn Galicia, & Zuen Azzaleah Tolentino*

Grounded on the social exchange theory of communication, this study aimed to determine the brand equity of Saint Mary's University as perceived by senior high school learners from SMU's feeder schools. The theory postulates that if people feel they can benefit from an engagement despite the costs, they will continue to engage with it. A total of 204 Grade 12 learners comprised the respondents of this study. There were more male than female respondents. The majority were enrolled in public schools; more than one-half were in the GAS track, followed by STEM, HUMM, TechVoc, and ABM. One-fifth of the respondents preferred BS Criminology, followed by BSN. Top choices also included Hospitality Management, Civil Engineering, IT, Architecture, and Biology. Among the twelve indicators of brand equity, three themes emerged as very important, namely brand trust, supporting library services, and core-emotional environment. This indicates that a brand's trustworthiness, library services, and emotional environment are very important to the respondents. The respondents were aware of all the basic information about SMU. However, the highest is their awareness of the different program offerings of SMU, followed by their awareness that the course they intend to enroll is available at SMU and the location of SMU. The respondents' profile variables are unlikely to be a significant predictor of senior high school learners' perceived importance of brand equity of SMU and their knowledge about SMU. In terms of the benefits of studying at SMU, three emerged as the top themes, namely high passing rates, scholarships, and quality education. In terms of the cost of studying at SMU, the top three themes were tuition fees, financial problems, and course offerings. As a general recommendation, the marketing team of SMU should highlight the salient findings of this study in their marketing communication strategies, especially in the production of the next corporate video of SMU since this is the commonly used

promotional material for SMU, both in its internal and external engagements.

Keywords: Curriculum strands, brand trust, core emotional environment, library services



STEH-FR-o6

Student Leadership Engagement in Higher Educational Institutions: A Local Government Unit and University Initiative

Kenneth L. Maslang, Darwin Don M. Dacles, Nicole Anne P. Aquino, Rudolph C. Benito, & Alexis Amor Padilla

Developing leadership in students is a challenging task, and it is an established mandate of higher educational institutions. This study endeavored to provide relevant information on students' portrait of leadership, motivations in seeking out leadership opportunities, and critical thinking disposition in six domains, such as open-mindedness, curiosity, systematicity, truth-seeking, analyticity, and self-confidence. It utilized a combination of qualitative and quantitative approaches through descriptive-comparative research methods. Findings showed that student leaders perceived that leaders are not only making orders but also making themselves an example and inspiring the members of the organization. Leaders are not ideal but practical. Leaders should perform what they preach, and they should not focus on theories but more on action. Leadership should be selfless and focus on service to humanity. Students serve neither at the expense of others nor at a particular prize or something in return. They serve the students unselfishly and do not expect material or non-material benefits. The motivations of students to seek out leadership opportunities could be personal motivation, motivation from other people or circumstances, and, at a higher level, the meaning of life and work. On the level of critical thinking disposition of student leaders in all areas of being open-minded, curious, analytic, truth-seeking, systematic,

and self-confident generally manifests modest desirability. Likewise, findings showed that school, gender, year level, position held, course, and pieces of training attended are not considered factors that could affect the student leaders' perception of leadership. A student leadership program is proposed as an off-shoot of the study.

Keywords: Civic life, critical thinking, motivations and portrait of leadership, responsible citizenship



STEHR-FR-07

**Assessment of the Training Needs of the
Sangguniang Kabataan Officials
and Members and of Bayombong, Nueva Vizcaya**

*Erwin D. Naval, Ernest Esmeralda, Diwata Donato,
Niña Rheena Salinas, & Jones K. Liwan*

Youth participation in governance is an investment of every nation. RA 7160 created the SK and KK as primary youth organizations mandated to work for reforms, policies, and projects. After three decades, the KK and SK have been blemished with issues such as corruption, political dynasty, mismanagement, skills deficiencies, and incompetence. In 2016, RA 10742 introduced the capacitation of the SK officials with training and seminars to enhance their skills and competencies. The study assessed the training needs of 116 KK members and SK officials of the municipality of Bayombong, Nueva Vizcaya, by determining their knowledge and competencies. This study utilized a descriptive-quantitative type of research. Results of the study show that respondents have a fair knowledge of the Code of Conduct and Ethical Standards, decentralization, and local governance, while poor on Parliamentary Procedures. They have low competencies in effective decision-making, strategic thinking, policy development, planning, and fostering collaboration among the youth. Results show significant differences in their knowledge of the Code of Ethics and Standards, decentralization and local governance, and

Parliamentary Procedures, including their competencies in effective decision-making, strategic thinking, planning, and effective communication. Findings imply that the respondents have weak capacities in managing the KK and SK. Their limited capacities for strategic thinking, policy development, planning and implementation, engaging other youth, and partnership suggest a training program that will capacitate and enhance fundamental skills of KK members and SK officials essential in organizational management and legislation.

Keywords: Knowledge, competencies, local legislation, parliamentary procedures, policy development, project execution



STEHR-FR-08

Bolstering Hybrid Facilitation of learner-Centered Teaching Amidst the Challenges of the Post-Pandemic Era

Liberty A. Rosario, Candido Joseph T. Rosario Jr., David A. Cabonero, & Ivonny Lorvin M. Adducul

The study surfaced the emerging level of readiness, challenges, and transition pathway from a temporary online modality of delivery to face-to-face learning with full-swing hybrid facilitation of learner-centered teaching experiences in the post-pandemic era. Out of the 442 tertiary respondents, the level of readiness was rated to a great extent, with a mean score of 3.6. The adjustments made in diverse ways were the dominant challenges that confronted the teaching-learning process. The hybrid modality of learning significantly served as the saving portal to incessantly respond to the emerging needs of time. Challenging dimensions are forwarded as a basis of intervention to keep pace with the evolving demands and to address concerns and issues in the continuity of education. Facilitation of learner-centered teaching opened up diverse avenues. It is meant to bolster, improve, and sustain practices and pedagogies among

teachers and students in the post-pandemic era. With the sudden shift from online learning to face-to-face modality, challenges and barriers encountered were re-evaluated to re-appropriate strategies and methods as a pathway for more efficacy in hybrid learning. Management and scaffolding measures through inspired pedagogies remain paramount in the educational field.

Keywords: Hybrid learning, facilitation, pedagogy, learner-centered teaching, transition, readiness



INSTITUTIONAL POLICY-ORIENTED STUDIES

IPOS-STEHL-Language Dept.-1

Move Analysis of Abstracts in Research Articles Written by American, Filipino, and Korean

Querol, Marites B., & Asuncion, Zayda, PhD

Abstract research writing has found its place in the present milieu, and the academe ranks at the top in the use of research. In research papers, the abstract is a crucial component, as it enables researchers to quickly assess and evaluate a study, thereby making literature reviews and information sharing more efficient. This study explores abstracts in research and the moves and steps present in the three groups of writers: Filipino, Korean, and American. It tries to provide an avenue for comparison and to highlight moves and steps in abstracts. The findings revealed that all five moves - Introduction, Purpose, Method, Product, and Conclusion - were present in the abstracts from all three groups but with varying frequencies. Still, some notable variations in the use of these moves and steps among the three nationalities exist. In terms of the overall number of steps used in the abstracts, the Filipino researchers manifested the highest number, followed by the Koreans, indicating that the two are more detailed in their abstracts compared to their American counterparts.

Keywords: Research, research writing, genres, abstract



IPOS-SHNS-Nursing-2

Employability Tracer Study of Bachelor of Science in Nursing Graduates from a Catholic University in the Philippines

*Joman J. Baliton, PhD, Joan B. Taroma, Sherylou A. Benig,
PhD, Ellery Michelle Quiben, & Peter Tom Callang*

This study assesses the employability of Bachelor of Science in Nursing (BSN) graduates from a Catholic university in the Philippines, aiming to explore program strengths, weaknesses, and relevance. Using mixed methods, it addresses three research objectives. Firstly, it profiles employment status, employer type, current positions, workplace, job search duration, income, and job program alignment. Secondly, it evaluates the relevance of the BSN competencies. Thirdly, it identifies program strengths and weaknesses through graduate feedback. Results show a majority in regular employment, predominantly in private institutions as staff nurses nationally and internationally. Most secure employment within six months, with income generally favorable and current jobs aligning with the BSN program. The competencies acquired match contemporary nursing demands, reinforcing the program's effectiveness. Identified strengths include patient-centered care and critical thinking, while weaknesses encompass limited clinical exposure and faculty support. Recommendations include resource allocation to address weaknesses and reinforce program strengths. This study provides insights into BSN graduates' employability, affirming the program's relevance and effectiveness. Future research could explore longitudinal outcomes and interventions to enhance nursing education and practice further.

Keywords: Competencies, job program alignment, program effectiveness, program relevance



IPOS-LMCDAC-3

Presence, Implementation, Outcomes, and Effectiveness of Community Development and Advocacy Programs of a Private Higher Education Institution

Christopher Allen S. Marquez, PhD, Vince Errol J. Lucas,

Rodora P. Tipay, Candido Joseph T. Rosario Jr., Robert S. Aceret, Laurice Kaye P. Laguinday, Allan S. Guiab, & Heidee P. Liclican

One of the mandates of higher education institutions is community extension. However, instead of only providing and delivering extension and outreach activities to recipients, these have to be evaluated and assessed. This allows for continual improvement of the extension services. This study, therefore, described the presence of systems and implementation processes and assessed their outcomes and effectiveness to determine the impact of the extension services of Saint Mary's University. Results showed that the presence of systems about extension programs was in place from AY2018-2019 to AY2022-2023. However, there were changes due to the organizational changes and the impact of the COVID-19 pandemic. The implementation process is generally the same because they implemented their respective extension programs based on the existing guidelines and procedures. However, the dosage component remains a challenge, specifically in alumni involvement. The outcomes and effectiveness of the extension services conducted by each school have been sustained and have had a high impact. The study recommends that the presence of systems and implementation processes be sustained to target the expected outcomes and maintain a high impact on the community extension programs.

Keywords: Impact assessment, effectiveness, implementation process, presence of systems, outcomes



IPOS-LMCDAC-JHS-4

Community Profiling and Needs Assessment: The Case of Pawak as Partner Community of Saint Mary's University Junior High School and Science High School

Jojilyn L. Anoché, Weyalein L. Balonquita, Shairene U. Napaod, & Judy Ann F. Sondag

This study undertook profiling and assessment of the residents of Pawak, Masoc, Bayombong, Nueva Vizcaya, with the goal of identifying community projects based on the discerned needs. The study used a mixed-method approach utilizing a cross-sectional survey and questionnaire adapted from *Lingkod Maria* Community Development and Advocacy Center (LMCDAC, 2024). The study found existing community problems such as employment scarcity, housing affordability issues, and safety concerns. Despite these problems, there are existing resources for children's education and after-school programs. However, there are discernible gaps in services for children with special needs and opportunities for higher education. Thus, this study recommended approaches to address identified needs in employment programs, educational support initiatives, health and safety, infrastructure development projects, and community engagement initiatives.

Keywords: Educational support, employment scarcity, higher education, housing affordability, infrastructure development



IPOS-LMCDAC-SHS-5

Community Profiling and Needs Assessment: The Case of Partner Barangay of Saint Mary's University Senior High School

Mark C. Balonquita, Humprey Ian Sagabaen, Pearl Desiree Ludan, Mary Joy Mendoza, & Pedelina Buligan

Community profiling and needs assessment are essential to gather relevant information prior to implementing extension projects. This study utilized a survey design to identify profile characteristics, rating of the services offered by the Barangay and its safety, problems encountered, resources available, access to the internet, and the gadget they have access to the internet in the adopted community of Saint Mary's University Senior High School. The findings of the study revealed important insights into the community's profile characteristics of Ipil-Cuneg,

including age distribution, highest educational attainment, status employment, and household characteristics. Generally, the basic services are implemented well, and the Barangay is very safe both day and night. Many household heads earn below the monthly minimum wage. For both communities, the common needs are employment, bug prevention, access to transportation, stopping drinking intoxicated liquors, and high-paying jobs. Some household heads have also identified needs but not for others. Based on the existing advocacy programs of Saint Mary's University, extension project proposals were initially crafted.

Keywords: Needs assessment, community profiling, partner barangay, assessment



IPOS-GTO-6

Mental Ability and Academic Performance: Basis for Policy Refinement on College Admission

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Mental ability has long been identified as one of the key components of academic success. The focus of this present study is to determine the relationship between mental ability based on IQ and academic performance based on the overall general weighted average (GWA) and GWA for minor and major subjects. This study utilized the descriptive correlational method using a standardized psychological test for data gathering. A regression analysis was conducted to determine to what extent the students' academic performance is influenced by mental ability. Respondents were the freshman students of Saint Mary's University during the academic year 2022-2023. It hypothesized that there was a significant relationship between students' mental ability and academic performance. Data from the research was used as a basis for policy refinement on the use of the university's college entrance test result as a basis for admission to board or non-board educational programs in the university.

Keywords: Mental ability, academic success, academic performance, IQ, GWA



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