

**SMU** Research  
Abstracts

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Saint Mary's University Research Center

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**SMU Research Abstracts**  
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## PREFACE

This 2022 volume of abstracts was culled from the research of students and faculty during the Academic Years 2020-2021 to 2021-2022. Because of the pandemic's rigors, the yearly production of researches and the Book of Abstracts were hampered. Data gathering was truly a challenge. The pandemic has kept researchers from physical lab spaces and target locales due to quarantine and lockdowns and methodologies were modified to suit the context of the pandemic, further delaying research projects for months. Social distancing also has added costs to the project, and external and internal funding grants have become more unstable.

Albeit the pandemic provided opportunities. It has become a rich source of innovative research. Many have dealt with understanding the pandemic's complexities and the role of research in providing practical products and services. Despite this, the institution has moved on instead and took the lull by introducing innovative ideas. The institution's unified research agenda, formerly named "Project WEALTH," has been expanded to mirror global, national, and local agendas, thrusts, and mandates. It was renamed as Project WEALTH VERSION 2.0, the Institution's 13-point Agenda for 2021-2026, which mirrors the Strategic Plan of the University for the next six years, especially on Goal 3: Bolstered SMU's transformative engagement with the local and global communities.

Equally, the plague has brought a greater spirit of collaboration among faculty and student researchers. The instructor-promoters program has been expanded, renaming it as the adviser-promoters program, thereby increasing the quality of research papers through the adviser-mentors. The University Research Center has also pushed for a greater call on ethical research by establishing the University Research Ethics Office, which is now undergoing accreditation by the DOST-PHREB. Incentives for advisors and evaluation by panel members were increased. Mechanisms for data treatment were expanded beyond the presence of the pool of data analysts. These and many other innovations have given the institution a chance to reimagine what is possible and take positive actions to move forward.

Like before, many of these papers were disseminated during the yearly celebration of the *Linggo ng Likha at Lingkod*. Quite

a few were presented in external research fora, while some were published in refereed and reputable international and national journal publications. A new mechanism was approved to increase publication, increasing faculty incentives for publication, especially the papers which passed the rigorous peer review processes in Scopus, ISI, and Clarivate-indexed journals.

In 2022, a new mechanism for faculty research utilization was implemented. About 94.1% of conducted faculty research in 2021 was utilized internally and externally - among partner units and target community beneficiaries. To this end, a separate compendium named “Passion for Mission” has compiled all the research utilized in 2022. The challenge of research utilization, identified in a 2016 study as the feeblest, has finally been addressed through this mechanism.

Acknowledgment is due to the administration for its support and those who were able to comply with the university’s quality control mechanisms; the adviser-promoters and instructors, the panel of reviewers and research coordinators, URC staff, student and faculty researchers, heads and staff of offices who continue to conduct needed policy-oriented researches, and those whose love for research has made the difference. There are **206** completed student researches, **23** completed faculty researches, **six** institutional policy-oriented studies, and **six** research collaborations with faculty members of other HEIs, as shown:

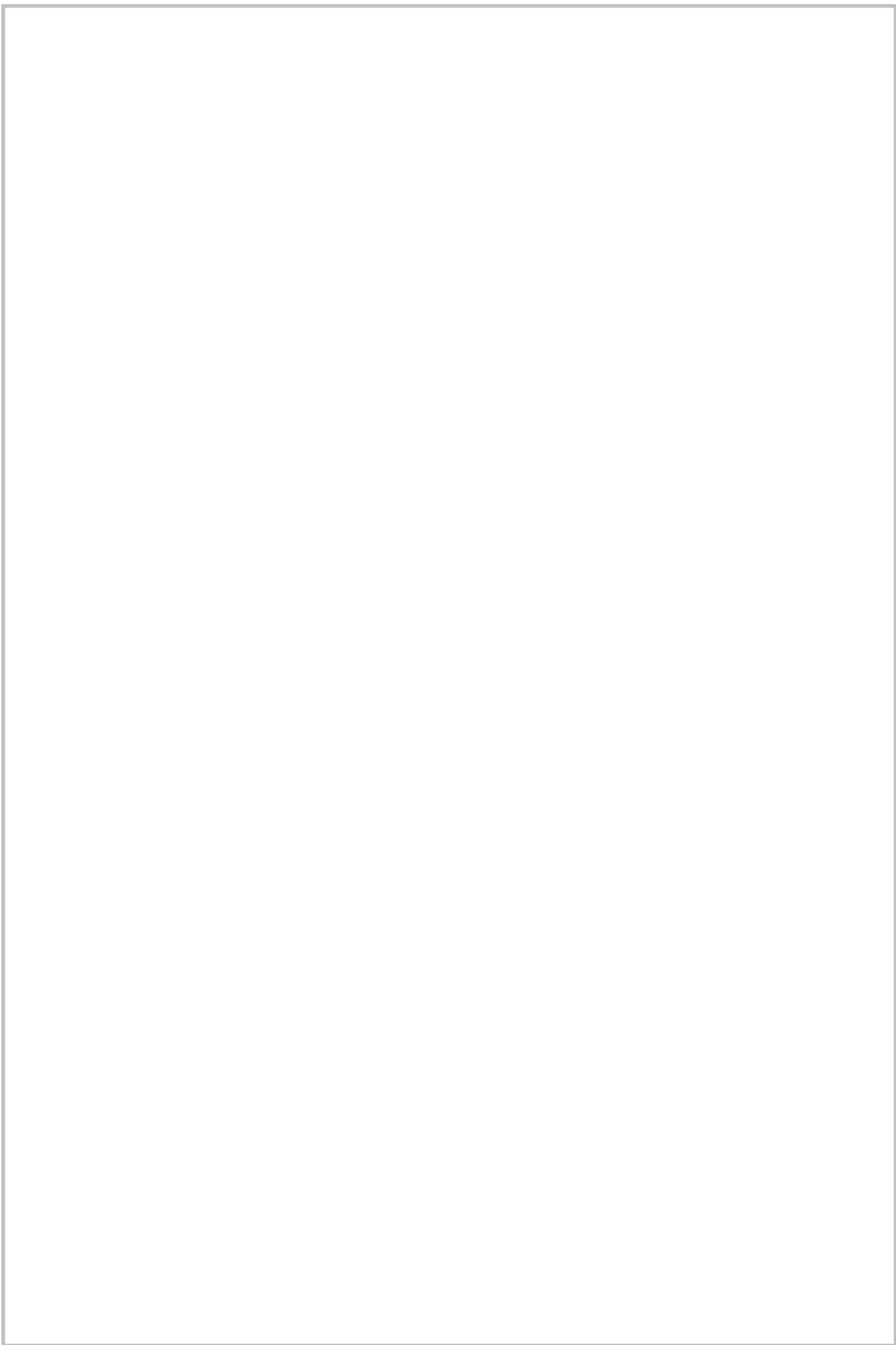
School / Unit	Completed Student Researches	Completed Faculty Researches	Institutional Policy-Oriented Studies	Research Collaborations with Other HEI Faculty	Total
School of Graduate Studies (SoGS)	41	4			45
School of Accountancy and Business (SAB)	26	3			29
School of Engineering, Architecture, and Information Technology (SEAIT)	76	2		1	78
School of Health and Natural Sciences (SHNS)	34	4			38
School of Teacher Education and Humanities (STEH)	29	10	1	3	40
Office of the University Registrar (OUR)			1		1
Lingkod Maria Community Development and Advocacy Center (LMCDAC)			3		3
Office of the Dean of Student Affairs and Services (ODSAS)			1		1
University Learning Resource Center				2	
<b>Total</b>	<b>206</b>	<b>23</b>	<b>6</b>	<b>6</b>	<b>241</b>

Research is genuinely relevant in education. While we ensure that students will have an in-depth knowledge of a topic, scientific and scholarly-written research papers not only contribute to the world of knowledge but are used to converse with the world of ideas – the Book of Abstracts provides ideas for students on which relevant topics or contents in the discipline can be replicated or developed. Journals serve as a future guide for students in helping them seek workable research topics.

Being one of the best features in the PAASCU Accreditation of the School of Graduate Studies, the Book of Abstracts endeavors to continue enticing research-minded people, institutions, and communities for possible uptake of the results of these studies.

DARWIN DON M. DACLES, PhD

*Editor*



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## SOGS STUDENT RESEARCHES

**SoGS-SR-01**

**The Corporate Social Responsibility Practices and Concerns of Business Establishments in Cagayan Valley Region, Philippines: Basis for Sustaining CSR Best Practices and Addressing CSR Concerns**

*Dahlee S. Pascua, PhD Commerce*  
*John Octavious S. Palina, PhD, DBA*

Corporate social responsibility is a way to encourage business firms to perform in a manner appropriate to the desires of the stakeholders, thus causing them to act responsibly for the benefit of the business and society through creating a sustainable social, environmental, and economic development that could, in turn, gain positive image and reputation. This study aimed to evaluate the Corporate Social Responsibility practices and concerns of business establishments in Cagayan Valley or Region 02, which were recipients of the Department of Trade and Industry's Bagwis Award. A qualitative research approach was employed through a semi-structured interview among the selected respondents. Recorded interviews were transcribed and analyzed thematically; likewise, in-depth document scanning was utilized. Findings revealed that CSR practices among business establishments were still developing and that the philanthropic activities were found to be less sustainable and did not gain so much impact on the community's development, as well as to firm's reputation due to the few activities they performed every year that had no continuity or follow-up in one project. It was also revealed that the identified practices focused on schools, community, employee welfare, and the company's economic responsibility, whilst the possible best practices contributed to the

development of education, entrepreneurs, environment, and employees that can be a benchmark for CSR practices among business establishments. However, the planning process, partnership with other agencies, philanthropic CSR projects, CSR budgeting, CSR action plan, and reporting revealed crucial problems that concluded a thorough review of business establishments' planning and implementation process. Therefore, the study recommends that business establishments adopt the proposed CSR framework and CSR action plan template as a reference for planning and implementing sustainable CSR practices.

*Keywords:* CSR projects, economic, ethical, financial, legal, philanthropic, policies, retail business establishments, structure



**SoGS-SR-02**

**Cross-Campus Analysis of Workplace Diversity  
Constructs and Issues: Basis for Enhancing  
Workplace Environment of PSHSS**

*Harold V. Gallo, PhD Educational Management  
John Octavious S. Palina, PhD, DBA*

The study aimed to determine the levels of perception of workplace diversity, how the leaders manage diversity among their employees, and how diversity and its management affect other issues in selected PSHSS Luzon campuses. This study used the mixed methods approach using quantitative and qualitative methods of analysis, specifically the convergent parallel research design. It utilized the descriptive-normative method of research to determine the profile of the respondents, perceived levels of diversity, programs, and measures to address diversity and related issues of employees of four (4) PSHS Luzon campuses, namely Cagayan Valley Campus (CVC), Central Luzon Campus (CLC), Ilocos Region Campus (IRC) and Cordillera

Administrative Region Campus (CARC) during the school year 2019-2020. Data were gathered through the administration of the researcher-made questionnaire, interviews, and focus group discussions. Moreover, frequency counts and means were used in profiling and description, while t-tests, one-way ANOVA, and Tukey Post Hoc tests were used to determine significant differences in the perception of respondents about diversity and its management in line with the profile variables. Results revealed that the respondents highly acknowledged the existence of diversity and management programs such as planning, organizing, directing, and controlling employed by the BSHS leaders. Moreover, it was highly acknowledged that PSHS is naturally diverse regarding employees' backgrounds, interests, and potential and that human resources are not discriminated against because leaders employ inclusiveness through diversity management programs. The varying perceptions of some diversity management programs by gender and geographic location put forward issues of diversity that affect operations. Hence, an enhancement program was strategically proposed.

*Keywords:* workplace diversity, human resource management, diversity programs



**SoGS-SR-03**

**Manifestations and Outcomes of Equitable  
Mathematics Classes in Secondary Schools**

*Arnold T. Pascua, PhD Mathematics*

*Melanie G. Gurat, PhD*

The study explored the manifestations and outcomes of equitable mathematics classes in the Fourth District of Isabela. Manifestations include the classroom structure, classroom climate, pedagogical practices, language and culture support, and social justice education. Outcomes were measured using math performance and attitude toward math. In general, classroom structure, classroom climate, pedagogical practices,

and language and culture support were fair, inclusive, and supportive of all students except for social justice education which was only partially achieved. Quality based on mathematics performance was also partially achieved. STEM students outperformed their counterparts, and socio-economic variables like parents' educational attainment and occupation were related to math performance, indicating inequity in terms of opportunity and resources in learning mathematics. Only 50% of the students had a positive attitude toward mathematics. Several classroom structure variables were positively associated with mathematics performance, including class size, seating pattern, and balanced grouping of gender ratio. The pedagogical practices variables positively associated with performance were regular checking of attendance, calling students by name, the random calling of students, circulating student areas, and various instructional strategies. A weak negative relationship was also found in language scaffolding, support for multilingualism, support for students' voices, variety of assessment formats, display of indigenous artifacts, and use of localized materials. Classroom climate and social justice education did not significantly affect performance.

*Keywords:* classroom structure, classroom climate, pedagogical practices, language and culture support, social justice education, math performance, and attitude



**SoGS-SR-04**

**Remediating the Writing Performance of Struggling  
Writers Through Self-Regulated Strategy  
Development Approach: Towards a  
Module in Remedial Writing for  
Senior High School Students**

Rodny Giverson V. Garcia, MA Language  
Zayda S. Asuncion, PhD

Mastering a complex skill such as writing has become a struggle for a language learner. Providing writing interventions is strongly recommended, but few local studies ventured into this area. This study aimed to diagnose the writing difficulties of less proficient students and improve their argumentative writing performance using a self-regulated strategy development approach in remedial teaching. This quasi-experimental study followed a single case design. A diagnostic writing test was used as an instrument to identify struggling writers. Thirty nine Senior High School students were diagnosed as struggling writers, and the word was subjected to a four-week writing intervention. Respondents were trained to follow the STOP and DARE writing strategies (Harris & Graham, 2008). Two inter-rates mediated the scoring of the outputs in the diagnostic and post-tests following the criteria of Jacobs et al. (1981). The diagnosis showed that struggling writers tend to perform poorly in all areas of writing performance. The finding that there were significant differences between the initial and final outputs of the participants suggested that the SRSD approach could be beneficial for struggling writers in improving their argumentative writing, specifically in terms of content, organization, vocabulary, and language use. With the study's methodological limitations, the implications of the results were further discussed, along with their significance to language teaching and research.

*Keywords:* argumentative writing, content, language use, mechanics, strategy instruction, vocabulary, and organization.



**SoGS-SR-05**

**Pantawid Pamilyang Pilipino Program (4Ps) in the Philippines: Its Effects on the Academic Achievement, Attitude on Schooling and Self-Esteem of Student-Beneficiaries in a Private School in the Apayao Province**

*Fr. Joker Moamar B. Gamatero, MAEd Educational  
Administration*

*John Octavious S. Palina, PhD, DBA*

Utilizing mixed methods through survey, document scanning, and focus group discussions, this study gathered information on the profile of the 4Ps student-beneficiaries of the Our Lady of Lourdes High School Inc., located in Kabugao, Apayao. The study revealed that more female than male student-beneficiaries in the program was enrolled across secondary grade levels. Some student-beneficiaries stayed in their own house, while others stayed in boarding houses and worked as a house help. Most heads of families subsisted through farming, whose income was just enough for their families to meet basic needs. Regarding the education of heads of families, the majority were either high school graduates or undergraduates. The students' general weighted averages indicated that few needed improvement, with a GWAS of 79 and below. Many had satisfactory ratings, with GWAs from 80 to 84. There was no significant correlation between and among the students' academic performance, attitude toward schooling, and self-esteem. The students had similar views and experiences about what education is and why it is important for them. The student-beneficiaries experienced myriad challenges in their education. Many of them stayed in boarding houses or worked as house help. The majority originated from families who subsisted through farming and whose income was either just enough for the family and could hardly save or with very little income and sometimes not enough to meet the family's basic needs. They also came from large families whose heads were either high school graduates or high school undergraduates. Despite their conditions in life, the majority of the students had good academic standing. The students' attitudes toward schooling and self-esteem had no bearing on the students' academic achievement. The students believed that attaining good education was a way out of poverty and enhanced social prestige and people's respect. Two identified challenges in this study were staying in boarding houses because their homes were too far from the school and needing extra work since the subsidy

was insufficient to pay for their tuition fees, finance school projects, food, and others. The proposed intervention program of establishing a dormitory for male and female 4Ps beneficiaries was seen as an excellent response for alleviating the students' condition in life.

*Keywords:* poverty, poverty alleviation schemes, school performance, and self-supporting students



**SoGS-SR-06**

**Causative Factors that Enhance Institutional Research  
Lifeway and Articulations on Barriers to Promotion:  
Basis for Relevant Research Policy and  
Recommendations**

*Jesus T. Velasco, MAEd Educational Administration  
Darwin Don M. Dacles, PhD*

This study gathered information on the extent of the contribution of some causative factors believed to influence the research lifeway of Nueva Vizcaya State University. Findings in this study revealed that the top five causative factors that greatly contributed to enhancing the institution's research lifeway were the conduct of a research capability building program, the presence of a financial reward and merit system, proactive institutional research policies, the presence of a research lead unit, presence of a research funding, adequate research infrastructure, equipment or materials, and enhanced research work conditions, and adequate research inter-institutional collaboration. When compared across the ten causative factors, there were significant differences. Among some research activities currently experienced by the researchers were utilizing mixed methods in various disciplinal studies, acting as respondents to surveys or experimental research subjects, working on product development, mentoring activities, and helping undergraduate students in their research activities. The teachers believed that research activities had developed their

research skills and motivated them to pursue their graduate or postgraduate studies. Among the barriers to the promotion of a more positive research lifeway in the institution were inadequate time to enhance researchers capabilities due to teaching overloads, inadequate mentoring of faculty members, very minimal involvement of faculty researchers, inadequate research capability programs, complacency of faculty members, lacked of equipment or materials to support research activities, few faculty with expertise on research, inadequate institutional funds for research, inadequate information dissemination, very few funding agencies, absence of a data treatment center, limited SPSS software, inadequate knowledge about how to treat data in relation to the specified research problems, timely release of funds, inadequate knowledge on institutional research policies, inadequate information dissemination of research policies, outdated REBD policies, multi-tasking roles, unutilized researches, lack of connection with industries or communities to utilize research results, inadequate partnership or linkages with other institutions, lack of interagency or industry partner dialogues, and limited MOAs or MOUs for research collaboration. The study concluded that promoting research lifeway in the University was reliant on the conduct of a dynamic research capability building program, the presence of an initial reward and merit system, proactive institutional research policies, a dynamic lead research unit, adequate research infrastructure, equipment or materials, and enhanced research work conditions. Moreover, the researchers had varied perceptions of the extent of the contribution of the ten causative factors. The type of research conducted, research activities, faculty engagements, determination of research impact, and institutional research policies greatly helped promote the research lifeway. They also encountered multifaceted challenges in the promotion of a dynamic research lifeway. Lastly, the proposed policy recommendations crafted in this study were seen as relevant since these were rooted internally and in the experiences of the researchers.

*Keywords:* applied research, basic research, causative factors, research capability programs, research culture, research experts, and research lifeway

**SoGS-SR-07**

**Antecedents of Students' Dropping-Out: Towards A  
Proposed Intervention Program**

*Jessie S. Balut, MAEd Guidance and Counseling*  
*Edwin Edilberto N. Mania, EdD*

Using descriptive-comparative and correlational research designs, this study gathered information on the socio-demographic profile of students at risk of dropping out of a public secondary school. It also determined the extent of influence of some factors as possible causes and reasons for dropping out of students. The study's findings revealed that of the 114 students at risk of dropping out, most were male students, mostly aged 15 to 16. There were more students whose fathers finished high school than their mothers. In terms of economic status, they were either classified as having sufficient income but could hardly save and have much property and could buy whatever they liked. Most of them had parents who were married. More respondents had one to three siblings than those who had four or more. A little more than half of the respondents were engaged in various sports; some engaged in technology-based gadgets, but almost 15% were engaged in smoking and drinking. In terms of parenting styles, the majority had authoritative parents. Some peer, personal, and school factors influenced the students' decision to drop out moderately. The students also had varied perceptions of the reasons for dropping out. Leisure activities engaged in had a direct correlation with peer and home factors. The study concluded that most students at risk of dropping out were males. The majority of their parents finished high school education. The families had sufficient income and property; most had married parents, while few had solo parents and many siblings. In terms of leisure engaged in, the majority were into various sports. Most of the students' parents followed the authoritative parenting style. Peer, personal, and school factors significantly influenced the students' decision to drop out. The students had varied perceptions of the causes or reasons for dropping out. School

and peer factors greatly influenced their decisions to drop out. Leisure activities like sports and technology-based gadgets are directly related to peer and home factors. The proposed school intervention program highlighted the need for the school to monitor students' attendance to minimize truancy and do something to keep the students in school.

*Keywords:* public school education, leisure, parenting style and truancy



**SoGS-SR-08**

**Foundation, Management Delivery, and Accountability  
of the Revitalized Homeroom Guidance Program of a  
Junior and Science High School: An Evaluation for  
Program Enhancement**

*Priscilla Anne R. Bangad, MAEd Guidance & Counseling  
Pearl Via S. Coballes, MAEd*

This research assessed the Revitalized Homeroom Guidance Program (RHGP) implemented by the Saint Mary's University Junior High School and Science High School for the academic year 2018-2019 in the foundation, management, delivery, and accountability. Utilizing the descriptive-evaluative approach, quantitative and qualitative data were gathered to determine the status of the RHGP in the four areas as assessed by the homeroom advisers, RHGP coordinator, high school principal, and students. The study further determined the skills or competencies that should be further developed or enhanced among homeroom advisers to achieve the goals of RHGP, as well as the challenges encountered by the key actors in its implementation. The results revealed that the status of the RHGP's foundation, management, delivery, and accountability could be further enhanced. Likewise, the homeroom adviser should further develop competencies in teaching techniques and strategies, curriculum content, professional values and practice,

and classroom management. From these results, the researcher formulated relevant recommendations to improve the RHGP.

*Keywords:* ASCA national model, homeroom adviser, RHGP curriculum



### **SoGS-SR-09**

#### **Guidance and Counseling Needs of Students of the Catholic Schools in Ifugao: Basis for a Proposed Centralized Comprehensive Guidance Program**

*Frances Joyce D. Calacal, MAEd Guidance and Counseling  
Lorvin M. Adducul, PhD*

This study utilized both quantitative and qualitative analysis to assess the counseling needs and concerns of the high school students of the Catholic schools in Ifugao, namely Assumption Academy in Mayoyao, Immaculate Conception in Banaue, Don Bosco High School in Lagawe, San Francisco High School in Lamut, and Saint Joseph School in Kiangang. The study respondents were 514 students selected through stratified random sampling and 50 administrators and teachers based on their position and the class they were handling. Results revealed that: all students agreed in identifying personal, academic, and career areas with moderate needs requiring assistance from their counselor. Male, female, and gay respondents agreed in identifying the career domain as the highest area requiring assistance from their counselor. In contrast, lesbian respondents identified the academic area as their highest area, which required assistance from their counselor. Likewise, results showed that the highest need was focused on career-related concerns across all grade levels. Further, all administrator-respondents agreed that the students needed assistance from their counselors in the personal, peer, family, academic, and career areas. Lastly, based on the needs assessment results, a

centralized, comprehensive guidance program was recommended specifically for the Catholic schools in Ifugao.

*Keywords:* counseling needs, guidance program, needs, needs assessment



**SoGS-SR-010**

**Socio-Demographic, Psychological, and Resource Allocation Determinants of Academic Performance Among College Freshmen of a State University: Basis for a Proposed Guidance Program Enhancement**

*Lilibeth Haya Cawilan, MAEd Guidance and Counseling*  
*Kristine Anne L. Israel, MAEd*

School counselors have a crucial role in implementing guidance and counseling programs to ensure students' well-being in personal, social, academic, and vocational domains. This descriptive-comparative and explanatory study aimed to determine the predictors of academic performance among the college freshmen of Ifugao State University in socio-demographic, psychological, and resource allocation variables. This study used the Academic Motivation Scale by Vallerand et al. (1992), Personal Self-Concept Scale by Goni et al. (2011), and the researcher-made Family Resource Allocation Scale. Results of the Multivariate Regression Analysis revealed a reduced regression model consisting of six predictor variables which could explain 20% of the variation in academic performance, sex, intrinsic motivation to accomplish, self-fulfillment, self-concept, and emotional resource allocation positively predicted academic performance. Extrinsic motivation introjected and economic resource allocation negatively predicted academic performance. Hence among college freshmen of IFSU-Lagawe, better academic performance tended to be attained by females who were intrinsically motivated towards accomplishment, less

extrinsically motivated (introjected), personal self-fulfillment, and emotionally supported by the family, despite less economic resource allocation. Based on the significant findings of the study, a proposed enhancement of IFRS use to be integrated into the guidance program was done.

*Keywords:* academic performance, academic motivation, personal self-concept, family resource allocation



**SoGS-SR-011**

**Influence of sports in the Holistic Development of  
Grade 10 Students: Basis for Relevant  
Sports Program**

*Carissa Mae R. Almendra, MAEd, Physical Education*  
*Ronda L. Navalta, MAEd*

Utilizing the descriptive comparative design, this study gathered information on the various indoor and outdoor sports and e-games indulged in by the Grade 10 students, as well as the perceived extent of influence of sports participation of students along four domains, namely: social-cultural, physical/health, intellectual, and values/behavior development and compared these perceptions across the four domains. Findings in this study revealed that the top-three most preferred outdoor sports were Javelin throw, biking, and running. The top-three indoor sports were badminton, basketball, and volleyball. The top three e-games played were Mobile Legends, League of Legends, and PUBG. Moreover, the Grade 10 students perceived their sports participation as highly contributing to their attainment of positive values or behavior and development. Meanwhile, their sports participation was perceived as highly impacting their intellectual development. The Grade 10 students' perceptions indicated significant differences in the extent of influence of their sports participation when compared across the four domains. The study concluded that a great majority of students

indulged in indoor sports. In contrast, very few preferred outdoor sports, and many students played electronic games. The grade 10 students considered their sports participation immensely developing their positive values or behavior and their social, cultural, physical, health, and intellectual faculties. They also varied in their perceptions of the influence of sports participation in developing their positive values or behavior and their social, cultural, physical, health, and intellectual faculties. Lastly, the sports development program crafted in this study was seen as relevant to increase the participation of students in both outdoor and indoor games and the development of their positive values or behavior and their social, cultural, physical or health and intellectual faculties.

*Keywords:* cultivation of wholesome values and behavior, intellectual development, physical or health development, social-cultural development



**SoGS-SR-012**

**Student-Athletes' Motivational Climate and Motivation  
Towards Sports and Academics: Magnitude and  
Correlates**

*Benjie T. Calaramo, Jr., MAEd Physical Education  
Ronda L. Navalta, MAEd*

This study centered on the student-athletes' motivational climate and motivation towards sports and academics using descriptive, comparative, and correlational approaches. The respondents were 170 student-athletes across all sports. They were assessed based on age, sex, year level, GPA, ethnicity, and sports event. The Perceived Motivational Climate in Sports Questionnaire-2 (PMCSQ-2) and Student Athletes Motivation Toward Sports and Academics Questionnaire (SAMSAQ) were used to assess the magnitudes and correlates. Results revealed that the motivational climate afforded to the student-athletes

was encouraging and that they were more drawn to mastering skills in their field of discipline than merely winning. Further, the motivational climate experienced by the student-athletes showed a positive and negative association with their age, year level, and GPA. Moreover, the study also revealed that regardless of sex, ethnicity, and sports event, the participants' drive was the same. They had a stronger drive to perform in their chosen field of sports than the other domains regardless of their characteristics except for ethnicity, which showed a varying impact on the possessed degree of willpower. The inspiring motivational climate experienced by the student-athletes influenced their drive and efforts to achieve better and succeed in their chosen field of sports, academic endeavors, and future careers.

*Keywords:* motivational climate, motivation, sports, academics



**SoGS-SR-013**

**The Physical Fitness Performance of Selected Grade Eight Students in Relation to Lead-Up Games: Towards an Enriched Curriculum Map**

*Mark Errol E. Cutaran, MAEd Physical Education  
Mary Grace M. Bulatao, PhD*

This study focused on investigating the profile and the physical fitness performance of grade 8 students of Saint Mary's university Junior High School and Science High School towards enriching the curriculum map by integrating the proposed four lead-up games. It aimed to improve the physical fitness performance of the students in the seven physical fitness tests using the proposed four lead-up games. This study used a descriptive-quasi-experimental design to describe the students' profiles, and pretests and posttests were conducted. The students' performance through physical fitness tests was

evaluated using a standardized physical fitness card with five proficiency levels. It was analyzed using percents, frequency counts, crosstabulation means, and standard deviations. Findings revealed a significant difference in the physical fitness performance of grade 8 students before and after the conduct of lead-up games using the Wilcoxon Signed Rank Test with a 0.05 level of significance. Thus, the four proposed lead-up games could be integrated to enrich the curriculum map in grade 8 physical education.

*Keywords:* curriculum map, physical fitness tests, physical education, students' performance



#### **SoGS-SR-014**

### **Recreational Activities as Stress-Coping Mechanisms Among College Students: Basis for Recreational Plan**

*Johanna Carla A. Padua, MAEd Physical Education*  
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Using a quantitative approach in research using a survey questionnaire to gather data, this study endeavored to determine the various stressors and coping mechanisms among college students in Nueva Vizcaya State University, Bayombong Campus. It also determined the level of stressors and the extent of the importance of the identified relaxation activities, which served as coping mechanisms among students. The study found that academic and personal aspects were considered to be moderate stressors, while family, financial and social stressors had little significance concerning their influence on the level of stress in college. Further, the students found music, dancing, and playing computer/video games the most effective coping mechanisms for dealing with stress. Meanwhile, hedonic activities or negative coping strategies were not practiced by students. Female and male students similarly perceived the

stressors and recreational activities as coping mechanisms. Sex variables then had no bearing in determining any type and level of a stressor and recreational activities among students. Likewise, socioeconomic and BMI also were found not to affect the stress felt and practiced by the students. However, course or degree was considered a factor in determining stress levels and student coping mechanisms. The recreational plan presented in this study incorporated the salient findings of the study.

*Keywords:* academic stressors, mental activities, recreational activities, social activities, sports and exercises, stress coping mechanism



**SoGS-SR-015**

**An Integrated Curriculum: A Proposal to Merge  
Filipino and Araling Panlipunan in Grade 2**

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This qualitative study aimed to assess the learning competencies of the Filipino and Araling Panlipunan curriculum in Grade 2 at Saint Mary's University Grade School in terms of content, instruction, and assessment towards conceptualizing a proposed curriculum in the integration of Filipino and Araling Panlipunan. The study used document scanning to review the Department of Education Curriculum Guide in Filipino and Araling Panlipunan for Grade 2 and generate a content map of the Filipino and Araling Panlipunan curriculum in Grade 2. Semi-structured interview and focus group discussion was utilized to gather data on the insights and views of the respondents regarding the similarities of Filipino and Araling Panlipunan in Grade 2 in terms of contents, instruction, and assessment. The study's findings revealed that the curriculum in Filipino and Araling Panlipunan for Grade 2 could be integrated; merged as one. The two subjects were connected in content,

instruction, and assessment. The content in Filipino and Araling Panlipunan were not similar in general but could still be merged using the contents of Araling Panlipunan in teaching grammar and skills in Filipino. On the other hand, the two subjects could be merged in terms of instruction because both subjects used the same language (Filipino), and teaching techniques, methods, strategies, and approaches could be utilized in teaching. The two subjects could be combined because, in terms of assessment, both could utilize common assessment methods and tools. The results implied the realization of a proposed integrated curriculum for Filipino and Araling Panlipunan in Grade 2 following the standards in integrating curricula such as balance, adaptation, learner-centered, continuity, flexibility, and functionality.

*Keywords:* curriculum, curriculum development, curriculum integration



**SoGS-SR-016**

**Decongesting Curriculum: A Proposal to Merge  
Filipino And Social Studies in Grade 1**

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This study employed the qualitative method. It gathered non-numerical data based on the interviews/guide questions from the respondents as well as scanned documents that supported the integration of Filipino 1 and Araling Panlipunan 1 curriculum for the pupils in a private Catholic elementary school. This study aimed to assess the curriculum of Filipino and Araling Panlipunan in Grade 1 at Saint Mary's University Grade School, A.Y. 2019-2020, towards the conceptualization of a proposed integration of Filipino and Araling Panlipunan Curriculum. The findings suggested that the two subjects could be integrated. It was found that most of the content

competencies and standards of Filipino and Araling Panlipunan in Grade 1 were related and showed similarities concerning content. Teaching Filipino curriculum focuses on reading, writing, listening, oral communication (*pagbasa, pagsusulat, pakikinig, at pagsasalita*), and the language or grammar part. For reading, Araling Panlipunan 1 content was injected as a springboard. It was composed of the inner self, family, school, and community. In integrating both subjects, content could be contextualized, enhancing learning skills like listening, speaking, reading, writing, and viewing.

*Keywords:* integrated, competencies, Filipino Subject, Araling Panlipunan Subject, springboard, contextualized and enhancement.



**SoGS-SR-017**

**Basic Education School Leaders Instructional  
Leadership Competence and Management  
Behavior: Towards Enhancement Program  
for Building Bridges Between Supervision  
and Teaching**

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Utilizing the descriptive-comparative-correlational designs, this study determined the instructional leadership competence of Saint Mary's University Grade School and Junior High School Subject Area Coordinators perceived by them and as experienced by their teachers. Findings revealed that in both grade school and junior high school departments, the respondents perceived the instructional leadership competence of subject area coordinators as great. When compared across the three domains of instructional leadership competence, the grade school coordinators and teachers significantly differed in how they perceived the three domains of instructional leadership

competence of subject area coordinators. In junior high school, the subject area coordinators and teachers had similar perceptions of the instructional leadership competence of their subject area coordinators. Regarding effectiveness in the six core areas of management behavior, the respondents rated the subject area coordinators as greatly affective in management behavior duties and functions. When compared across the six core areas of management behavior, the respondents did not differ in their perceptions of the extent of effectiveness of subject area coordinators. In both grade levels, significant positive correlations existed between the school leaders' instructional leadership competence and the effectiveness of management behavior. The study concluded that the subject area coordinators assessed both departments' immense instructional leadership competence and effective management behavior capabilities. The perceptions and the extent of instructional leadership competence of subject area coordinators across the three domains varied according to departments. The school leaders in both departments manifested immense managerial effectiveness. Likewise, in both departments, the teachers and coordinators had similar perceptions of the managerial effectiveness of their school leaders. Instructional leadership competence positively influences management behavior and vice versa. Hence, the Enhancement Program was deemed useful and relevant to enhance further the skills and capabilities of school leaders in both departments.

*Keywords:* advocating, communicating, implementing, managerial skill, mentoring, planning, and supporting



**SoGS-SR-018**

**Grade School Teachers' Perspectives, Reactions, and Satisfaction on Instructional Supervision: Towards Pedagogical Improvement**

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This study utilized a combination of mixed approaches to gather information on the frequency of some supervisory approaches as experienced and idealized by the grade school teachers. In terms of actual experiences, six supervisory approaches were often experienced. In terms of idealized approaches, five approaches were always idealized. Five out of seven pairs showed significant differences. In terms of instructional supervision, the teachers viewed giving supervisory choices to beginning teachers as moderately important, while teachers greatly considered the aim of instructional supervision in promoting teachers' professional growth, benefits obtained from supervision, and consideration of the developmental stages of individual teachers as important. In drawing the connection between instructional supervision and professional growth, the teachers considered giving the teachers the choices for professional development opportunities as having moderate importance, while the teachers strongly considered supervision as having a clear connection to professional development, knowledge, and the ability to select professional activities, participating in professional development activities and improving classroom teaching. The teachers manifested moderate levels of satisfaction with nine items but greatly manifested satisfaction with keeping the confidentiality of supervisory data. The study concluded that cognitive coaching, peer coaching, and self-directed development were constantly used in the locale but yearned for other supervisory approaches such as clinical supervision, mentoring, portfolios, and professional growth plans. The teachers also varied in their perceptions of the actual and idealized supervisory approaches. The teachers affirmed the immense connection between instructional supervision and professional growth. The teachers' perceptions and experiences of instructional supervision were meaningfully related to supervision, professional growth, and their contentment with instructional, supervisory practices. The recommendations forwarded by the grade school teachers, as synthesized by the researcher, were considered helpful in improving current practices on instructional supervision.

*Keywords:* clinical supervision, cognitive coaching, mentoring, peer coaching, portfolio, professional development, and self-directed development



**SoGS-SR-019**

**Materialistic Tendencies and Spiritual Intelligence of College Students in Relation to Call to Holiness in Today's World: Towards Enhanced Activity Interventions**

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Utilizing the descriptive-comparative and correlational designs, this study identified the extent of materialistic tendencies among Saint Mary's University college students in relation to their spiritual intelligence. It ultimately endeavored to craft a proposed activity intervention in Christian Faith Education subjects to enrich further a life of simplicity, humility, and receptivity among the students. This study revealed that the students had little materialistic tendencies in all three domains of materialism – personal, relational, and spiritual. There was a significant difference in the students' perceptions regarding their extent of materialistic tendencies across the three domains. The students exhibited great spiritual intelligence. A significant correlation existed between the students' materialistic tendencies and spiritual intelligence. The study concluded that the college students lived up to the expectation of the school being a CICM tertiary school to live a life of humility, simplicity, and receptivity to people's needs. They placed God first in their midst, established wholesome rapport with others, and considered material possessions as the least priority. The students had varied perceptions regarding their materialistic tendency and had pronounced spiritual intelligence. The students' spiritual intelligence influenced their materialistic tendency. The intervention in Christian Faith Education subjects enhanced a life of simplicity and humility among students.

*Keywords:* Congregatio Immaculati Cordis Mariae, college students' religious education and training, critical thinking, transcendental awareness.



**SoGS-SR-020**

**An Assessment of a Parish Youth Ministry: Its Pastoral Implications to the Challenge of New Evangelization**

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Youth Ministry is a ministry not apart from the Church itself. It is a ministry undertaken by the Church for and with the youth that unleashes them as co-participants in the mission of evangelization. It is indubitable, therefore, that this study was primarily conducted to assess the Parish Youth Ministry (PYM) in the Parish of Saint Louis Beltran, Solano. It employed the descriptive-quantitative-evaluative type of research. Respondents were 29 individuals who have been serving as youth ministers. Data were gathered using a survey questionnaire. Physical observation and informal interviews with purposively selected individuals (PYC, PYLs, Advisers, and Catechist) were conducted to validate and substantiate the data gathered. Data gathered were treated and analyzed using descriptive statistics (frequency, percentage, mean, and standard deviation). Results showed that most of the youth ministers of SLBP were students and were greatly influenced by the Catholic faith. Also, they had been in the PYM for more than three years. As youth ministers, they varied information seminars and training. The PYM was disclosed as an empowered ministry not separate from the Church that is Christ-centered and Values-centered, primarily focused on doing mission-evangelization to the youth. It has a well-defined VMGO congruent to that of the parish but is not periodically reviewed and evaluated, and revised if needed, and not widely disseminated. Its human resources competently minister to the

youth with a clear goal exemplifying their skills and values. However, there was an insufficiency of Parish Youth Ministers (PYLs). The office is located at the Poong Nazareno Shrine, which was not conducive and accessible because it was too noisy and had no enough working space. More so, it lacked some facilities and formation materials needed. Its financial resource depended solely on fundraising activities, solicitation, and the minimal amount from the parish fund. The PYM setting was usually a parish. Its formation programs, activities, and projects were conducted and implemented to a great extent because of its agents' great participation and support. Also, the Parish Youth Ministers frequently participated in formation programs, activities, and projects. They were very relevant and greatly contributed to their holistic formation. Furthermore, the youth ministers usually encountered financial problems and challenges in inviting participants. The study recommended that Saint Louis Beltran Parish strengthen its support to the PYM to mobilize the youth in doing the mission of evangelization and unleash their passion and creativity in ministry to their fellow youth.

*Keywords:* agents, formation programs, implementation, implication, participation, resources, vision-mission, goals, and objectives



**SoGS-SR-021**

**Primary Pupils' Performance in Word Recognition: A Basis for Remedial Reading Program**

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Using a descriptive approach, this study investigated the word recognition level of 219 Grades 2 and 3 pupils of Saint Mary's University Grade School for the school year 2019-2020. It also included the pupils' reading behaviors and their miscues while

reading, which became the basis of designing a remedial reading program to help improve pupils' word recognition level. Graded texts from the Phil-IRI were used to identify pupils' word recognition levels. The study revealed that among the 219 primary pupils, 84 were under the instructional level, 67 were under the independent level, and 59 were under the frustration level. Nine pupils were non-readers. Generally, the word recognition level of the primary pupils was under the frustration category. Furthermore, the omission was recorded as the most frequently incurred miscue by the pupils while reading. Based on the findings, it was recommended that pupils under the frustration level and non-readers undertake a rigorous reading intervention to improve their word recognition level. The results further implied a need to devise and use an appropriate reading program for the non-readers, the pupils, and their frustration levels.

*Keywords:* Philippine informal reading inventory (Phil-IRI), reading miscues, remedial reading program, omission, transposition



**SoGS-SR-022**

**Physics Laboratory Learning Environment as  
Predictors of Self-Engagement and Achievement  
in Electricity and Magnetism: Towards the  
Development of Supplementary  
Laboratory Activities**

*Reynan A. Dulinayan, MAT Physics*  
*Gloria Vicky A. Antonio, MEd*

This study identified the prevailing laboratory environments, described the self-engagement, and assessed the Laboratory Achievement in Physics of Science, Technology, Engineering, and Mathematics (STEM) students of Nueva Vizcaya. Moreover, the status of the Physics laboratory of a public senior high school

in the same province was described through their compliance with some guidelines of DepEd Order No. 48 series 2006 and adequacy in terms of the available laboratory equipment based on the Grade 12 Curriculum Guide. Furthermore, self – engagement, in terms of learning goal orientation, task value, self – efficacy and self – regulation, and laboratory achievement, were modeled as predicted by the scales of the laboratory environment; namely, student cohesiveness, integration, material environment, rule clarity and open–mindedness using the second – generation Partial Least Square based Structural Equation Modelling (PLS-SEM). A qualitative – quantitative approach was implemented as the primary research framework of this investigation. Results showed that vital regulations recommended by the DepEd Order were not properly implemented. Even though the schools lacked the necessary laboratory facility, they had the potential adequacy for basic material provision. Students had high levels of self-engagement towards Physics, while the laboratory environment had a moderate level impact on the students. The assessment revealed that respondents had low physics achievement in Electricity and Magnetism. Yet, the achievement was positively correlated to self-engagement and equipment availability. Construction of the revised PLS-SEM models demonstrated that student cohesiveness and material environment could adequately predict self-engagement and, together with integration, could adequately predict Physics achievement. Based on the results, supplementary laboratory activities were recommended.

*Keywords:* adequacy, cohesiveness, compliance, integration, PLS-SEM models, structural equation modeling



**SoGS-SR-023**

**Grade 7 Student Subject Matter Learnings of Asians Studies and Some Student and Teacher-Related Factors: Implications to Teaching and Learning**

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*Darwin Don M. Dacles, PhD*

Using the descriptive-comparative-correlational designs, particularly the techniques of performance test survey and an interview guide, important information on the subject matter learning of grade 7 students of Chagas High School Magsaysay annex and their insights about Asian studies relative to some student and teacher-related factors were gathered. It also compared the students' insights across domains. It established a correlation between their performance and the influence of student and teacher-related variables in learning the subject. Findings revealed that the students were still at the beginning stages of Asian studies in all three topics. They saw some student and teacher-related factors as moderately contributing to the positive learning of the subject. Their perceptions and the extent of contribution of some student and teacher-related factors differed significantly across domains. They perceived that their performance was not connected with their insights on the extent of the contribution of some student and teacher-related factors in learning Asian studies. The study concluded that the students still had inadequate knowledge or understanding of the three topic contents of Asian studies in the first grading period. The students considered both student and teacher-related factors as having a modest or reasonable contribution to positive learning of Asian studies. The students had varied perceptions of the extent of the contribution of some student and teacher-related factors. In this study, the performance test results of students and their insights on some student and teacher-related factors did not have any relation. Some implications may help enhance students' performance in the subject, such as the teachers' personality traits, pedagogical approaches, and use of instructional materials.

*Keywords:* content master, instructional materials, pedagogical approaches, and teachers' personality traits



**SoGS-SR-024**

**Performance Level of Grade 8 Students and Correlates  
of Teaching and Learning World History**

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Following the descriptive-comparative-correlational research designs, this study gathered information on the performance level of Grade 8 students of Giayan Integrated School in World History subject and their insights on the extent of contribution of some variables to gaining greater positive teaching and learning of the subject. Findings revealed that the grade 8 students were still at the beginning stages in the first grading period of the World History subject. The students perceived the influence or contribution of students' inquisitiveness in the subject to positive teaching and learning of world history subject as little. Meanwhile, they perceived study habits, teachers' interpersonal relations, teaching skills, and school support as moderately contributory. The students rated the extent of contribution of the five factor-variables to positive teaching and learning of the subject differently. The students' performance level in world history was not associated with the five factor-variables. Based on the summary of findings, the study concluded that the students were way below the expected level. The students perceived students inquisitiveness in the subject as slightly influencing or contributing to positive teaching and learning of world history. In contrast, they perceived study habits, teachers' interpersonal relations, teaching skills, and school support as modestly influencing or contributing to positive teaching and learning of the subject. The students varied in their insights on the influence or contribution of the five factor-variables to positive teaching and learning of the subject. The students' performance in World History and their insights on the influence or contribution of the five factor-variables to positive teaching and learning did not influence each other. The implications were deemed significant to serve as baseline information for needed school policies in Giayan

Integrated School to spur better performance among the students in world history.

*Keywords:* school's support to teaching and learning, students' inquisitiveness, study habits, teacher's interpersonal relation, and teachers' teaching skills



**SoGS-SR-025**

**Grades 9 Students' Performance, Notions and Predicaments in Economics: Implications to Student Performance, Teaching Skills, Professional Development and Administrative Support**

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*Darwin Don M. Dacles, PhD*

Using the descriptive-comparative and correlational designs, this study gathered information on Grade 9 students' performance level in economics and their notions and predicaments about the subject. It also gathered information on the difficulties encountered by the students in the subject and synthesized relevant implications based on findings. Results of the study revealed that the grade 9 students of Diffun National High School were proficient in the concepts of needs, wants, and consumption but were found at the beginning stages of understanding the nature of economics and the concepts of shortage, allocation, production, and business organizations. The students had very good notions about studying economics, the role of economics teachers, and school-related support. Significant differences existed in the students' notions of some helpful factors in learning the subject. Only school-related factors were correlated with students' performance, and the students had varied predicaments or difficulties along the three domains. Based on the findings, the study concluded that at this stage, the grade 9 students were adept in the concepts of needs,

wants, and consumption but had an inadequate understanding of the nature of economics and the concepts of shortage, allocation, production, and business organizations. The students had positive views about studying economics. They viewed the role of economics teachers and school-related factors as contributory to their learning of the subject. The students had varied perceptions on the extent of the contribution of some factors, such as how to study economics, the role of the teacher, and school-related factors. School-related factors influenced students' performance in the subject. Predicaments included inadequate knowledge of the subject, inability to see the connection in life, and few practical examples in daily living. They lacked the motivation to study, had very limited material support, and the teacher not specializing in economics. The educational implications crafted in this study were seen as relevant in enhancing the academic performance of grade 9 students.

*Keywords:* content knowledge, continuing education, pedagogical skills, students' interest, and school support system



**SoGS-SR-026**

**Compliance of a Public Senior High School Library to DepEd Order No. 56, s. 2022: Basis for a Proposed Collection Development Plan**

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*David A. Cabonero, MALS*

This study employed a descriptive-evaluative method using the collection-centered technique in evaluating the Senior High School collection of the NVGCHS library. The collection standards from DepEd Order No. 50, series of 2011, were used to determine the compliance of the Senior High School Library

of NVGCHS. The findings revealed that the library did not comply with the required number of books specified in the Department of Education collection standards. No periodical and non-print collections were available in the library, and only a few magazine titles were available. It was also found that the majority of the book collection was outdated. The study concluded that the library collection was inadequate and outdated; therefore, it needed funding to acquire information resources. Moreover, the NVGCHS library was non-compliant with the Department of Education standards for school libraries and needed further improvements in the collection. The proposed Collection Development Plan considered the findings of this study.

*Keywords:* action plan, collection evaluation, collection management, library collection standards, school library standards



**SoGS-SR-027**

**Archival Knowledge and Practice of Academic Librarians on RA 9470 in the Context of a Private University: Towards a More Functional Organizational Plan**

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This study utilized mixed methods of research to determine the archival knowledge and practice of academic librarians of Saint Mary's University on ten domains, namely: (1) scope, interpretation, and objectives; (2) University Archives of SMU; (3) structure and staffing pattern; (4) management of university records; (5) transparency of transactions and access to information; (6) standards, inspection, reporting, and audit; (7) administration of University Archives; (8) miscellaneous provisions; (9) permanent buildings and; (10) amendments to

implementing rules and regulations vis-à-vis RA 9470. Findings revealed that the respondents had in-depth archival knowledge of the ten domains vis-à-vis RA 9470. However, the extent of practice showed much to improve in the SMU Archives, particularly in structure and staffing pattern, management of University records, standards, inspection, reporting and audit, and administration of the University Archives and permanent building. It was also found that the archival knowledge and practice of the respondents, when grouped according to their age, professional qualification, and years of service in SMU, had no significant difference. Moreover, the University Archives showed compliance in most of the provisions of RA 9470 except for a few that needed stronger emphasis on the importance of compliance to standards. The proposed organizational plan considered the salient findings of this study.

*Keywords:* academic and university archives, archiving, archival repository, archival, standards, law on archiving, processing of archival materials



**SoGS-SR-028**

**Records Management Practices of a State University  
Employees: Towards a Proposed Records  
Management Plan**

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Information Science  
Febie G. Lanzuela, PhD*

Records Management is an area that needs constant attention to further guarantee that information is available when and where it is needed. Using the mixed exploratory methods research design, a survey questionnaire was administered to determine the extent of records management practices and challenges encountered by the employees of Nueva Vizcaya State University - Bambang Campus on the following domains of the research,

namely: a) records management policy and responsibilities, b) recordkeeping systems, c) records capture and registration, d) records classification, e) records storage, f) records access, g) records tracking, h) records disposal, i) documentation, j) vital records protection, k) monitoring and auditing, l) training, m) legal and regulatory requirements, and n) management of electronic records. The survey method and follow-up interview were used to gather pertinent data. The respondents were employees from the different offices of the university. The study revealed that the respondents complied with the guidelines on proper records management practices and encountered varied challenges in conducting records management. In response to the challenges, a proposed intensive records management plan was made as an enhancement program to upgrade the conduct of records management at the university.

*Keywords:* archive theory, document management, document theory, electronic records management, information management, information theory, university archives



**SoGS-SR-029**

**Knowledge and Practice on the Implementing Rules  
and Regulations (IRR) of the Data Privacy Law  
among Stakeholders of an Academic Library:  
Basis for a Proposed Manual**

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Science*

*David A. Cabonero, MALS*

Using a researcher-made questionnaire, this study utilized quantitative and qualitative research methods to gather information on stakeholders' knowledge and practice of SMULRC on the Data Privacy Act of 2012. The knowledge of stakeholders and the practice of SMULRC on the Data Privacy

Act of 2012 were determined by computing the frequencies and percent values of the affirmative responses. This study was conducted among 115 library stakeholders of Saint Mary's University. It was found that despite the library stakeholders' great knowledge of the Data Privacy Act of 2012, they exhibited insufficient knowledge of some provisions. In addition, the ULRC has exhibited great practice and compliance with the Data Privacy Act of 2012. However, there was a need to improve those with poor practice on various provisions. The Data Privacy Manual crafted in this study was seen as relevant for the ULRC since it considered the salient findings of this study.

*Keywords:* data privacy act, library data privacy manual, privacy policies, processing of personal data, protection of data and information, personal data security, right to privacy



### **SoGS-SR-030**

#### **Inventory and Status of a University Museum: Towards Formulation of a Museum Manual**

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Using quantitative and qualitative research methods, this study assessed the actual collection of Saint Mary's University Museum through inventory. It also determined the status of SMU Museum, particularly on its scope and objectives, duties and functions, human resources, collection management, financial support, and physical facilities based on international university museum standards and RA 11333 in the context of a university museum. The respondents were the stakeholders of SMU, comprising the administrators, librarians, faculty from high school and college Social Sciences departments, social sciences students, and frequent visitors of the university museum. Findings revealed that the SMU Museum had various collections; however, it was inadequate to cater to the research

and learning needs of the school community. The scope and objectives of SMU Museum as a university museum were determined as fully implemented; however, the domains duties and functions, human resources, collection management, financial support, and physical facilities were evaluated as partially implemented. A museum manual was proposed for the SMU Museum to address its existing challenges.

*Keywords:* collection management, museology, museum management, museum standards, social interaction theory, theory of developmental stages



**SoGS-SR-031**

**Financial Literacy, Financial Management Practices,  
and Retirement Confidence Among  
National Irrigation Administration Employees**

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Regina D. Ramel, PhD*

Employing descriptive-correlational design, this study investigated the financial literacy, financial management, and retirement confidence of 58 government employees of the National Irrigation Administration using means, standard deviations, and frequency counts. Moreover, the study determined the significant relationship between retirement confidence and financial literacy and between retirement confidence and financial management using the Pearson Test. Financial literacy is composed of financial attitude and financial knowledge. Meanwhile, financial management was comprised of cash flow management practices, credit management practices, savings and investment practices, and insurance practices. Data was gathered through a survey questionnaire and interviews from April to December 2019. Evidence revealed that females who finished bachelor's degrees and master's degrees, with co-terminus employment status, earning P30,001-P45,000 a month, and those who earn sufficient income exhibited very

good financial knowledge. Overall, the employees showed good results in terms of financial attitude, financial knowledge, cash flow management, credit management, savings and investment, insurance, and retirement confidence. The evidence also disclosed that females and permanent employees were more adequately insured. Further, higher education graduates had better financial knowledge and credit management practices. Also, employees who earned higher incomes had better cash flow management and credit management practices. In contrast, employees who attained higher financial status had better financial attitudes, financial knowledge, cash flow management practices, credit management practices, savings and investment practices, and insurance practices. The study concluded that financial attitude, cash flow management, credit management, savings and investment, and insurance practices had a significant positive relationship with retirement confidence.

*Keywords:* cash flow management, credit management, financial attitude, financial knowledge, insurance, investment, savings



**SoGS-SR-032**

**The Relationship Between Credit Management Process  
and the Financial Performance of  
Multi-Purpose Cooperatives**

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Eleanor C. Domingo, PhD*

This study was undertaken to determine the significant relationship between the credit management process and the financial performance of cooperatives. Additionally, solutions and strategies were recommended based on the results and findings. Respondents came from two large cooperatives in Nueva Vizcaya. A Survey questionnaire was utilized in this study. Interviews and document scanning were done to

substantiate the results of the gathered data. Moreover, the financial performances for 2016-2018 of the two large cooperatives in Nueva Vizcaya were calculated using the Standard Performance Financial Ratios for PISO Standard cooperatives. The ratios were scored based on the standard. They were determined through their adjectival rating for comparison to the credit management process. Results showed a significant relationship between the credit management process and the financial performance of cooperatives. This meant that the better the credit management process of a cooperative, the higher the results in their financial performance. Sound credit management policies affected the process. Furthermore, the study revealed that certain issues needed to be addressed using tools and strategies as recommended. Gaps in credit management processes like Statements of Cash Flow regularly contributed to efficiency in assessing the member.

*Keywords:* institutional strength, operational strength, profitability, structure of assets.



**SoGS-SR-033**

**Knowledge and Compliance of Small and Medium Sized Enterprises (SMEs) to Philippine Financial Reporting Standards for SMEs**

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Eleanor C. Domingo, PhD*

This paper discussed the knowledge and compliance of Small and Medium Sized Enterprises (SMEs) to Philippine financial reporting standards (PFRS) for SMEs. Using the different domains of the PFRS for SMEs as the theoretical framework, the level of knowledge of preparers of the financial statement reports and the level of compliance to PFRS for SMEs were introduced in this study. Data were collected through questionnaires, tabulated, and analyzed using SPSS. The

respondents were the preparers of the sample enterprises' financial reports, which were conducted in Santiago City, Philippines, in 2017. Findings showed that the preparers of financial reports were moderately knowledgeable in the different domains of the PFRS for SMEs. The respondents perceived a high compliance level to PFRS for SMEs. Challenges and issues in compliance with the PFRS for SMEs were identified, and regulatory agencies' inadequate action to encourage the adoption of PFRS for SMEs was at the top of the list. The results could assist the different regulatory agencies in addressing issues and planning for more effective strategies to achieve the agency's goals and the SMEs simultaneously. Finally, the challenges and issues could be addressed in future research because of the different limitations presented in this paper.

*Keywords:* compliance knowledge, Philippine financial reporting standards, small and medium-sized enterprises



**SoGS-SR-034**

**Employees' Retirement Preparedness Investment  
Options and Issues in the Philippine State  
University: Grounds for a Financial Plan**

*Cherry B. Trinidad, Master of Science in Accountancy  
John Octavious S. Palina, PhD, DBA*

This study was conducted to determine and analyze the retirement preparedness of Isabela State University, Cabagan Campus Isabela Philippines employees regarding financial resources investment, option preferences, and personal and organizational issues affecting their retirement preparedness. It also aimed to create a financial plan to help employees of ISU Cabagan Campus to achieve a fulfilling retirement life. Using the descriptive method of research, data were gathered through a modified questionnaire adopted from previous empirical

studies. The respondents of this study were all regular employees of Isabella State University Cabagan campus from various age brackets. The results of this study showed that the respondents' overall level of retirement preparedness in terms of financial resources was low. Most respondents preferred investment option was bank deposits, and the least preferred investment option was government bonds. The respondents encountered personal and organizational issues that greatly affected their retirement preparedness. Different reactions were drawn from the respondents when asked about their thoughts and feelings on preparation for retirement issues in the workplace about retirement, and suggestions they want their employer to make to help them prepare for it. It was recommended that employees develop their financial knowledge to have sound retirement planning, undertake retirement planning as early as possible, be oriented with the different financial instruments through adequate trainings and seminars, and adopt the proposed retirement financial plan.

*Keywords:* early retirement planning, financial resources, investment options, retirement preparedness



**SoGS-SR-035**

**Stakeholder-Assessed Quality and Effectiveness of  
Accounting Information Systems Used by  
Automobile Dealers in Northeast Philippines**

*Lea D. Tungpalan, Master of Science in Accountancy  
Eleanor C. Domingo, PhD*

This paper assessed the quality and effectiveness of an Accounting Information System (AIS) in the context of the automobile industry as assessed by the stakeholders. The updated D & M IS Success Model was used as the theoretical framework to assess AIS in terms of System Quality, Information Quality, and Service Quality dimensions, and

effectiveness as perceived by the managers and users of the AIS. A survey rating scale was used as a data collection instrument. The data gathered from a sample of 30 respondents were analyzed using descriptive statistics, and the results showed that the assessment of the managers and users of the AIS effectiveness did not significantly differ. The stakeholders agreed that their systems were secure, easy to use, and efficient in generating accurate, complete, and timely information. The survey was conducted within the Province of Isabela in 2019. It showed that the stakeholders perceived the AIS used by automobile dealers to be moderately effective in achieving organizational goals and objectives. Due to the rapid advancement of technology, automobile companies and their managers could use the findings of this paper to improve their accounting information systems further to cope with these changes and cater to the increasing need for more reliable information. Finally, this paper presented limitations that could be addressed in the future.

*Keywords:* information quality, information system success model, service quality, system quality



**SoGS-SR-036**

**Interaction Effect of Supervised Independent/  
Cooperative Learning and Parents' Feedback  
on Junior High School Students'  
Mathematics Performance in the  
Learning Competencies on  
Triangle Inequalities**

*Jomar A. Felix, MST Mathematics  
Melanie G Gurat, PhD*

This study determined and compared the mathematics performance of low-achieving students after exposure to supervised Independent/Cooperative Learning (ICL) classes and parents' feedback on written outputs interventions. The subjects

were drawn from the Grade 8 sections of Alicia National High School. Twenty (20) students from each section underwent a series of teaching and learning experimentation for three weeks with scheduled ICL classes every Thursday and formative tests every Friday in a  $2 \times 2$  factorial design set-up. The same teaching-learning experiences were provided for each section but varying on the intervention/s received; supervised ICL classes with parents' feedback for Class A, supervised ICL classes without parents, feedback for class B, unsupervised ICL classes with parents' feedback for Class C, and unsupervised ICL classes without parents' feedback for class D. During the experimentation, the researcher as the subject teacher noted observations on students' performance in each of the three least mastered competencies discussed to them. Findings from the three formative tests revealed that students' mathematics performance under supervised ICL class intervention was higher than those under unsupervised ICL classes. Higher performance was likewise manifested by students with parents' feedback on written outputs compared to students without parents' feedback. The interaction effect between the two interventions was also significant among the four groups. It was established that, when supervised during ICL classes in mathematics and given feedback by parents, students attained mastery of competencies. The supervision of ICL classes and introduction of parents' feedback on written outputs were jointly recommended for inclusion in teaching competencies in triangle inequality in Mathematics 8.

*Keywords:* exterior angle, formative tests, hinge theorem and its converse, triangle inequality theorems 1 to 3



**SoGS-SR-037**

**Senior High School Mathematics Teachers' Assessment Practices and the Content and Face Validity of their Summative Tests: Towards a Retooling Project for Curriculum Implementers**

*Edison B. Lopez, MST Mathematics*

*Dominga C. Valtoribio, PhD*

This study identified the assessment practices and summative tests' validity of nine Senior High School (SHS) Mathematics public school teachers from four very large public schools in the Division of Nueva Vizcaya. The study utilized a mixed-method research design, specifically a descriptive-evaluative and survey method. Mean, percent, and Aiken's content validity coefficient (V) formula was used to treat the data. The results revealed that the SHS Mathematics teachers used traditional classroom assessment modes (discourse and portfolio) and generally practiced constructing convergent question items (select-type and closed-open questions). The summative tests were found to have content validity. However, alignments with the curriculum guide of the assessment tools in Math-related subjects in terms of learning competency, test and time conformity, cognitive level, and total instructional time conformity were neglected. Teachers' expertise in constructing tests with face validity was lacking, as indicated by errors in the test format, multiple-choice, and problem exercises. Finally, a retooling project was proposed to improve the assessment tools in mathematics.

*Keywords:* Aiken's V, alignment, assessment tools, conformity, inventory



**SoGS-SR-038**

**Assessing the Integration of the Indigenous Peoples' Education Curriculum Framework in Basic Mathematics: Towards the Improvement of Contextualized Materials**

*Arlene L. Lu-ib, MST Mathematics*

*Melanie G. Gurat, PhD*

The institutionalization of Indigenous Peoples Education (IPEd) in education addressed an inclusive and culture-responsive education to promote and recognize individual cultural

differences. The IPEd curriculum framework was mandated to guide the integration of IKSPs in all the key learning areas. This study assessed the integration of the IPEd curriculum framework in mathematics, specifically the extent of its integration in teaching grade 3 mathematics and the challenges encountered by the teachers during the integration process. The scanned documents served as a basis for proposing feasible solutions for improving contextualized materials. This study used a mixed research method utilizing thematic analysis, content analysis, frequencies, and percentages to substantiate the data results. Findings showed that teachers were on a moderate level of integrating the IPEd curriculum framework, particularly the Ifugao IKSPs in mathematics. Moreover, multiple strategies were used to integrate IPEd in the different mathematics concepts to achieve the learning competencies through modeling, games, storytelling, hands-on learning, manipulatives / realias, effective questioning, the local language, local names, and terminologies. However, some challenges hindered the contextualization and integration of IPEd in mathematics instruction, including preparation and time frame, personal views and attitude, and language and terminologies, which were the consequences of communication barrier and poor coordination, lacked knowledge, limited materials/ references, learners' diversity, and limited immersion to the culture. The study recommended that observation of the accuracy of the materials, using factual/realistic mathematical problems, and using the SMART format in setting up objectives should be strictly monitored to maintain the good quality of contextualized materials.

*Keywords:* challenges, contextualization, Ifugao IKSPs, strategies, grade 3 mathematics



**SoGS-SR-039**

**Assessment of Secondary Mathematics Teachers'  
Participation in Learning and Development Activities:  
Implications for Mathematics Curriculum Delivery**

*Gideon D. Oray, MST Mathematics*

*Dominga C. Valtoribio, Ph.D.*

The primary purpose of this study was to assess the secondary mathematics teachers' participation in DepEd's learning and development activities as implications for transcending the challenges of the K to 12 curriculum education. Kirkpatrick's Model of Evaluation was utilized in the activities under formal learning. The study employed mixed methods of research, specifically descriptive-evaluative and qualitative-descriptive. Findings revealed that all mathematics teachers participated in formal learning activities except Faculty Exchange Program, and L&D 1 cluster was the most preferred activity. The activities provided new ideas and techniques from remarkable speakers, which increased awareness of their invaluable role as teachers. Thus, it initiated the integration of technologies into education and contributed to a more effective teaching-learning process. Still, lacking resources for implementation, learners' differences, overloaded work, and students' unchanged attitude to mathematics remained the predicaments of the teachers, which deterred their learning. In addition, five major recommendations regarding the activities were proposed. The study recommended that the Department of Education, together with the organizers, utilize the findings as a basis for improvement of the programs to be implemented in the future.

*Keywords:* formal learning, Kirkpatrick's evaluation model, remarkable speakers, technologies, webinars



**SoGS-SR-040**

**Effect of Digital Storytelling in the Achievement of Mathematically-Challenged Learners when Doing Individual and Collaborative Tasks**

*Julieta P. Taberna, MST Mathematics*  
*Rommel S. De Gracia, PhD*

This study aimed at improving the mastery level of the mathematically-challenged Grade 7 learners on selected topics in Mathematics 7 when they do individual and collaborative tasks through digital storytelling. Developed comic strips were used as an intervention based on the least mastered competencies in Grade 7 Mathematics. This action research study utilized a descriptive-comparative, pre-experimental design employing qualitative and quantitative research approaches. A purposive sampling technique was used to identify the 34 participants from different sections of Grades 7 and 8 of Nueva Vizcaya General Comprehensive High School. They were classified as mathematically-challenged learners according to their mathematics 7 grade. These learners, divided into individual and collaborative groups, were taught for almost a month using digital storytelling worksheets and activities, which served as an intervention. The results revealed that the intervention using digital storytelling improved the mastery level of the mathematically-challenged learners on the least mastered competencies in Mathematics 7 regardless of how the intervention was done, individually or collaboratively. Teaching least mastered competencies in Grade 7 Mathematics to mathematically-challenged learners using digital storytelling with comic strips gained high effect size. Also, these learners experienced teamwork and better ways to understand topics in Mathematics 7. Hence, it was recommended that Mathematics teachers develop digital storytelling, contextualizing, or indigenizing the math curriculum to appreciate mathematics concepts better.

*Keywords:* collaborative learning, least mastered competency, teaching strategies



**SoGS-SR-041**

**Conceptual Knowledge and Skills on Limits and  
Continuity of Senior High School Students: Basis for  
the Formulation of Enrichment Activities**

*Khriselle Mae A. Beting, MST Math*  
*Rowena A. Rivera, MAT*

Calculus is a branch of mathematics that deals with extensive applications in some courses such as science, engineering, economics, computer science, and the like. Learners need to develop their skills to master a wide range of competencies in the subject. However, the subject is perceived to be complex by STEM learners; thus, this study aimed to determine the level of conceptual knowledge and skills of the Grade-11 STEM students in Limits and Continuity and their relationship to identify the problems or challenges encountered by the students and to construct enrichment activities for learners involving real-life applications of Limits and Continuity. It used a mixed-method research design consisting of qualitative and quantitative data analysis from 201 respondents in four senior high schools. The tools used in the study were the Limits and Continuity test and questionnaire. Findings revealed that the students' mastery level of conceptual knowledge was average and very low level of skills in solving real-life applications of Limits and Continuity. Also, there was a moderate positive correlation between the conceptual knowledge and skills of the students. The problems or challenges encountered by the students included classroom conditions, student factors, teacher factors, the nature of the subject, and problem-solving factors. Findings could improve the mathematics framework involving real-life applications to help the students relate the lessons to their daily lives. Enrichment activities crafted by the researcher could be used as a future reference in addressing the needs and challenges of learners in Limits and Continuity.

*Keywords:* challenges, least mastered competencies, multiple-choice, problem-solving, real-life applications



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## **SOGS FACULTY RESEARCHES**

**SoGS-FR-01**

**Experiences of Sophomore Teacher Education and Civil  
Engineering Students of Intergenerational  
Relationships in the Family: Pathways  
towards Well-being in the  
Educative Area**

Dr. Liberty A. Rosario

*Lead Researcher*

Judith P. Daguio, Engr. Candido Joseph T. Rosario Jr.

and Dr. Henry F. Gamboa

*Collaborators*

This study explored the love in the family manifested in the quality of intergenerational relationships experienced by sophomore student-prime contributors that affect and influence their academic well-being. Overlapping relationships with their parents, adult children, grandparents, siblings, and the rest of their social structure in the educative process are paramount factors influencing their academic well-being with the 4Rs component, namely: respect, responsibility, reciprocity, and resiliency. Dominantly, the responsibility component surfaced as the underpinning stamp for intergenerational relationships to thrive and flourish in sustaining their academic well-being. Hence, a significant correlation between the quality of intergenerational relationships and academic well-being was noted. The result revealed a strong quality of intergenerational relationships among the four components of responsibility, resilience, reciprocity, and respect that significantly made a relevant relationship with the students' academic well-being, which was rated strong. Having noted the ratings derived and culled from the results, it was evident that the participants' quality of intergenerational relationships was positively correlated and influenced by the level of academic well-being. This correlation showed that the higher the IR, the better the

academic well-being. Further, this reveals that the higher the quality of the four Rs, the higher or, the stronger the quality of academic well-being. Strikingly, the quality of experiences of the intergenerational relationships along the four Rs was rated very strong. Concerning academic well-being, data reveals that such is fostered by the kind of support received from the family. Diversified experiences and challenges also surfaced and became the basis for crafting intensified intervention in class through profiling students in the classroom, specifically among freshmen.

*Keywords:* well-being, intergenerational relationship, quality



**SoGS-FR-02**

**Exploring Uniformity in Diversity: A Comparative  
Study of Filipino Adolescents and Adults’  
Perspectives on Body Image and  
Its Correlates**

Dr. Darwin Don M. Dacles  
*Lead Researcher*

Kenneth L. Maslang and Dr. Fe Yolanda G. Del Rosario  
*Collaborators*

This study – being in the second stage of a three-year research activity – generally aimed to compare the adolescents' and adults' perspectives on body image to understand the intricacies of body image further as people go through physical, emotional, cognitive, and social maturity. Findings revealed that the adolescents considered self-aggrandizement as having a modest influence on body image perspectives. However, body acceptance, physical contact, sex and sexuality, and vitality greatly contributed to their perspectives on body image. Except for sex and sexuality, which indicated no significant difference, the rest of the four domains showed significant differences. The adolescents manifested great self-esteem and self-optimism but had a moderate valuation of their self-outcome. The adolescents

and adults had significant differences in self-esteem, self-optimism, and self-outcome. Both adolescents' and adults' perspectives on body image were correlated with self-esteem, self-optimism, and self-outcome. The adolescents and adults had a similar ranking of factors influencing body image perspectives. Among adolescents in descending order, the top three most influential factors on body image perspectives were: parents, peers, and siblings, while adults considered the top three influencing factors as parents, siblings, and peers. The study concluded that at least among adolescents in school, the most influential domains contributing to their perspectives on body image were body acceptance, physical contact, sex and sexuality, and vitality. The adolescents' and adults' perspectives on body image varied significantly. The adolescents exhibited immense positive self-confidence and encouraging social role functioning but possessed a modest valuation of their self-outcome, especially in overcoming symptom distress. The adolescents and adults varied in their self-esteem, self-optimism, and self-outcome, and home factors such as the influence of parents, siblings, and peers remained fertile areas where perspectives on body image are formed.

*Keywords:* body acceptance, physical contact, sex and sexuality, self-confidence, self-outcome, social role functioning, symptom distress, vitality



**SoGS-FR-03**

**Level of Knowledge and Awareness on Disaster Risk Reduction and Management (DRRM) Program among Grade 6 Pupils in Bayombong, Nueva Vizcaya**

Dr. Melanie G. Gurat  
*Lead Researcher*

Gloria Vicky A. Antonio, Miss Rowena A. Rivera and Dr.  
Rommel S. de Gracia  
*Collaborators*

This study aimed to determine the level of knowledge and awareness of elementary pupils on the Disaster Risk Reduction and Management (DRRM) Program. It also explored significant correlations between the two mentioned variables. Moreover, it determined the significant difference between these variables when the participants were grouped by sex. This study used a quantitative approach, particularly the descriptive-comparative and correlation research. The data were obtained through a Google form test on the level of knowledge and awareness of DRRM. Frequency, percent distribution, mean, and standard deviation were computed to describe the level of knowledge and awareness. T-tests for independent samples and Pearson-r were used in exploring if significant differences exist in the level of knowledge and awareness when the participants are grouped by sex. The Pearson-r correlation was used to reveal if the level of knowledge is significantly correlated with the level of awareness. T-test for paired samples was used to determine if a significant difference exists between knowledge and skills. The grade 6 pupils were knowledgeable and highly aware of DRRM. The pupils' level of knowledge and awareness are the same regardless of their sex. Levels of knowledge and awareness are not associated with each other. The awareness was higher than the knowledge of DRRM. The Grade 6 pupils perceived that they were aware. Still, not all of them could answer the corresponding item in the knowledge test correctly. The results of this study can be used as a basis for improving the DRRM program and enhancing or revising the curriculum, particularly on the subjects integrated with DRRM. It can also be a basis for crafting Information, Education, and Communication (IEC) materials for DRRM awareness for Grade 6 pupils.

*Keywords:* Disasters, Information, Education, and Communication (IEC) materials, knowledge test, pupils' awareness and risks



**SoGS-FR-04**

**Sustainability Assessment: Basis for Streamlining  
SMU Extension Program**

Dr. Harrison T. Villanueva  
*Lead Researcher*

Dr. Regina D. Ramel and Dr. Dominga C. Valtoribio  
*Collaborators*

The study was undertaken to assess the sustainability performance of SMU Extension Services Programs in terms of the extent of importance and practice along the following domains: social, environmental, and economic. An action plan was crafted to address the challenges of the extension programs and set directions for the school's flagship extension program. The mixed methods research was carried out with the use of survey questionnaires and by scanning relevant documents to generate the participants' assessment of the sustainability performance of the extension programs and to determine the sustainability challenges. The study participants included stakeholders like Mission and Identity Coordinators, the LMCDAC director, staff, and community organizers of the different flagship programs of each school from SY 2015-2016 TO SY 2018-2019. Findings revealed that social, economic, and environmental activities are considered of moderate to great importance and also either moderate or great practice making such extension activities generally sustainable. The findings further revealed the positive values and attitudes that SMU stakeholders, particularly the implementers, hold towards the extension programs. Seeing that there are great important extension activities but of a little extent of practice signifies the SMU stakeholders' willingness to do more noble activities in the communities. Activities that are of great importance but a little extent of practice should be reviewed for consideration for future extension planning, if necessary and within the capability of the University.

*Keywords:* community engagement, university extension,  
community involvement



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**Research Unit**  
**SCHOOL OF**  
**ACCOUNTANCY AND BUSINESS**  
**(SAB)**

**Research Coordinator:** Angela C. Garra, MBA

**Panel of Reviewers**

<b>Area of Specialization</b>	<b>Name of Faculty</b>
<b>Accountancy</b>	Elnora V. Adalem, CPA, MBA Sheryl A. Baria, BSA Angela C. Garra, MBA Ma. Concepcion T. Jalijali, CPA, MBA Jeanette R. Mania, CPA Veronica C. Maramba, CPA Emerson G. Ramos, CPA John Lindy R. Soriano, CPA Dorilyn C. Tiongson, MBA, JD Francis Leo C. Tugab, CPA Jonathan P. Vergara, MAEd Harrison T. Villanueva, PhD
<b>Business Administration, Office Administration, and Entrepreneurship</b>	Sheryl A. Baria, BSA Erlinda T. España, PhD Loreta V. Garlitos, MBA Angela C. Garra, MBA Monaloufel Rosario F. Jasmin, LPT, MSBA, PhD Alexa B. Las-ang, BSOA Claire L. Guinoman, MBA Sherween Jerry Paul V. Saquing, LPT, MAEd, MBA, JD Rodora P. Tipay, MBA, IMPA Harrison T. Villanueva, PhD

**SCHOOL OF ACCOUNTANCY AND BUSINESS**

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<b>Hospitality and Tourism Management</b>	Windell Marie M. Colobong, BSTM Mayvelyn S. Covita, PhD George Rawson A. Guiab, BSHRM John Michael C. Ibarra, MSHRM Jesus Ana Maria F. Jacalne, BSHRM Aileen P. Lamson, BSHRM Sherween Jerry Paul V. Saquing, LPT, MAEd, MBA, JD Mark Ian J. Soriano, MSTM
<b>Guest Panel</b>	Flomilyn B. Dela Cruz, BSC, Senior Trade and Industry Development Specialist- Department of Trade & Industry  Aira Leigh Suguitan-Rumbaua, Faculty, NVSU BS- Tourism, MSTM Ongoing

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## SAB STUDENT RESEARCHES

### SAB-SR-01

#### **Ammungan Festival Organizers' Insights on the Impact of COVID-19**

*Kyle Kendrieck L. Felarca, Jose Antoni F. Labayog, Princess  
Anne C. Gervacio, Joyce C. Mendoza, Judy Ann V. Obra,  
Sherween Jerry Paul V. Saquing, LPT, MAEd, MBA, JD*

This study intended to surface the understanding of the organizers of the Grand Ammungan Festival of the Province of Nueva Vizcaya (Philippines) on the impact of the COVID-19 pandemic. Using a descriptive-qualitative method to gather insights from 12 key persons in the working committees, the study used the following components of festival management according to Saquing (2015): factual, causal, functional, spatial, temporal, procedural, and financial variables. Results showed that: the festival was rooted in history, commemorating the foundation of the province as a separate political territory during the Spanish era, manned by mostly government employees, held within government property, and was celebrated every May 24 as per proclamation by the President of the Philippines, followed the plan-implement-evaluated scheme of organizing, and adhered to government bidding and procurement guidelines. If held within or after the pandemic, the festival would have to accommodate health and safety protocols insofar as the said variables are concerned. Recommendations regarding identity, vision, manpower, spaces, times, procedures, and costing were forwarded.

*Keywords:* festival management, pandemic, public performances

**SAB-SR-02**

**The Effectiveness of Travel Vloggers on the Decision-Making of Tourists Visiting Nueva Vizcaya, Philippines**

*Hannah Trixie J. De Guzman, Carla Marie E. Fernandez,  
Jaylord A. Mahor, Niña Cristele F. Parilla, Krizel Ann B. Pilar,  
John Michael C. Ibarra, MSHRM*

The impact of digital technology paved the way for new platforms in marketing, one of which is the vlog or blog featuring tourist spots. The study highlights the effectiveness of travel vloggers on tourist decision-making in visiting Nueva Vizcaya, Philippines. The study determined the level of effectiveness of the two vloggers chosen and their vlogs in terms of public relations, sense of humor, relativeness, optimism, content, quality perception, language, and references and information. Respondents were also asked about how to develop an effective tourism vlog format. Data were collected from 64 respondents through purposive sampling. A researcher-developed survey questionnaire using google forms was crafted. Responses were tallied and analyzed using the quantitative-descriptive method, while a storyboard presentation was used to interpret the written recommendations of respondents. Results showed that vloggers were generally good at delivering their videos and content. The respondents suggested that the vloggers could improve the content of their vlogs by giving honest feedback and information, featuring some of the culture and beliefs of the locals, and being more knowledgeable about the places they are featuring. Travel vlogs, to be effective, should also be well-developed and prepared in terms of content, entertainment, public relations, visual image, and authenticity.

*Keywords:* digital technology, decision-making, marketing, reference destination, tourism

**SAB-SR-03**

**Extent of Motivational Factors in Visiting a  
World Heritage Site**

*Anna Marie C. Agustin, Patricia Mae D. Balog,  
Daphne Allison Dag-uman, Alyssa G. Go, Justine Mae V. Ibay,  
Jessica C. Pascua, Harrison T. Villanueva, PhD*

This descriptive research intended to determine the Tourism students' extent of push and pull motivational factors in visiting a World Heritage site in Vigan City. Findings revealed that the majority of the respondents were freshmen female tourism students residing in Nueva Vizcaya. Most respondents had never been to Vigan City and stayed for at least three days. Three major push factors highly motivated tourism students to visit the world heritage site: sightseeing variety, escaping daily routine, and gaining knowledge. The three major pull factors were history and culture, variety seeking, and natural resources. The respondents differed in their perception of the push motivational factors in visiting a world heritage site in Ilocos when grouped by sex, origin, and year level. However, when grouped according to their profile variables, the respondents displayed the same perception regarding the number of times the site was visited, the average length of stay, and all the pull motivational factors. The study indicated that motivational factors could influence tourism students to visit World Heritage sites.

*Keywords:* motivational factors, world heritage site, Vigan city



**SAB-SR-04**

**Development and Acceptability of  
Ifugao Kiniing Burger**

*Catherine Victoria A. Bayaua, Hasmin Nicole D. Dumaliang,  
Hermiliza G.Madiwo, Jeffrey F. Pallaya, Reynald Aldwin Z.  
Carig, John Michael C. Ibarra, MSHRM*

This product development study was designed to evaluate the acceptability of Ifugao's preserved pork meat, *Kiniing*, as a new burger version. It determined the respondents' profile in terms of sex, occupation, years of service in the food industry, sensory evaluation of the *Kiniing* burger when it comes to its appearance, taste, aroma, and texture; the significant difference between respondents' profile and their sensory evaluation of the product; and recommendations to improve the recipe of *Kiniing* burger. This descriptive-experimental-evaluative research purposively selected 12 food experts from Bayombong, Nueva Vizcaya. Developing the product Ifugao *Kiniing* burger was made through three phases of experimentation with the guidance of the panelists. Data was gathered using survey questionnaires with a four-point hedonic rating scale based on the developed products' texture, appearance, taste, and aroma. Descriptive statistics were calculated to ascertain the acceptability level of the *Kiniing* burger. Results showed that overall, the *Kiniing* burger was found to be moderately acceptable as a product developed in terms of its sensory evaluation, such as texture, appearance, taste, and aroma. There was no significant difference in the respondents' assessment of the acceptability of the product when grouped according to profile variables.

*Keywords:* appearance, aroma, food fusion, sensory acceptability, taste, texture



#### **SAB-SR-05**

### **Cyclist Meal: A Product Development of Banana-Squash Egg Noodles**

*Jean Francis Aquino, Aimee Estimada, Faye Anne Guiab, Joan  
Kimmy Claude Sanchez, Nellie Joy Segundo, Ronelyn A.  
Montemayor, Harrison T. Villanueva, PhD*

This study presented a new variety of noodles that would benefit cyclists to regain energy and boost their immune systems. The Banana-squash egg noodle is a nutritious food containing

Vitamins A and C and vitamin B, calcium, iron, and fiber. Thus, the Banana-squash egg noodles could be a great food for bikers to recover from long riding hours. This study used a descriptive type of survey method, wherein questionnaires, surveys, and taste tests were conducted to gather the needed data to assess the acceptability of Banana Squash Egg Noodles in terms of appearance, texture, flavor, and aroma. The study area was in Bayombong, Nueva Vizcaya, wherein 100 cyclists, specifically the team Region 2 Trauma Medical Center Bikers, were chosen as respondents. Most of the responders were 21 to 30-year-old men who rode their bikes daily, ate noodles at least once a month, and had been riding for more than five years. The respondents had a very acceptable evaluation of the acceptability of banana-squash egg noodles. When grouped by age, sex, years of cycling, and frequency of eating noodles, the acceptability of banana-squash egg noodles in appearance, aroma, texture, and taste did not differ. Most respondents felt that the color of the noodles could be further improved to appeal to more consumers, particularly cyclists, following the texture of the noodles' taste and aroma.

*Keywords:* food acceptability, food fusion, product innovation, sensory evaluation



### **SAB-SR-06**

#### **E-Banking Services: Awareness and Behavior of Accountancy and Business Students**

*Rasmin C. Belarde, Joyce Ann C. Carillo, Sharen P. Cupido,  
Joreen C. Gaspar, Lovely Jhoy P. Julian,  
John Lindy R. Soriano, BSA, CPA*

Electronic banking services are one of the new types of services in addition to conventional banking services. In this context, this study was carried out with the main objective of determining e-banking service awareness and behavior of Saint Mary's University School of Accountancy and Business

students. The descriptive-correlational design was used in this study as it allowed the researchers to describe respondents' awareness of and behavior in e-banking services. Based on the findings, the majority of respondents were females taking up BSMA, BSA, and BSBA FM, at the third-year level, who preferred to use Gcash as an e-banking service since it was convenient and saved time. Furthermore, regarding ease of use, respondents who used e-banking services were moderately aware of the security, service quality, cost-effectiveness, privacy, and customer support of e-banking services. In addition, in terms of usefulness, respondents who used e-banking services strongly agreed. Respondents also agreed on the extent of behavior in terms of ease of use, behavioral intention, risk, trust, and structural assurance. There was no significant relationship between cost-effectiveness and risk, nor between privacy and risk. On the other side, there was a significant relationship between security and all the behavioral variables, including ease of use, service quality, and customer support. Additionally, there was a significant relationship between cost-effectiveness and usefulness, ease of use, behavioral intention, trust, structural assurance, and privacy.

*Keywords:* awareness, behavior, banking services, electronic banking, school of accountancy and business



**SAB-SR-07**

**Challenges and Coping Strategies of a Multipurpose Cooperative During the Pandemic**

*Catherine L. Banig, Trixxel Jun M. Baraoidan, Janelle G. Delarmente, Charles Johnson C. Fajardo, Jemaima Jaylen M. Tabancay, Elnora V. Adalem, CPA, MBA*

This research focused on determining the challenges and coping strategies of Providers' Multi-Purpose cooperatives during the pandemic. To answer the study's concerns, the researchers used

a descriptive-qualitative method to collect data from the five (5) key informants in the working committees. The key informants of the study were selected from the Naguilian (main) and Cauayan City branches. Results showed that cooperatives were greatly impacted by Covid-19, which led to a temporary closure, decreased receipts, and production supply shortages. Due to the widespread infection increase in the province, the employees used a centralized system to adopt workplace health protocols. Furthermore, adaptable measures were used by the Cooperative to secure business operations, such as the implementation of planned businesses to recover from weak results. Employee benefits were also paid regularly, and no workers were laid off due to the pandemic.

*Keywords:* internal operations management, planned businesses, self-help, worker's protection, workplace safety, working condition



**SAB-SR-08**

**COVID-19 and Coping Mechanism of Boarding House Owners at University Towns in Northern Luzon**

*Mhica Ella H. Aguilar, Daryl C. Lunag, Irvin Andrei P. Ongyaco, Charlotte C. Orine, Kayra Grace C. Sabado, Maria Concepcion T. Jalijali, CPA, MBA*

The COVID-19 pandemic caused boarding houses to shut down since students, as their main clients are no longer required to report in school. Thus, this research was intended to identify the coping mechanisms of boarding house owners in Northern Luzon. Using the qualitative-descriptive research method, insights on the coping mechanisms regarding financial stability, such as revenue-generating activities, cost-saving schemes, obligations, and other relevant aspects of the ten selected informants, were gathered through phone calls, interviews, face-to-face interviews, messenger, and google forms. Results showed that boarding house owners lost their rental income due to a lack

of tenants during the lockdown period, payment of financial obligations to the banks was extended, and taxes due to the government were reduced. Unpaid rentals were also forgiven, but no financial assistance from the government was received. Due to the inability to generate rental income, boarding house owners could save a little from budgeting and cutting off expenses, properly allocating their income, and engaging in other occupations or businesses.

*Keywords:* cost-saving schemes, obligations, pandemic, revenue-generating activities



**SAB-SR-09**

**The Influence of Online Shopping Determinants and Challenges to Customers**

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The main purpose of this research was to determine the influence of online shopping determinants and challenges on customers and take strategic actions to educate them about online shopping. The study used the descriptive research technique, with an online survey form utilized to conduct and administer the respondents' assessment of the extent of online shopping determinants. A total of one hundred respondents were faculty members and students of the Business and Office Administration and Entrepreneurship Department under the School of Accountancy and Business who bought products and services online. Results showed that the majority of the respondents were students, 20 years old. Most were BSBA-FM students who spent more than three hours per day online while they spent less than P1,000 on a single purchase, with purchases ranging from P1,000-P5,000 per year. The majority also used the Shopee app to purchase the products. They also decided to avail of a reduced product shipping rate for reduced expenses on

product delivery. They chose the best shopping apps with a lower shipping rate. They were highly influenced by the following online shopping determinants: security, information availability, quality, pricing, and time which were rated high except for shipping which was rated low by the respondents. They also encountered challenges on the following online shopping determinants: security, information availability, shipping, quality, and time which were ranked most of the time except for pricing, which was rated sometimes by the respondents. Lastly, the study found that the extent of influence of online shopping determinants was related to respondents' age, classification of the respondents' frequency of internet use per day, and most frequently used online shopping websites. Strategic actions were proposed to educate the respondents on the online shopping determinants.

*Keywords:* information availability, pricing, security, security shipping, time quality



**SAB-SR-010**

**Accommodation Facilities in the New Normal: An  
Analysis of the Coping Mechanisms of  
Hospitality Establishments Towards  
Business Sustainability**

*John Ace D. Agulay, Jasmin J. Almazan, Lezeah M. Ancheta,  
Hanah Edrie C. Curameng, Janzyriel R. Dalog,  
John Michael C. Ibarra, MSHRM*

This study examined self-confidence and submissive approach coping mechanisms toward the sustainability of accommodation facilities during a crisis. Respondents were the managers and supervisors of DOT-accredited hotels/resorts in the province of Nueva Vizcaya. Profile of managers or supervisors in terms of degree in college and years in the service were part of the study. Likewise, the profile of the accommodation facilities in terms of their number of rooms and the number of years operating was

determined. Data were gathered using interview guide questions and conducted with the virtual meeting application. Guide questions were based on self-confidence and submissive approaches. Results showed that the managers'/supervisors' self-confidence coping mechanism was derived from the extended help made by Government. Guidelines and training helped the respondents to be resilient in their management styles. The support shown by their family members was the submissive approach coping mechanism applied in the middle of the pandemic for them to sustain the business. From the result of the study, a coping mechanism framework was created.

*Keywords:* Business, coping, facilities, mechanisms, sustainability, and tourism



#### **SAB-SR-011**

### **Sensory Acceptability of Mulberry, Malunggay, and Lagundi Tea**

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This product development study evaluated the sensory acceptability of the Mulberry, Malunggay, and Lagundi tea. It determined the respondents' profile in terms of age range, sex, frequency of drinking tea, and preference of tea (hot or cold); sensory evaluation of the Mulberry, Malunggay, and Lagundi tea based on appearance, aroma, taste, and texture; comparison of the assessment of Mulberry, Malunggay and Lagundi tea by profile variables and their sensory evaluation of the product. This descriptive-experimental-evaluative research utilized 30 respondents who were faculty and staff of Saint Mary's University. Mulberry, Malunggay, and Lagundi tea were developed through three (3) phases of experimentation. The gathering of data was done using survey questionnaires and

taste tests based on the developed products' appearance, texture, taste, and aroma. Descriptive statistics were calculated, ascertaining the acceptability level of Mulberry, Malunggay, and Lagundi tea. Results showed that overall, the Mulberry, Malunggay, and Lagundi tea was acceptable as the product developed in terms of its appearance, texture, taste, and aroma. The One-way Analysis of Variance (ANOVA) revealed that there was no significant difference in the respondents' assessment of the acceptability of the product when grouped by profile variables.

*Keywords:* appearance, aroma, sensory acceptability, taste, texture



#### **SAB-SR-012**

### **Benefits and Concerns Arising from Virtual Reality in Tourism**

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Keith M. Santos, Mihaela Bonifacio, Nicole Bianca B. Molina,  
Mayvelyn S. Covita, PhD*

This study aimed to determine the participants' perceptions about VR technology, identify the benefits of using VR, surface encountered problems, and enumerate recommendations for its utilization. This was a qualitative study wherein an experiential type of research was employed. Focus group discussions were utilized to determine the student participants' perspectives and experiences regarding VR. The researchers utilized the purposive/selective sampling technique in choosing the participants. The results revealed that the participants perceived virtual reality as a technology that provides an immersive virtual experience of different destinations, particularly in the tourism context. The participants' most mentioned benefit of VR was its utilization as a promotional tool for tourism products like destinations. While the surfaced concerns on the use of VR were low data connectivity that caused lags, health problems like

dizziness, headaches, eye problems, and addiction/obsession - the most serious disadvantage were mentioned by the participants. Based on the results, the participants mostly recommended improving the quality of VR videos to encourage more people to use them.

*Keywords:* actual tourism, non-immersive VR, technology, virtual environment, virtual experience, virtual tourism, VR 360-degree videos, VR promotion



### **SAB-SR-013**

#### **Challenges and Strategies of Farm Tourism Sites in Quirino Province**

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Bullecer, Yvonne Gwyneth A. Ablang, Monica D. Santos,  
Mayvelyn S. Covita, PhD*

This study aimed to determine the strategies of Quirino Province farm tourism sites and how this pandemic affected their operation. The study used comparative and qualitative research designs to compare and contrast the similarities and differences between the two farms regarding their operations and data gathered from interviews during an ocular visit. This study was conducted in two selected farm sites. The findings reveal that both farms did not meet the minimum requirements of the Department of Tourism, specifically on the facilities/amenities and sanitation part. Moreover, during the pandemic, both farms experienced challenges such as difficulty delivering their products, financial problems, and difficulty selling their products. It was also found that the farmers who implemented these strategies were able to address the challenges they faced by partnering with the government and buying solar irrigation pumps.

*Keywords:* challenges, farm tourism sites, strategies, ocular visit

**SAB-SR-014**

**Financial Sustainability of PUV Tricycle Drivers Amidst the COVID-19 Pandemic**

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Jayvie James N. Nilo, Ivy Lorraine B. Pastor, Jasmin Mae T.  
Pontalba, Francis Leo C. Tugab, BSA, CPA*

This study examined the financial sustainability of PUV tricycle drivers amidst the COVID-19 pandemic. Using the descriptive-qualitative method, the researchers interviewed 25 key informants from Bayombong, Bambang, and Villaverde in Nueva Vizcaya and Santiago City and San Guillermo in Isabela, providing the needed data. Findings indicated the following: the informants earned an average daily income that was just enough to suffice their basic needs, and sometimes, a portion for savings was allotted before the pandemic; the impacts of the pandemic on their livelihood were dominated by negative effects rather than positive ones; they encountered more difficulties managing their finances during the pandemic because their spending patterns changed, resulting in a tighter budget; and they also engaged in various coping mechanisms to adapt to the new normal.

*Keywords:* coping mechanisms, financial management, livelihood



**SAB-SR-015**

**Socio-economic Impact of COVID-19 and ASF Among Hog Raisers in Selected Municipalities in Northern Luzon**

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Angela C. Garra, MBA*

The onslaught of the ASF virus and the COVID-19 virus affected the lives of hog raisers. This study determined the socioeconomic impact of viral infections among hog raisers of selected municipalities in Northern Luzon. Using the qualitative-descriptive type of study, five key informants were purposely sought out and interviewed to find out the impact of the ASF and COVID-19 on their income, occupation, social support, and community safety. Findings revealed that the informants, comprising three from Ifugao and two from Quirino, were sole proprietors with fifteen average years in the hog industry, who were raising more than ten hogs, earned at least Php 60,000.00 annually, had other businesses as sources of income, and normally spent operational costs for feeds, medicine, and other utility expenses for maintenance upkeep. In terms of income, ASF caused losses wherein two hog raisers discontinued the business. Nevertheless, some also benefited due to the inflated prices of hogs. While COVID-19 produced various outcomes, some were still enduring, and one further grew his business. Some hog raisers had to rely on other businesses for financial income. As for occupation, much effort was exerted due to the virus. The government received little or no monetary assistance for social support. As to community safety, most informants did not have their hogs infected with the ASF or experienced positive COVID-19 cases. The combination of the ASF and COVID-19 greatly impacted their business.

*Keywords:* community safety, income, occupation, social support



**SAB-SR-016**

**Work-Readiness of Marian CPAs: Assessment in the Application of Undergraduate Learnings**

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Studies have shown a gap between college students' learning and the necessary competencies sought by the ever-changing

accounting profession. This study aimed to determine the work-readiness of the Marian Certified Public Accountants regarding their hard and soft skills and if the undergraduate learnings were applied within their respective industries. A survey through google forms was used and answered by Marian CPA board passers from 2015 to 2019. Findings in the study highlighted that the undergraduate learnings of the passers contributed highly to their work readiness as they are instantly employed after passing the board. Moreover, these learnings were positively applied in their respective workplaces. Respondents also, as a whole, assumed that they were well-prepared to enter the professional world. Soft skills were emphasized as more essentially needed than technical or hard skills. Soft skills effectively applied in the industry included communication skills, teamwork, and self-management. The passers poorly applied leadership. On the other hand, the hard skills were also effectively applied by the Marian CPAs. This included basic accounting knowledge, critical and analytical thinking skills, numeracy skills, IT proficiency, and professional judgment.

*Keywords:* accounting profession, college learnings, Marian CPAs, soft/hard skills



**SAB-SR-017**

**Impacts of COVID-19 Pandemic on Credit Collection of Selected Cooperatives with Micro-Finance Lending Operations in Bambang, Nueva Vizcaya**

*Monica Blossom B. Del Rosario, Alpha Mel S. Domingo, Jhunel G. Nabatilan, Jackielyn C. Rueme, Mitz April S. Villanueva, Dorilyn C. Tiongson, JD, MBA*

The COVID-19 pandemic has affected the world economy. Still, the severity of the situation for those most vulnerable sectors to the crisis, particularly lower-income groups in developing nations like the Philippines, has not been adequately highlighted. Hence, the focus of this research was on the microfinance sector, with the main goal of determining the

impact of the COVID-19 Pandemic on credit collection in selected cooperatives with microfinance lending operations in Bambang, Nueva Vizcaya, using indicators adopted such as collection methods; client monitoring; credit risk and loan application; debt structure; and credit policies. The study took a descriptive qualitative research approach. Purposive sampling was employed to select five cooperatives in Bambang, Nueva Vizcaya, as the study's respondents, represented by their respective informants. Face-to-face interviews were used to collect data transcribed, discussed, and analyzed using open coding and thematic analysis. Findings revealed, using the five indicators above-mentioned, that the COVID-19 pandemic had a detrimental impact on cooperatives' credit collection due to restrictions imposed and loss of work or livelihood of their clients, resulting in a decline in the collection. Lockdowns, local restrictions, prohibitions on large gatherings, skeletal personnel schedules, and limited periods of operation were among the restrictions enforced that had a significant impact on their credit collections. Notwithstanding, the cooperatives could adapt and implement the best strategies or adjustments available to survive the pandemic.

*Keywords:* adjustments, crisis, clients, government regulations, recession



### **SAB-SR-018**

#### **The Socio-Economic Profile, Costs and Benefits Perspectives of Upland Farmers at Barobbob Watershed: Towards an Analytical Framework for Responsible Farm Management**

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Bonares, Rhea Jane A. Bulahao, Trishia Mae M. Velasco,  
Jonathan P. Vergara, MAEd*

The study was conducted to determine upland farmers' perspectives on costs and benefits at the Barobbob Watershed relating to certain respondents' profile variables and the extent

of their farming practices. The study employed a quantitative-qualitative research design to fulfill the purposes of the study. The researchers chose a descriptive research design to determine the socio-economic profile of the respondents and elicit their cost-and-benefits perspectives on farm production. The qualitative research design was used to supplement and further explain findings on the Cost-and-Benefits perspectives of the farmers. Farmers' profile, farm production costs, and production benefits. Primary, raw, and unanalyzed data on the socio-economic profile and the cost-and-benefits perspectives of the respondents were provided to the researchers by Associate Professor Dr. Micah Ryan B. Ramel, adviser of the Barobbob Watershed Occupants Association (BWOA) and Pioneer of the John Wesley Center for Barobbob Watershed Development. The said data resulted from a household survey conducted by a team of Barobbob women trained and supervised by Dr. Ramel to conduct the survey interview. Accordingly, the survey data was gathered during the 1<sup>st</sup> quarter of 2019. The 30 respondents chosen from the household survey were informed of the researchers' intended use of their personal and farm production data for this research. Formal Communication was sent to the Barobbob Watershed Owner's Association before the data analyses were given to the researchers.

*Keywords:* farm, household survey, production data, watershed occupants, watershed development



**SAB-SR-019**

**The Financial Management Practices of the Contractual Employees of Private Institutions of Selected Municipalities in Nueva Vizcaya during the COVID-19 Pandemic**

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Megan Mae O. Seangoy, Mary Elaine G. Valdez,  
Monaloufel Rosario F. Jasmin, MSBA, PhD*

Financial management is essential in everyone's daily life. This is a method of budgeting monthly income and planning how to

allocate money for expenses, savings, and other financial goals. This study was conducted to determine the financial management practices, broadly categorized into expenditure, debt, money, savings, and general financial management practices of contractual employees during the COVID-19 Pandemic in relation to their profile variables. The respondents were the contractual employees of private institutions in selected municipalities in Nueva Vizcaya, including construction workers, freelancers, security services, merchandisers, and on-call or project employees. It used descriptive and comparative statistical analysis. Data was gathered using Google Forms and printed questionnaires which were answered with the assistance of family members. The respondents were generally characterized as single adults aged 16 to 25. Most of them belong to families with four to six members and a minimum monthly income of ₱5,001-₱10,000. They were also college graduates. Findings revealed that most of the respondents essentially monitored and estimated their expenses. They also practiced allocating money to repay their debts on time and rarely received an overdue notice for late payments. For money management, the practices of writing their plans and goals to manage their money correctly were neither important. They also practiced setting aside money for future purposes and emergencies. In financial management, their practices of making plans to achieve their specific financial goals were important. The study revealed that contractual employees were affected by the pandemic and unprepared for economic changes.

*Keywords:* budget, economic, financial, household, money, planning, on-call, or project employees



**SAB-SR-020**

**Factors Affecting Customers' Satisfaction with Online Food Delivery Services in Nueva Vizcaya**

*Anna Fritzie T. Gammad, Erin Kirsten P. Larosa, Paula Nicole M. Tugas, Chares J. Ogaya, Harrison T. Villanueva, PhD*

This study determined the factors affecting customers' satisfaction with online food delivery services in Nueva Vizcaya in terms of performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, price value, and habit. The study utilized the descriptive-correlational research design and gathered from the sample through Google Forms. Findings showed that most respondents were Bachelor of Science in Accountancy female students between the ages of 21 to 23 with delivery addresses in Bayombong, who preferred Carabuy. co as their online food delivery service provider had been using online food delivery services for 1 to 3 months, often used them at an average of once per week, and spent ₱301 to ₱500 per week. Performance and effort expectancy greatly affected customers' satisfaction with online food delivery services. Social influence, facilitating conditions, hedonic motivation, price value, and habit factors had moderate effects. Performance expectancy was significantly correlated to the level of effect in customers' satisfaction with online food delivery services and delivery address and effort expectancy in preferred online food delivery services. The length of time of using online food delivery services had a significant relationship with the level of effect along performance expectancy, facilitating conditions, and habit; all factors except hedonic motivation for the frequency of online food delivery service; and social influence, facilitating conditions, hedonic motivation, and habit for the amount usually spent.

*Keywords:* customers, food service industry, online food delivery, satisfaction



**SAB-SR-021**

**Modern Office Technology Competencies of Office Personnel in a Higher Academic Institution**

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This study was designed to determine the modern office technology competencies of office personnel in a higher academic institution. It covered the respondents' profiles, such as age, gender, and years of service; modern office technology competencies; and the problems encountered by office personnel in the areas of using these modern office technologies. Online Google forms were sent via messenger accounts to all seventy (70) respondents for them to answer. Results showed that most respondents were male, aged 31–40 years old, and had served for ten years or less in the university. The respondents also displayed a very high extent of competencies in using modern office technology. Many identified problems in modern office technology operations resulted in the formulation of recommendations for improving performance quality.

*Keywords:* performance, productivity, training



## **SAB-SR-022**

### **Profile, Strategies, and Challenges of Newly Formed Courier Services in Region 2**

*Jasper A. Manganaan, Mark Joseph A. Veal, Donna F. Domin-ong, Jane Vanessa B. Mercado, Alyssa Maei G. Tolentino, Jeanette R. Mania, BSC, CPA*

This research aimed to develop educational material that would feature the respondents' stories, the challenges they had experienced, and the strategies they used to address these problems. This study used a descriptive-qualitative approach, which was significant in gathering the information needed to determine the courier firms' profiles, strategies, and challenges. Results showed that all the respondents completed their undergraduate degrees and were also owners of courier firms operated under the Sole-Proprietorship business. Findings also revealed that all these firms were formed and established during the pandemic. These firms pointed out that the challenges they encountered specifically on internal factors were

the delay of deliveries due to lack of proper training and orientation, which they could overcome by coming up with their own unique and individualized strategies. The study also showed that these firms were greatly affected by price hikes identified under external factors, which was solved through their strategies. These firms affirmed that their main financial strategy was to adjust their service fee to equalize the effect of price hikes. Management strategy focused on proper training and orientation as an effective strategy. Lastly, the study showed that digital platforms were the most used marketing strategy.

*Keywords:* external factors, financial strategy, internal factors, management strategy, marketing strategy



### **SAB-SR-023**

#### **The Saving Behavior of Management Accounting Students of Saint Mary's University**

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This study aimed to determine the level of saving behavior and the factors affecting the saving behavior of Management Accounting students of Saint Mary's University of Bayombong, Nueva Vizcaya. The study used a survey questionnaire distributed via Google form to Management Accounting students of Saint Mary's University. In total, the study received 50 returned questionnaires. Based on the study's findings, most students were 21 years of age, female and fourth-year students. They received a monthly allowance from their parents averaging 1500 or below. The overall level of saving behavior of the respondents was high. The management accounting students' saving behavior did not significantly differ regarding age, sex, year level, source of allowances, and average monthly allowance. The factors that affected the saving behavior of the respondents were financial literacy, parental socialization, peer influence,

and self-control. The respondents' average monthly allowance affected self-control as a factor affecting saving behavior. Lastly, the study revealed that financial literacy significantly relates to saving behavior.

*Keywords:* age, average monthly allowance, factors, saving behavior



**SAB-SR-024**

**Spending Behavior of Management Accounting  
Students of Saint Mary's University  
During the COVID-19 Pandemic**

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May A. Calderon, Jizeljoy M. Delos Reyes, Hannah Marie C.  
Galvez, Angela C. Garra, MBA*

This study aimed to determine the level of the spending behavior of Saint Mary's University Management Accounting students during the Covid-19 Pandemic in terms of physiological needs, personal wants, academic purposes, and Covid-19 essential items. A descriptive-comparative-correlational-quantitative design was used in this study, and a survey was conducted via Google Form on a sample of 127 management accounting students. Results showed that out of 127 respondents, the majority were female, and their mean age was 21-22. Most respondents received allowances from their parents, and their average weekly allowance and expenses varied from ₱1 to ₱300 per week. Regarding physiological needs, personal wants, academic purposes, and COVID essentials, the respondents' total level of spending behavior could be characterized as "tight." The most influential factor that affected the spending behavior of the respondents was quality. Under physiological needs, only celebrity influence significantly differed in the spending behavior of the respondents. When buying for personal needs, their family background, lifestyle, and necessity significantly differed in the respondent's spending behavior. When buying for academic needs, celebrity influence and other consumers'

feedback affected their buying behavior. In contrast, price and celebrity influence significantly differed when buying COVID-essential items.

*Keywords:* academic purposes, COVID essentials, factors, management accounting students, personal wants, physiological needs, spending behavior



### **SAB-SR-025**

#### **Financial Literacy and Financial Challenges of Selected Micro-Entrepreneurs in the Public Market of Bayombong, Nueva Vizcaya During the COVID-19 Pandemic**

*Recel P. Benhel, Melody K. Binwag, Joyce Ann C. Burton, Reizza Joy D. Manzano, Emer Joy I. Sagun, Harrison T. Villanueva, PhD, Jonathan P. Vergara, MAEd*

This study was conducted to assess microentrepreneurs' financial literacy and financial challenges in the Bayombong, Nueva Vizcaya public market during the COVID-19 pandemic. It was descriptive-quantitative, correlational, and comparative research with 38 respondents, corresponding to the number of legally registered vegetable vendors. The study respondents were provided with questionnaires that aided the researchers in determining their financial literacy and financial challenges in spending, budgeting, saving, and borrowing. Overall, the study's findings suggested that the vegetable vendors had moderate financial literacy, which was affected by demographic factors such as age, daily sales, and daily expenses. Meanwhile, they agreed that they faced financial challenges, which were affected by their age, number of years as a micro-entrepreneur, and daily sales. Although their financial challenges and overall financial literacy were not correlated, it was determined that vegetable vendors should engage in financial training/programs to make more effective financial decisions to sustain their businesses.

*Keywords:* budgeting, borrowing, saving, spending, vegetable vendors

**SAB-SR-026**

**Impact of the COVID-19 Pandemic on the  
Financial Adjustments of Returning  
Overseas Filipino Workers**

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L. Castillo, Jr., Russel Mar B. Dacumos, Joanne A. Espiritu,  
John Lindy Soriano, BSA, CPA*

The study's primary objective was to identify what possible means the Overseas Filipino Workers were doing to subsist during this global pandemic. In doing so, additional information about their struggles in adjusting to this dilemma also surfaced. The study employed a phenomenological approach, and 2-3 respondents from different municipalities who returned home during the pandemic were interviewed through a semi-structured interview. Data gathered were combined and analyzed, taking note of the major and variation of their answers thematically. After the conduct of the study, it revealed that the suddenness of the pandemic had become a challenge for them since they were not able to save enough money. The findings also showed how these former overseas Filipino workers thrived amidst the pandemic to continuously find other ways to earn income to provide for their families.

*Keywords:* employment, remittance transfers, stability



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## **SAB FACULTY RESEARCHES**

### **SAB-FR-01**

#### **Awareness, Practices, and Issues Gearing Toward Green Technology among DOT Accredited Accommodation Facilities in a Northern Philippine Province**

Dr. Mayvelyn S. Covita  
*Lead Researcher*

John Michael C. Ibarra and Aileen P. Lamson  
*Collaborators*

Green technology pertains to the utilization of technology considered to be environmentally friendly. It is anchored on the proper production process or supply chain. Moreover, it has something to do with the means of energy production, which is less harmful to the environment in comparison to the more traditional ways of generating energy. Concerning the tourism industry, such a concept is a much-needed application in practically and reasonably operating this industry, looking forward to achieving sustainability. In this light, even small or medium-sized tourism enterprises need to be observed on what significant moves they contribute to advocating green technology. Thus, determining their awareness and current practices and outlining the issues encountered concerning their respective operations are essential objectives for this study. This research was descriptive-qualitative as a modified questionnaire from the Best Environmental Practices (BEP) for the Hotel Industry was utilized to gather data surfacing answers to the set objectives. In this study, the DOT-accredited accommodation facilities generally were moderately aware of efforts on green practices focusing on water and energy efficiency, solid waste minimization, and environmental purchasing. Side by side with the practice, the concerned accommodation facilities, on average, were currently in the practice of these efforts in

moderation as well. Not much difference surfaced from the survey conducted. It could be inferred that generally, though most of the employees were aware of these efforts or initiatives on green practices, management lacked efforts to cascade specific initiatives that could have heightened their awareness. This was also true with practice, wherein the participants believed they were indeed practicing green initiatives as described in the survey.

*Keywords:* green technology, sustainability, hospitality operations, green practices, best environmental practices



**SAB-FR-02**

**Promoting Traditional Health Care among  
Itinerant Wellness Therapists**

Sherween Jerry Paul V. Saquing  
*Lead Researcher*

Rodora P. Tipay and Dr. Erlinda T. Espano  
*Collaborators*

Hinged upon Travis' illness-wellness continuum, this study was premised on the acceptance of complementary and alternative medicine (CAM) in the broad spectrum of wellness, which is now being endorsed by health sectors, both public and private. Hospitals and wellness business centers now abound because of the therapeutic advantages brought about by the non-western modalities of healing. Massage, in particular, has been a sought-after source of relief from ailments and stress-related physical complaints. Amidst the mushrooming of clinics and wellness salons, there exists a notable niche for itinerant wellness providers. This research intended to profile the informant-itinerant wellness providers as to their experiences in CAM; identify their marketing strategies, if any; and surface circumstances of their staying power. Using the qualitative-descriptive research mode, interviews were conducted among

ten purposively selected key informants with a mean age of 58 years old, with 23 years of experience in the industry. Clients resorted to them due to exhaustion from medical interventions, for relaxation, and for belief in their healing powers. Service outcome, healing touch, locus of service, age, longevity in the industry, and therapist-patient familiarity were the main reasons for their staying power.

*Keywords:* complementary and alternative medicine, hilot and massage marketing



**SAB-FR-03**

**Product-Market Growth Strategies of an Organic Product Trader in Northern Luzon**

Angela C. Garra  
*Lead Researcher*

Dr. John Octavious S. Palina, Elnora V. Adalem,  
and Monaloufel Rosario F. Jasmin  
*Collaborators*

This study was undertaken to determine the market-product growth strategies and challenges of an organic trader in Northern Luzon in market penetration, product development, market development, and diversification. The qualitative case study method of analysis was used to evaluate the profile, market-product growth strategies, and challenges encountered along the growth strategies of the agricultural organic product trader. Documents on certifications and product lines were collected, and the establishment's manager was the study's key informant. Findings revealed that the cooperative federation has been operating for 11 years now, has been accredited by the Organic Certification Center of the Philippines (OCCP) Inspection and Certification Services, Inc., and offers OCCP-certified fruits and vegetables, non-certified crops and processing plants, including rice milling, postharvest facility for fruits and vegetables, drying, storage and selling area. The

cooperative federation caters to customers who physically visit and buy from their store and customers from the Department of Education Division of Nueva Vizcaya who buy their veggie and banana chips per week. Government and non-government organizations provide technical and financial support. The cooperative federation applies the market-product growth strategies. However, there are still areas for improvement to assist them in improving their strategies. Lack of customer service and marketing strategies training, better food processing techniques, unattractive packaging and labeling of products, and limited supply of raw materials to meet the production quota were challenges to market-product growth strategies. Possible interventions were identified to help the cooperative grow its market and product through an extension program.

*Keywords:* diversification, market penetration, product development, market development



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**Research Unit**  
**SCHOOL OF**  
**ENGINEERING, ARCHITECTURE, and**  
**INFORMATION TECHNOLOGY**  
**(SEAIT)**

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<b>Architecture</b>	Carlo Artus D. Julian, UAP Charmaine B. Bacarra, UAP Genesis P. Morales, UAP Audry May C. Dominguez, UAP Carina B. Binwag, UAP
<b>Information Technology</b>	Adonis V. Garces, DIT Paulina A. Marzan, MSIT Essel T. Cañaberal, MIT Jerickson S. Chua, MIT Rogie G. Taborda, MIT Rocel Audrey J. Batara, BSIT Milagros S. Constantino, MIT
<b>Guest Panel</b>	Jerry R. Gamiao, Reg. ECE (Specialization: Biomedical Engineering) Moises Viernes, MD (Specialization: Medicine)



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## SEAIT STUDENT RESEARCHES

### SEAIT-SR-01

#### **Homephibian: An Adaptive Concept for the Construction of a Residential Building in Tuguegarao City, Cagayan Flood-Prone Locality**

*Mille Alfred L. Agaloos, Mac Gilbert A. Hernandez, Lexther  
Jhon D. Peñaranda, Hans Christian E. Peralta,  
Aurus Jodeo C. Tiam, Reg. CE, MSCE*

Flooding is the most common and destructive natural catastrophe in the Philippines caused by a typhoon. This flooding can cause severe damage to infrastructures and can harm human life. Thus, the so-called homephibian project aimed to design a flood-adaptive house that would float depending on the water level and could accommodate a family composed of 4-6 members. This study would benefit the residents of Barangay Centro 11, Tuguegarao City, Cagayan. The researchers focused on the structural, architectural, electrical, plumbing, detailed plan, and structural analysis, including the design of the buoyant foundation to ensure theoretical floating stability and cost estimate of the proposed structure, including its duration. The proposed structure was designed using reinforced concrete and steel following the National Structural Code of the Philippines (NSCP 2010 & 2015) and the National Building Code of the Philippines (NBCP). By visiting the site and interviewing the Provincial Disaster Risk Reduction Management Office of Cagayan, the researchers were able to gather the necessary data needed for the proposed project. The proposed homephibian had an area of 119 square meters of building footprints and a total of 197 square meters of floor area, which consisted of a ground floor with a front and back terrace, mezzanine, and roof deck. The dimension of the buoyant foundation is 8.2 meters by 8.2 meters by 1.5 meters. Theoretically, the homephibian would float

if it reaches the immersion depth of 1.03 meters by the flood. The total cost of the project was Php8,680,332.20, with a duration of 168 working days.

*Keywords:* buoyant foundation, flood-adaptive, flooding, homephibian



### **SEAIT-SR-02**

#### **Green Calaboose: A Two-Storey Jail Facility at Provincial Capitol Compound, Bayombong, Nueva Vizcaya**

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Overcrowding in prison cells has become an alarming issue and requires serious attention. This difficulty might result in health hazards and the curtailment of the residents' physical, emotional, mental, and spiritual development. Rightfully convicted or not, people are still entitled to have decent lives. With this subject in mind, this research aimed to improve the quality of life of inmates and employees by providing a two-story jail facility with green architecture. The researchers designed the structure according to the gathered data and structural and building code standards. This proposed project had 20 cells accommodating the need to house up to 200 to 250 male Persons Deprived of Liberty (PDL), designed to be eco-resilient and eco-efficiency, adapting the use of natural lighting and ventilation. With the obtained design, the proposed project would significantly improve the inmates' quality of life and the personnel of Nueva Vizcaya jail. The project's duration was 181 calendar days, with Php 19,713,664.77 estimated total project cost.

*Keywords:* Green architecture, jail facility, persons deprived of liberty, overcrowding



**SEAIT-SR-03****Pinyagana: A Proposed Pineapple Fiber Production Facility at Villa Quirino, Bagabag, Nueva Vizcaya**

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Patricia Jane A. Matterig, Jesus Kevin G. Zamora Jr.,  
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The main purpose of this research was to develop a design and analysis of the proposal of Pinyagana, a pineapple fiber production facility at Villa Quirino, Bagabag, Nueva Vizcaya. It was concerned with generating technical plans, detailed estimates of the project, construction specifications and methodology, and the proposed facility's construction schedule. This study intended to emphasize an engineering solution instead of the municipality's pre-existing challenges in the pineapple fiber industry, where there was a lack of adequate facilities, which limited the maximization of the pineapple fiber output. Utilizing first-hand data from observation and consultation, the conceptual map of the study was generated that served as the basis for the analysis of the general condition of the antecedent problem and the methodological process flow of the entire study. This study illustrated the use of significant findings in production facility space planning and design to achieve efficiency and serviceability for the proposed structures. Engineering data were also incorporated in the design and analysis of the structures integrating present-day solutions to the foregoing issue. The project comprised two (2) structures, namely: a pineapple fiber production building; and an office for the Amballo Pineapple Producers Cooperative (APPC).

*Keywords:* Production Facility, pineapple fiber industry, space planning, and design

**SEAIT-SR-04****VIT-X: Vizcaya Intermodal Terminal Exchange**

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Viluan, Aurus Jodeo C. Tiam, Reg. CE, MSCE*

Traffic congestion is currently experienced in the municipality of Bambang, in the province of Nueva Vizcaya, due to terminals being placed in inefficient locations and passengers being dropped off on curbsides and the national road shoulder. As a result, the researchers proposed an intermodal terminal entitled “VIT-X: Vizcaya Intermodal Terminal Exchange” at the proposed location. This project proposal envisioned reducing traffic congestion by applying the green engineering and architecture concept. The researchers’ primary goal was to develop a transportation terminal that would fully utilize the bypass road construction project while accommodating other public utility vehicle franchises, providing service to commuters and tourists, and boosting tourism in Nueva Vizcaya. The main terminal had enough capacity to accommodate many commuters, visitors, and guests. On the other hand, the bay sheds were intended to maximize the amount of space available on the land.

*Keywords:* bay sheds, by-pass road, commuters, green engineering, terminals



## **SEAIT-SR-05**

### **CoCo- Gmelina Glued Laminated Timber**

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Coconut and Gmelina Arborea cover the largest plantation in the country and have been known for their unique property; the coconut for its density and the Gmelina for its bending strength. However, these timbers are not yet fully recognized to be used as structural members. Through glue lamination (glulam), an enhanced technique to maximize the strength of selected lumbers, the coconut and Gmelina timber may find their way to

be utilized as a structural member in the engineering industry. Therefore, this study investigated the physical and mechanical properties of the coco- Gmelina glued laminated timber to check its adequacy as a structural member. The laminated setups at different layer positions were compared with the solid wooden setups in bending, shear, and compressive strength with two trials per setup. This was the basis of the insight into whether or not this set-up was suitable to be introduced as a structural member in the construction field. The overall result of the glued laminated samples exceeded the strength of the solid samples in every test, and the statistical analysis results indicated that the glulam samples were at par with the control setup, the Gmelina. Results of the study revealed that coconut and Gmelina were compatible, producing a stronger material from their mechanical properties. Setup H, a three-layer setup comprising 10mm Gmelina at the outer parts and a 30mm coconut at the middle, was considered the most efficient glulam to be utilized as a structural member in construction.

*Keywords:* bending strength, compressive strength, shear strength, structural member



#### **SEAIT-SR-06**

### **Pagbalunan Low-Rise Building: A Three-Storey Public Market with Parking Lot in Barangay Poblacion South, Solano, Nueva Vizcaya**

*Jannenne Jade F. Agrimor, Lovely Joy F. Bibay, Benjamin B. Gaboy Jr., Xyrene Ashley A. Magat, Leo Jericho D. Meneses, Irvin Paul D. Quines, Reg. CE*

The Citrus Capital of the Philippines, the province of Nueva Vizcaya, is one of the five provinces of Cagayan Valley and is well-known for its tourist attractions. The province has fifteen municipalities, including Solano being a first-class municipality. As the main commercial and financial center, the municipality is expected to have an organized public market that caters to

various needs of consumers and vendors, which is quite a challenge for the place. Poor traffic status affecting the perimeter of the widely visited Solano public market is observed. Congestion also happens inside the market; an unorganized setup confuses and exhausts the consumers and delivery personnel. For these reasons, the researchers came up with a proposal that would resolve the situation of Solano by proposing a development plan that would transform the current market into an emerging multipurpose building with parking and commercial spaces. The proposed redesigning of the Main Solano Public Market and construction new public market was visualized to improve the organization of dry goods inside the market, escalate the municipality's contribution to the economy, and minimize traffic in the area. By conducting site visits and data gathering, the researchers produced plans and specifications for the proposed project following the National Structural and Building Standards. The researchers estimated the total project cost to be Php 321 540,002.79 with a project duration of 866 calendar days. Based on the study's conclusions, the proposed project was feasible in the technical aspect. The researchers recommended a full study to summarize the proposed project's cost-effectiveness, economic capability, and social and environmental impact.

*Keywords:* development plan, cost-effectiveness, economic capability, plans, and specifications.



#### **SEAIT-SR-07**

##### **Sugarcane Bagasshe Ash (SCBA)-Based Geopolymer Concrete Precast Pavement (GCPP)**

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Concrete is the most widely used construction material for its strength and versatility. One of its main components is Portland Cement, which during its production, produces CO<sub>2</sub>, which

results in the *Enhanced* Greenhouse Effect. Extensive research has been conducted to reduce its negative environmental impact, and one of these is Geopolymer Concrete which uses industrial by-products. This paper dealt with the utilization of Sugarcane Bagasse Ash (SCBA) and Liquid Alkali Activator (LAA: Sodium Silicate and Sodium Hydroxide) as a Geopolymer Concrete Precast Pavement (GCPP). Sugarcane Bagasse Ash is an abundant by-product of the sugar mills here in the country, which is why it was chosen as the main component. Furthermore, this study evaluated the flexural and compressive strength of SCBA-based Geopolymer Concrete. It was compared to the strength of the Ordinary Portland Cement (OPC)-based concrete as set by ASTM C39 and ASTM C78-94. Samples were fabricated with different SCBA-LAA Ratios and underwent testing with 7 and 14 days for flexural strength and 7, 14, and 21 days for compressive strength. The results showed that SCBA-based Geopolymer Concrete was not comparable to OPC-based concrete. However, the SCBA-based geopolymer concrete was not fully cured through physical examination. With this said condition, a theoretical analysis was conducted to determine the true value of its strength. It showed that SCBA-based geopolymer concrete passed the desired strength required for pavement and was comparable to OPC-based concrete. Maximizing the strength, the calculated SCBA-LAA Ratio was 1.71. Thus, SCBA could be used theoretically as a GCPP, assuming it should undergo proper curing.

*Keywords:* geopolymer concrete, industrial by-products, precast pavement



#### **SEAIT-SR-08**

### **Coconut Shell Ash Mixed with Egg Shell Powder as a Partial Replacement of Ordinary Portland Cement in Concrete Hollow Block Production**

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Coconut and egg shells are wastes generated from farms, poultries, restaurants, and even households, which are considered agricultural wastes and impose a great environmental impact. To maximize its benefits, the researchers proposed using coconut and egg shells as partial replacements for ordinary Portland cement in producing masonry units, widely known as hollow concrete blocks. This study aimed to evaluate the strength of a 4-inch concrete hollow block by partially replacing different percentages of ordinary Portland cement with coconut shell ash mixed with eggshell powder and compared it to the standard strength set by the American Society for Testing Materials (ASTM) C129. The density, absorption, and moisture content were also determined and compared to the results of the conventional hollow block. In obtaining the maximum stress capacity of the hollow concrete blocks, the researchers conducted an experimental test using the Universal Testing Machine (UTM) to determine the strength of the coconut shell ash-egg shell powder generated hollow concrete blocks. In this study, the specimens were made using a concrete hollow block molder machine. The researchers then conducted curing for seven days, 14 days, and 28 days and tested the concrete hollow blocks, respectively. The results of the tests showed that the concrete hollow blocks with different percentages of coconut shell ash and eggshell powder had absorption percentages of 6.91%, 7.09%, 7.69%, 6.28%, 7.29%, respectively, which were almost similar to the conventional hollow block that had an absorption percentage of 7.19%. Moreover, the concrete hollow blocks with the highest percentage of replacement had the highest density with 2972.5 kg/cu.m. compared to the conventional concrete hollow blocks with 2945 kg/cu.m. The slump test showed the workability of the different mixes. The results show that as the percentage of replacement increases, the workability of the mixture decreases.

*Keywords:* absorption and moisture content, density, maximum stress capacity, standard strength



**SEAIT-SR-09**

**En Vivo Gobierno de Dupax Del Norte: The New  
Government Service Center**

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Dupax Del Norte is one of the municipalities of Nueva Vizcaya. Due to population development, the number of households and buildings is increasing. Lack of calamity responders is one of the problems, especially for fire incidents and climate change. Thus, the *En Vivo Gobierno de Dupax Del Norte: The New Government Center* was proposed. The old government buildings and offices never even had a comfortable environment; thus, the design of their offices was also included in the project. The main objective of this study was to design a two-story fire station and government offices. This fire station would cater to the needs of the Municipality in protecting and preventing calamities, specifically fire disasters and a government office. This would provide convenience to the workers and the public. The technicalities of the proposed project using the specification and designs under the National Structural Code of the Philippines 2015 (NSCP 2015), National Building Code of the Philippines (NBCP), Philippine Green Building Code, and Fire Code of the Philippines were successfully determined. The project's total estimated cost was Php 19,691,368, and a total duration of 258 calendar days.

*Keywords:* bureau of fire protection, government offices, fire station



**SEAIT-SR-010**

**Using Water Hyacinth Fiber for Improvement of  
Flexural Strength of Concrete**

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In this research, the performance of the concrete with the addition of varied water hyacinth fiber as reinforcement was evaluated. This paper presented a study on the performance evaluation of slump flow and flexural strength up to 14 days with 0%, 0.5%, 1.0%, 1.5%, 2.0%, 2.5%, and 3% of Water Hyacinth Fiber (WHF) added from the total weight of the cement. Results were compared to plain concrete; it concluded that Water Hyacinth Fiber Reinforced Concrete (WHFRC) provided positive results on the mechanical properties at around 14 days. Based on the result, the samples with 0.5%, 1%, and 1.5% WHF added increased flexural strength. In contrast, the flexural strength of the concrete mixtures with 2%, 2.5%, and 3% added WHF decreased. Among the trial mixture samples, the mixture containing 1.5% water hyacinth fiber attained the optimum value of 3.24 MPa compared to conventional concrete with 2.90 MPa.

*Keywords:* ASTM standards, curing, mechanical properties, slump



#### **SEAIT-SR-011**

##### **A Proposed Subdivision at Sitio Manalpaac, Barangay San Pablo, Cauayan City, Isabela**

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Cauayan City, known as a third (3rd) class city in Region II, has greatly contributed to the urbanization of the whole region, resulting in the population's expansion. Due to its recent growth, a new urban core and the international airport are proposed in Brgy. San Luis and a highway bridge connecting Brgy. Santa Luciana and San Pablo. Moreover, there is a housing development project at Sitio Manalpaac, Brgy. San Pablo for the development of the residential district. The main objective of

this subdivision project was to design a vertical and horizontal structure that would provide a safe, clean, peaceful, and sufficient space that could accommodate many people without impeding the day-to-day task of residents. The technicalities of the proposed project using the specification of PD 957 and designs under the National Structural Code of the Philippines (NSCP), National Building Code of the Philippines, and American Institute of Steel Construction (AISC) were successfully determined. The project's total estimated cost was Php 810,683,106.05, and a total duration of 1,896 calendar days.

*Keywords:* accommodation, housing development program, urbanization



#### **SEAIT-SR-011**

##### **Cabarroguis Public Market: A Rehabilitation as a Self-Sustaining Building**

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A previous sub-province of Nueva Vizcaya, the province of Quirino is known for being the youngest, smallest province, and The Lily of Cagayan Valley for the wonders it possesses. Quirino consists of six municipalities, including Cabarroguis, the provincial capital. Cabarroguis is known for having a locality with different cultures, such as Ifugao, Ilocano, Ilongot, and Tagalog. This culture is being modernized from time to time. Being the provincial capital of Quirino, it must possess the best economy and infrastructure compared to its adjacent municipalities. Still, it is the opposite of what Cabarroguis is. For this reason, the researchers came up with a proposal that would increase the economy of Cabarroguis by having an environmentally friendly establishment to rehabilitate Cabarroguis' public market into a self-sustaining market. The proposed rehabilitation was visualized to provide a business

venue that would engage more job opportunities and a well-functioning establishment such as pasalubong centers, new stalls for dry goods and wet goods, wide parking spaces for the customers, solar electric system, and water treatment system. The researchers produced plans and specifications for the proposed project under the National Structural and Building Standards by conducting an ocular inspection, site visitation, office consultations, and data gathering. The researchers also estimated the total project cost to be Php150,303,502 and a construction schedule project duration of 746 calendar days. Based on the results, the proposed project was feasible in a technical aspect, and the researchers recommended a full feasibility study in terms of the proposed project's social, financial, and environmental aspects.

*Keywords:* feasibility study, social, financial, and environmental impact, technical feasibility, total project cost, well-functioning establishment



## **SEAIT-SR-012**

### **Cauayan Domestic Airport: Engineered Towards Eco-Aerodrome**

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This project proposal aimed to prepare a set of technical plans for Cauayan Domestic Airport (*Paliparan ng Cauayan*) new Passengers Terminal Building in conformance to the latest specifications set by the National Structural Code of the Philippines (NSCP), International Civil Aviation Organization (ICAO), and International Air Transport Association (IATA) concerning the continuing growth of tourists in Region II. The basis of the design and capacity of the new Terminal Building, which is to be located in Cauayan Domestic Airport, Barangay

San Fermin, Cauayan City, was mainly on the statistical tourists' data provided by the Department of Tourism wherein the researchers were able to compute how much space was to be allotted for the main amenities of the building. The researchers came up with a ground floor area of 1056 sq.m, which was meant for departure and arrival with a mezzanine with an area of 944 sq.m for better airport monitoring meant only for airline offices and airport staff. In addition, the new Waiting Area, with an area of 502.50 sq.m, was designed for more convenience with a souvenir shop and a concession for better passenger service. Furthermore, the old Terminal Building was transformed into a wider and more convenient New Passengers Terminal Building with integrated eco-friendly facilities and structures for better passenger service. There were also additional parking spaces beside the new terminal for better traffic flow, ensuring every traveler's satisfaction. Safety and security were guaranteed since surveillance cameras were installed throughout the building. It comprised two (2) X-ray Baggage units for the main entrance and pre-departure lounge, with a conveyor belt readily available for the much larger arrival area. The total project cost was estimated to be Php 169 969 777.85 with a duration of 660 working days.

*Keywords:* latest specifications, continuing growth of tourists, environmental-friendly, terminal building, safety and security



**SEAIT-SR-012**

**Expansion of Engineered Sanitary Landfill  
in Solano, Nueva Vizcaya**

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Maximo, Phebe Gay N. Ramiento, Dianne Jane R. Sibayan,  
Jamil G. Versola, Aurus Jodeo C. Tiam, Reg. CE, MSCE*

The increasing amount of waste generated is a growing problem that the province of Nueva Vizcaya is currently facing. If this problem is not addressed, it will threaten nature and public

health. This study on expanding the sanitary landfill located at Barangay Concepcion, Solano, Nueva Vizcaya, aimed to determine an alternative solution by adding facilities and expanding the sanitary landfill to improve its capacity further. For more than a decade, the existing sanitary landfill (SLF) has been a big help in protecting public health and the environment. However, the third and last cell only lasted for nine years. Consequently, the existing SLF may not be able to be functional anymore. Hence, the present study provided a conceptual framework to elaborate the methods for addressing the problem. The study still lacked evidence to prove whether or not this expansion is feasible; however, the computations and results showed a possibility of establishing another cell at the same location because both the existing SLF and proposed expansion fall under Category II. Furthermore, the proposal would add three years lifespan for an additional cell and workable facilities for the municipality, such as an operation house and weighbridge for a sustainable and accurate report of waste disposal and vermiculture for the cultivation of annelid worms to be used in composting or as bait.

*Keywords:* expansion feasibility, operation house, vermiculture, waste disposal, weighbridge, workable facilities



### **SEAIT-SR-013**

#### **Rehabilitation of Aritao Public Market with Rainwater Collector System**

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Adrian S. Mariano, Daril C. Domingo, Alice L. Garma, Aurus  
Jodeo C. Tiam, Reg. CE, MSCE, Junniffen Tacadena, Reg. CE*

Public markets play a vital role in the development of the economy of a certain place. However, not all public markets are in good condition and can provide the needs of their constituents, just like in the case of the public market in Aritao, Nueva Vizcaya. The public market is one of the oldest public structures in the area. It is faced with different problems in

drainage, water supply, lack of stalls, lack of parking space, and, most especially, the inability of the structure to provide the needs of the municipality. To address these problems, building rehabilitation was proposed. The proposed public market comprises six new buildings in seven project construction phases. The main commercial building would be located in the front, the general commodities building at the side, and the two retail buildings for dry goods and two wet market buildings for wet goods would be located at the center of the market. The roof of these four buildings inside the market would have a catchment area for the rainwater. The market would have 50 parking spaces for private vehicles and 18 slots of unloading docks for delivery trucks. The researchers visited the site to develop the plans mentioned above for the public market. They gathered useful data in preparing the plans, designs, and specifications for the proposal per the Philippine Codes and Standards. Based on the calculations, the total project cost of the proposal was 236,996,910.44. It would be built in 1592 calendar days, excluding weekends, holidays, and construction intervals.

*Keywords:* catchment area, commercial building, dry goods building, general commodities building, unloading docks, wet market building



#### **SEAIT-SR-014**

##### **Madhu Ad I-pugo: A Proposed Development of a Sports Complex in Alfonso Lista, Ifugao**

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This project aimed to design centralized, functional, aesthetically pleasing multi-purpose structures and recreational areas that could accommodate and provide better sports facilities for the athletes and locals. This study would benefit the Local government unit of Alfonso Lista, the community, athletes, and tourists in conducting their activities and events. The researchers focused on the architectural design, structural

analysis, and cost estimate of the proposed vertical structures. It also covered the design and cost estimate of the proposed sports complex's pavements, courts, parking spaces, fencing, and landscaping. The proposed structure was designed using reinforced concrete and steel following the National Structural Code of the Philippines (NSCP 2015) and the National Building Code of the Philippines (NBCP). Gathering of data and consultations from the Municipal Engineering Office and Municipal Planning Development Council was made to come up with a reliable project proposal. The proposed sports complex was approximately 15 hectares composed of several sporting facilities such as the grandstand with a foot area of 1270 square meters which also stood on both sides of the 400-meter track rubberized oval, a gymnasium with training center adjacent on its side, which provided an indoor spaced training ground for young boxers, an aquatic center that contained a 25x50 meters Olympic pool, an administrative building that exemplified Ifugao architecture, dormitories that could cater 370 participants and spectators, cafeterias and public restrooms which had natural ventilation and good ambiance. The project's total cost was Php 223,172,513.98, and the duration of the proposed sports complex was 1662 Working Days. After the project designs had been accomplished, the researchers recommended additional facilities such as sprinklers for all the structures, movable and covered benches for every court, and technical plans for plumbing and electrical works.

*Keywords:* aquatic center, movable and covered benches, natural ventilation, plumbing and electrical works, sprinkler, training ground



#### **SEAIT-SR-015**

### **La Couronne De Isabela: A Proposed Eco-Resilient Sports Arena in Santiago City**

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The La Couronne De Isabela Sports Arena was a project proposal showcasing the application of the different principles acquired by the researchers after five years under the curriculum of Civil Engineering. This project was undertaken to solve the problem of the decentralized sports and cultural event facilities around the city of Santiago. And also, in the process of doing that, developing the city as a whole. All of the researchers, being almost regular visitors of Santiago city and near their homes, noticed this problem in Santiago and thus motivated them to start this study. They would later find out that this was already in the plan of the city written in their Executive-Legislative Agenda 2017-2019 (ELA) and Comprehensive Development Plan for the years 2015-2024. To do that, the researchers focused on one main objective of this study: to centralize the scattered setting of sports and cultural activities around Santiago city by proposing an Arena that will cater to the needs of its users, the locals of Santiago city, and many more. The researchers were able to attain their results through a step-by-step methodology. The first is the collection and gathering of data provided by the municipality and the existing area, which was done by visiting the site occasionally to investigate its environment. After this, the design of the Arena, its Parking Building, Pasalubong Center with offices, and the Terminal began. Complete architectural plans were provided and then analyzed for the design of structural members on the different structures. These were all made possible with the help of consultations from the researcher's advisers and the aid of different books and software programs like AutoCAD, SketchUp, STAAD, and Microsoft Excel. Upon interpreting the data, it showed that the Arena could cater to several sporting and cultural activities with its maximum capacity of 10,522 users. It also turned out that aside from the arena, it would also be able to house and accommodate more than 200 vehicles in its parking building. And lastly, through this study, the existing structures like the pasalubong center, offices, and terminal were restored and improved, which would later help boost the functionality of La Couronne De Isabela Arena. The financial cost estimate of the project for all the phases was ₱ 1,683,544,960.41 and a total duration of 1,183 calendar days.

*Keywords:* architectural plan, arena, parking building, pasalubong center, terminal

**SEAIT-SR-016**

**A Proposed Centralized Eco-Transport Hub at  
Barangay Roxas, Solano, Nueva Vizcaya**

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Villanueva, John Claude A. Vilorio, Stephen Jhune T. Vitanzos,  
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A centralized transportation hub in an urban or populated place, such as cities or the commercial centers of a certain municipality, plays a vital role in transmitting goods and services from one place to another. Furthermore, having an organized transportation hub prevents traffic and flocking of vehicles around the commercial center of a certain place which is currently a problem being faced by the municipality of Solano, Nueva Vizcaya. With the lack of an organized transportation hub, Solano is experiencing delays in the transportation of goods and services, which can be a big problem considering it is the commercial center of the province. To come up with a solution to the problems mentioned earlier, the researchers conducted a study that led to designing a centralized transportation hub for the municipality. The transportation hub was drafted to have seven structures broken down into seven project construction phases. An administration building, bus terminal, jeep and e-jeep terminal, main commercial building, van terminal, maintenance facility, and bay shades were integrated into the proposed project. The project was designed with the help of the National Structural Code of the Philippines (NSCP), Philippine Codes and Standards, and other guidelines for constructing a transportation terminal. And based on the calculations, the project cost of the proposal was estimated to be around Php. 82,821,243.17 with a total duration of 757 calendar days, excluding the weekend holidays and construction intervals.

*Keywords:* administration building, bay shades, bus terminal, jeep and e-jeep terminal, main commercial building, van terminal, maintenance facility



**SEAIT-SR-017**

**A Proposed Rehabilitation of the Aglipay, Quirino  
Public Market Located at Barangay  
San Leonardo, Aglipay, Quirino**

*Marc Ledon M. Doria, Christian Paul P. Kimmayong, Joshua V.  
Peralta, Aurus Jodeo C. Tiam, Reg. CE, MSCE*

The purpose of this study was to propose a new face of the public market for the town of Aglipay that would improve its economy and its importance to the public by having a more convenient and healthier environment to localize its uniqueness to other public markets. The researchers focused only on the proposed project's technical aspects, including the structural plans, architectural plans, materials specifications, bill of quantities, schedule of works, and construction methodology. The design was based on the National Structural Code of the Philippines. After finishing all the calculations and design, the researchers devised the plan for the proposed project. The estimated total project cost was 33,320,998.69, with a project duration of 565 working days.

*Keywords:* Architectural plans, bill of quantities, construction methodology, materials specifications, schedule of works, structural plans



**SEAIT-SR-018**

**Proposed New Dugong – Calabngan Irrigation System  
Located at Barangay Tungod, Lagawe, Ifugao**

*Diony Mark O. Ballogan, Marc Gil G. Bogbog,  
Lynnette Fe B. Gag-gu, Richelle A. Gonzales,  
Jefrie T. Alindayu, Reg. CE, MSCE*

The main goal of irrigation and irrigation management is to promote proper crop growth and maintain sufficient soil moisture. A further goal is to prevent short-term droughts, as

they can provide adequate support for low-water fields. The utmost purpose of the study was to contribute to the stability of agricultural productivity and the development of the local economy by designing a new irrigation system for the farmers that would supply sufficient water for crop development. The researchers designed two possible alternatives/routes for the irrigation system. The total irrigable area was 131,093.11 sq.m of rice fields in Barangay Tungod, Lagawe, Ifugao. For Proposal 1, the researchers designed a 930 meters main canal and four lateral canals with a total length of 310 meters that would pass through the center of the rice fields. On the other hand, Proposal 2 was an 850 meters main canal and two lateral canals with a total length of 320 meters that would pass on the side perimeter of the target area. After designing two alternatives/routes for the new irrigation system, the researchers opted to take proposal two since it was more economical and the work duration was shorter than proposal 1. The estimated project cost was Php 4,103,433.26, with a total project duration of 124 days.

*Keywords:* agricultural productivity, crop development, drought, irrigation system, irrigable area



### **SEAIT-SR-018**

#### **Proposed Nueva Vizcaya Police Provincial Office Firearms Training Facility**

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Jefrie T. Alindayu, Reg. CE, MSCE*

This study proposed a firearms training facility for the Nueva Vizcaya Provincial Police Office. It aimed to provide the provincial police force with an indoor firing range to hold training and practices regularly to hone further and maintain their gun handling abilities. Due to the lack of Philippine design codes and regulations concerning indoor shooting ranges, it was designed to conform to the United States Department of Energy's Range Design Criteria standards. This study produced a

structural plan, a program of work, cost estimates, and a construction schedule for the proposed firearms facility. The Provincial Police force was holding events and exercises in outdoor ranges and privately owned ranges. Indoor firing ranges were favored because they protected harsh weather conditions and could be operated around the clock under controlled environmental conditions. However, environmental and occupational controls were essential to indoor firing ranges to protect the range users from the adverse effects of airborne lead and noise. The study was then focused on engineering solutions to address these workplace hazards. Through gathered data, designs, and technical computations, the researchers designed a training facility with a lecture room and armory that costs ₱6,593,082.97 and a construction duration of 115 calendar days.

*Keywords:* engineering solutions, gun handling, indoor firing range, workplace hazard



**SEAIT-SR-019**

**Magat Eco-Tourism Park: A Proposed Research Facility  
Handling Multidisciplinary Nature of Fisheries**

*Aileen P. Mendoza,  
Tomas A. Binbinon, Reg. Architect, UAP*

The Philippines is a major fishing nation and the world's second-largest archipelagic state in the Indo-West Pacific Region, an area recognized for its marine biodiversity. This study dealt with management and development to provide the population's food needs by proposing a research facility that would work on the diversity of fisheries located in Magat Dam and integrate a breeding area for *Tilapia*. Magat Dam is known as the largest dam in the country because of its reservoir. It became a national landmark in the province of Isabela, also known as the Queen of the North. The site has become one of Isabela's significant attractions, and people can enjoy tourist water activities. Also, an article published results about fish mortality in cages, a study

to determine the profile and practices of tilapia cage farmers. Thus, the proposed project included laboratories to help Magat dam preserve and produce resources. It would benefit the government, the people living near this area, and future researchers. The primary purpose of this facility was to undertake research programs and projects in fisheries and aquatic resources that would generate new scientific knowledge, better products, and new approaches. The project would also have a considerable connection to its surroundings. It would integrate innovative designs, the concept of tropical design, and design solutions and strategies.

*Keywords:* research facility for fisheries, tropical design



#### **SEAIT-SR-020**

#### **Rocasa, Nurturing Historical Identity Through Modern Approach: A Proposed Hotel and Restaurant**

*Aldrin R. Hernandez,  
Tomas A. Binbinon, Reg. Architect, UAP*

Most tourists and travelers prefer to experience a good ambiance, pleasure, and relaxation on their vacation. This can also be experienced mostly in hotels and restaurants. However, Aritao's limited facilities to provide tourist accommodation is a downside. The client decided to build a hotel and restaurant copying Calle Crisologo in the town of Vigan, Ilocos Sur. The concept and primary objective of the project were to preserve natural resources, history, traditions, and culture. In addition, it would be beneficial to the local community and the neighboring town and provinces as it would give them the opportunity in terms of employment. As such, it would also boost the municipality's tourism sector.

*Keywords:* local community, tourist accommodation, the tourism sector

**SEAIT-SR-021**

**A Proposed Restaurant with Coffee Shop: Enhancing  
Gastronomic Experience through  
Nature-Oriented Design**

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Tomas A. Binbinon, Reg. Architect, UAP*

Situated in the landmass of Ramon, Isabela, is the Magat Dam. Given the geological setting's breathtaking views and sceneries, Magat Dam has a vast potential to become one of the most fantastic tourist spots in Region 2. Considering the increasing number of travelers in the past years, the NIA (National Irrigation Association) and the Local Government of Ramon wanted the site to be developed to enhance visitors' experience. In such conditions, the researcher proposed a restaurant with a coffee shop, one of the main essentials in the proposed eco-tourism park. It addressed the lack of food facilities around the area. It aimed to provide a means of the need for the gastronomic necessities of the visitors. Furthermore, the establishment also functions as an income-generating project for the Local Government Unit (LGU) of Ramon, the National Irrigation Association (NIA), and its locals. The principle of tropical architecture was used in designing the building's interior and exterior façade. The study focused on providing architectural design solutions that included proper circulation and space planning of the proposed restaurant with a coffee shop.

*Keywords:* coffee shop, eco-tourism, restaurant, tropical design



**SEAIT-SR-022**

**Iskarlata Bay Beach Resort**

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Batangas is one of the well-known beach destinations in the Philippines and attracts tourists from all around the world. Many beach resorts can be located within Batangas' shoreline, which may negatively impact the environment. The idea of this project was to create an innovative design that has a low negative impact on the environment but not compromising the comfort and pleasure of a beach resort. The design's main objective was to create a site development that would take advantage of the vicinity. The second was to introduce tropical and sustainable architecture to the designs. The third was to create a comfortable and relaxing atmosphere within the beach resort and the lodging. Passive cooling and green materials were used to create a comfortable and relaxed atmosphere for the vacationer/s. The green architecture was also achieved through passive solar gain, reducing heat gain, and scientific analysis. This project would be an example of a luxurious and environmentally friendly beach resort within the area.

*Keywords:* beach resort, green architecture, passive cooling, green materials, environmentally friendly



**SEAIT-SR-023**

**Magat Eco-Tourism Park: Lodging and  
Accommodation: Experiencing  
Tranquility through Tropical  
Architecture**

*Kerwin Ed V. Hidalgo,  
Tomas A. Binbinon, Reg. Architect, UAP*

Tourism has become an income-generating industry for the province of Isabela. One of its top tourist spots is the Magat eco-tourism park in Ramon, Isabela. This was a feasibility study for constructing and developing one of its components, lodging and accommodation. The proposed lodging and accommodation building aimed to cater to tourists and serve as quarters for the

officials and visitors of the province. The study aimed to design an advanced, well-circulated plan incorporating tropical architecture. The proposal would show various techniques in designing, environmental and behavioral psychology, and how architecture could have an evocative impact on the users.

*Keywords:* eco-tourism, lodging, and accommodation, tropical architecture



**SEAIT-SR-024**

**Magat Eco-Tourism Park: Utilizing Acoustics and Its Functional Versatility**

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Tomas A. Binbinon, Reg. Architect, UAP*

The Magat eco-tourism park's location was declared by the Department of Trade and Industry (DTI) as one of the identified potential sites for eco-tourism due to its captivating, breathtaking, and panoramic characteristics. This proposed auditorium would become one of the essential parts of Magat eco-tourism park since it would provide inhabitants with views over mountain ranges. Its primary function is not only to accommodate different types of events, such as assembly but also to serve as a multi-purpose hall that caters for gatherings with a retractable seating system. The auditorium, as proposed, had 296 maximum seating capacity, 240 maximum seating capacity indoor, and an outdoor venue accommodating 250 people maximum seating. Since the location is within the eco-tourism park, the architectural design focused on acoustic and tropical architecture, making the building design nature-oriented. The proposal aimed to satisfy guests' comfort and the building's versatility.

*Keywords:* acoustic, auditorium, eco-tourism park, multi-purpose hall, tropical building design

**SEAIT-SR-025**

**A Proposed Office Admin Building: Boosting Work Efficiency Through Tropical Design Approach**

*Carlene M. Evangelista,  
Tomas A. Binbinon, Reg. Architect, UAP*

Magat Dam, located in the town of Ramon in Isabela, is one of the largest dams in the Philippines, second only after San Roque Dam. It is known as a source of irrigation water and a hydroelectric power provider. And now, it has become one of the prominent tourist attractions in the province of Isabela. In the past years, the number of tourists has been increasing. Both NIA and the LGU of Ramon want to develop the place to cater to more tourists and exhibit the beauty of Magat Dam. The project entitled: A proposed office Admin Building "boosting work efficiency through Tropical Design Approach" would be situated in Magat Dam. This building would serve as an office for employees of Magat Eco-Tourism Park. The proposal would also showcase amenities and indoor recreational activities. The study focused on the functionality and aesthetic of the building, for it would become part of the main building entrance in Magat Eco-Tourism Park through a tropical design approach and strategies.

*Keywords:* admin, eco-tourism, Magat dam, office, tropical design



**SEAIT-SR-026**

**A Proposed Our Lady of Fatima Parish Church and Convent**

*Marie Bell M. Manabat,  
Tomas A. Binbinon, Reg. Architect, UAP*

Roman Catholicism is the oldest religion in the world and has an approximately 1.8 billion baptized members nationwide. The

church of Our lady of Fatima in Villaverde, also known as Father Villaverde Church, can only accommodate approximately less than 400 sitters. Because of this, the administration of the church has considered relocating the church to a bigger lot and catering to the activities of the church through the use of the facilities in the convent. In this regard, the convent can accommodate visitors coming from different congregations. The new church and convent are situated at the back of the school of Our Lady of Fatima, and the old church will become the chapel of the school. The new lot has an approximate size of 3000 square meters wide. The study's main objective was to design a catholic church and convent that can cater to at least 800-900 sitters. The main concept was based on Romanesque architecture and modern architecture. Different treatments would be used, like acoustics. The arches of the windows would be seen for the structure's interior, making it more conducive for worship. The study was significant to all the members of the Catholic Church and visitors because it would cater to their needs.

*Keywords:* acoustics, arches, church, lighting, convent, modern architecture Roman Catholic, Romanesque architecture



**SEAIT-SR-027**

**SALIKSIK: The Lakbay Kalikhasan Fermentation  
Production Building with Agri-research Facilities**

*Angel Grace T. Emilio,  
Tomas A. Binbinon, Reg. Architect, UAP*

This study aimed to make a project proposal for a fermentation production building with agri-research facilities as part of FarmOn corporation's idea of putting up an agritourism project at Echague, Isabela Province. This project was primarily for processing products like wine, beer, and foods from their fruits and vegetables harvests. The corporation aims to provide a

unique experience to tourists from other places through an eco-friendly facility that combines education and leisure. The project considered the preservation of natural resources, ensured the effective implementation of guidelines and complied with the proponent's architectural vision geared towards resilience and modern tropical and regenerative architecture. The design was primarily focused on providing these objectives through architectural solutions and planning.

*Keywords:* agritourism, green is more, modern tropical, resilience, regenerative architecture



**SEAIT-SR-028**

**HINAHON: The Lakbay Kalikhasan  
Agri-creational Farm Resort**

*Christine Joy C. Delfinado,  
Tomas A. Binbinon, Jr., Reg. Architect, UAP*

Agriculture and tourism have become one of the great movements for tourism today as it incorporates the essence of sustainable agriculture. The Municipality of Echague is well known for its rich agricultural biodiversity, and by 2022 could become the Science and Eco-tourism center of the North. FarmOn Agri-community Corporation saw this as an opportunity to establish an agri-tourism development that enables local people to learn and appreciate the beauty of agriculture and experience it. *Lakbay Kalikhasan* would be the town's first agri-tourism destination, particularly in the province of Isabela, as it would help increase tourism both in the municipality and Northern Luzon. "*Hinahon: The Lakbay Kalikhasan Agri-Creational Farm Resort*" was one part of Agri-Tourism Development in San Manuel, Echague, Isabela. The project would serve as a recreational facility enabling tourists, residents, and staff to have peaceful and comfortable accommodations. Also, the development of this project would

create a chain of opportunities for locals and growing tourism in the Municipality of Echague.

*Keywords:* agri-tourism, agricultural biodiversity, sustainable agriculture



**SEAIT-SR-029**

**SIGLA: The Lakbay Kalikhasan  
Agri-Coffee Library and Restaurant**

*Abigail D. Camonayan,  
Tomas A. Binbinon, Reg. Architect, UAP*

Restaurants and coffee shops are some of the getaway places for some people. People love eating, especially Filipinos who are certified food lovers. The researcher had been provided a part of a project by FarmOn Agri-Community Corporation, located in a high-range part of the site in San Manuel, Echague Isabela. The site is presently covered with many fruit-bearing trees and vegetation. The project intended to promote, preserve, and protect the existing agricultural land, which would make out for food production, availability of freshly harvested goods, and stocks. With such a high abundance of trees and plants in the area, the project sought enough space for building construction, preventing future disturbances that might damage the vegetation on site. On the other hand, this would help people become aware of the importance of agriculture and the environment. The design solutions integrate the concept of passive cooling, natural lighting, curtain walls, and louver designs following *firmitas, venustas, and utilitas*. The project's purpose was to provide an eco-friendly structure and let people see what nature could give, such as fresh foods, clean air, and environmental benefits. Furthermore, the architectural concept of the study would help build a better place for food comfort and learning. The development might help Isabela become a top spot for agricultural tourism and contribute economically.

*Keywords:* agriculture, coffee shops, design solutions, environment, food comfort, restaurant

**SEAIT-SR-030**

**Tuklas: The Lakbay Kalikhasan  
Interactive Agricultural Museum**

*Krizza Mae P. Almendra,  
Tomas A. Binbinon, Reg. Architect, UAP*

Agriculture plays a big part in the culture of Echague, Isabela. However, their produce can hardly compete with agricultural products of other places. As a solution, FarmOn Agri-Community Corporation visualized an agritourism development program that aims to help farmers learn new techniques and technologies in agriculture and enhance tourism in Echague. The program has the main development objectives of nurturing and exhibiting agriculture and improving tourism in the province of Isabela. It would be the first agritourism destination in Northern Luzon. As a part of the proposed project, a museum called “Tuklas: The Lakbay Kalikhasan Interactive Agricultural Museum,” which combines leisure and educational activities was conceptualized. The agri-museum is envisioned to contribute greatly to the municipality's vision to make Echague the center of science and eco-tourism in the north by 2022. Moreover, it will exhibit the importance of agriculture to people. The museum’s design was conceptualized through the idea of harmonizing with nature. The structure was designed to connect and become part of its environment. With this design, people can experience the tangible and intangible connection between agriculture and architecture.

*Keywords:* agriculture, agri-tourism, agri-community, tourism



**SEAIT-SR-031**

**Agaricum: Agri-Mushroom Cultivation Hub**

*John Patrick Ceasar C. Cabading,  
Tomas A. Binbinon, Reg. Architect, UAP*

Agaricum, commonly known as the mushroom, is one of the most abundant foods in the region. The region has a wide range of crops; however, some are not fully maximized because farmers focus on what is abundant, like rice. But as observed, many changes are happening in the world, one of which is in the unpredictable and dynamic variety of food being introduced. The focus of this project, an agri-mushroom cultivation hub for the province of Nueva Vizcaya, would be potentially beneficial as it is envisioned to generate opportunities to develop innovative ways in agriculture and open avenues for farmers to venture into other ways of food production. The project was planned to equip with needed facilities for the training and development of the skills of farmers in properly cultivating mushrooms for livelihood. Likewise, the project intended to develop an area that is sustainable in meeting the demands of the local economy, society, and future conditions. Furthermore, the design is human-centered and adopts safety considerations due to the pandemic.

*Keywords:* agaricum, agriculture, innovative mushroom cultivation



### **SEAIT-SR-032**

#### **White Rock Farm Resort: Defining the New Generation of Agri-tecture in Villaverde**

*Chris Lourenze S. Bibas,  
Tomas A. Binbinon, Reg. Architect, UAP*

This project aimed to construct and develop a farm resort with regenerative architecture through a sustainable and vernacular approach. The site, located in one of the barangays of Villaverde, is mostly allotted for agricultural purposes, greatly affecting the project's overall design. The project would greatly benefit agriculturists, farmers, tourists, locals, and the tourism industry of Nueva Vizcaya. It considered the project's potential to promote environmental awareness and the introduction of Regenerative Architecture. Furthermore, the idea of a farm

resort would contribute to the development of architectural designs and innovation and the success of agriculture and tourism in the locale.

*Keywords:* Agriculture, architecture, farm, resort



### SEAIT-SR-033

#### **Cultural Mimetic – Eco Entrepreneurial Centrum: Revitalizing a New Approach for a Public Market Across Cultural Mimicry**

*Chagnevy B. Magtuto,  
Tomas A. Binbinon, Reg. Architect, UAP*

A public market in an urban area is vital to the community, providing livelihood, demand, supplies, and production. However, environmental awareness is sometimes poorly practiced, resulting in environmental maltreatment. Integrating an eco-market is an ecologically-friendly market that promotes the preservation and protection of the environment. For example, zero-waste disposal prevents the use of so much plastic that it harms the environment and humanity. This project's proposal at Barangay Bulanao Centro needed a revitalization due to its current condition. Thus, this proposal would mandate such practice for environmental awareness and green architecture, allowing the integration of passive cooling solutions and for cultural awareness such that this proposal would showcase the cultural features of the ethnic groups of the Province via mimicking. The project dealt with the commercial condition of the public market located at Barangay Bulanao Centro, which happened to have an increased business volume in distinction to meet the public needs that are desired and satisfied. The project aimed to recreate a better sustainable marketplace that would resolve the current issues and concerns by providing small and medium enterprises with cultural awareness and green architecture through the proposed eco-market project.

*Keywords:* cultural awareness, eco-market, green architecture, passive cooling

**SEAIT-SR-034**

**BUNGHOY: An Integrated Social Agroforestry  
Tourism Development**

*Kristine Jade L. Oaza,  
Tomas A. Binbinon, Reg. Architect, UAP*

The current environment in the Philippines today, especially the mountains, is being deforested and damaged. Agricultural lands are being converted into commercial lands. As the population grows, supply and demand will continue to increase together with the price in the market, especially for basic foods and other necessities. The “Integrated Social Agroforestry Tourism Development” project was located in Cordon, Isabela. The project would serve as a facility to study plants, animals, organisms, and trees and train students, farmers, and entrepreneurs. It would also cater to study tours. The project benefits the economy, the community, and the new generation of smallholder farmers and rural people. Provision for awareness-building about agriculture and forestry also secures the environment. The study focused on the site's aesthetic and function, incorporating all current conditions in agriculture and forestry through architecture.

*Keywords:* agroforestry, biophilic design, bamboo architecture, science and technology



**SEAIT-SR-035**

**The Development of Magat Tourism Park Complex and  
Convention Center: Bridging Man and Nature  
Through Biophilic Architecture**

*Maridel G. Dela Peña,  
Tomas A. Binbinon, Reg. Architect, UAP*

Our country is a land of diverse natural resources at Southeast Asia and the Western Pacific crossroads. It is endowed with natural resources and blessed with verdant forests, wildlife

sanctuaries, marine life, and extensive mineral deposits. In the Philippines, Isabela is a self-sustaining agro-industrial province situated on the northeastern seacoast of Luzon. Likewise, tourism has become a substantial income-generating industry in the province. The data gathered using the different methods became the basis of the planning and development stages of the project. Careful interpretation of the data was important in attaining an aesthetically functional facility that co-exists with its natural environment. There were only minimal developments like cottages and a landmark in the view deck. As seen in the documentation, the site had an unobstructed view of the Magat Dam and Watershed, giving many advantages to the proposed resort. Combining biophilic and bioclimatic architecture is the key to achieving a “GREEN” tourist destination. These two concepts and proper attention from the people would provide them with sustainable tourism. Yet, during the construction of this project, environmental impacts would be inevitable. Wastes and noise disturbances would be apparent once the construction starts.

*Keywords:* biophilic architecture and watershed



### **SEAIT-SR-036**

#### **TORE: A Proposed Educational Broadcast Center Redefining Building Solutions for Online-Based Learning**

*Nicole Robles,  
Tomas A. Binbinon, Reg. Architect, UAP*

The continuous rise of COVID-19 cases and repercussions have pushed businesses and educational sectors to switch operations online. Consequently, education has been affected drastically, where face-to-face learning ultimately shifted online. Nevertheless, the Department of Education (DepEd) and the Commission on Higher Education have continued to deliver continuous service to the learners. In connection with this,

DepEd introduced three alternative distance learning modalities: module, internet-based learning, and television or radio-based. Although all three alternatives are utilized in Nueva Vizcaya, the third alternative has the most issues and problems. A few reasons are the insufficiency of proper broadcasting equipment and the facility that would cater to this kind of service. Due to this, the researcher conceptualized the proposal of building an educational broadcast center in Santa Rosa, Bayombong, Nueva Vizcaya, with a total lot area of 10,972.23 square meters. This proposed educational broadcast center, projecting biophilic design and contextual architecture and the corresponding strategies and design solutions presented, would cater to the needs of the learners enrolled in the new normal educational system.

*Keywords:* biophilic design, contextual architecture, television, radio-based learning



### **SEAIT-SR-037**

#### **AGORA, a Proposed Cabarroguis Town Center: A Pleasant Harmony of Architecture and Nature**

*Fidel T. Marzal Jr.,  
Tomas A. Binbinon, Reg. Architect, UAP*

Nowadays, the hectic routine of Filipino customers has steered them to continuously find ways to make grocery shopping easier and more suitable. The customers have a long sense of community. Shoppers want a place where people can meet for social and local events and enjoy entertainment that is not a city away from home. Shoppers want more than to shop; they want an experience. This proposed project entitled “Cabarroguis Town Center: “A pleasant Harmony of Architecture and Nature”” could be enormous progress in the town of Cabarroguis. This could become a primary income provider, for it could increase commercial activities designed for gatherings, amenities, and leisure while the traditional town center could continue to

espouse the people's culture. Using new and innovative trends and services in commercial productions, the project could inspire investors to begin their stalls and invite customers to purchase. Through these, work would increase, and thus, the economic status of the municipal town and province would be uplifted. The primary focus of this research was to attract shoppers by providing a Town Center that offers a more inclusive and unique customer experience and to develop a development plan conducive to shoppers' needs for efficiency, relaxation, entertainment, and casual browsing. The design solution of the proposed town center was a combination of Biophilic, Green Architecture, and modern Filipino architecture, which were appropriate to attain the project's success. This paper was crafted to develop a physical plan for the town center that combines modern Filipino architectural and biophilic plans.

*Keywords:* biophilic architecture, green architecture, modern Filipino architecture



**SEAIT-SR-037**

**A Proposed Bayombong Public Market**

*Leomar V. Mamuric,*

*Tomas A. Binbinon, Reg. Architect, UAP*

Consumers want a place where they can choose a variety of food. The Bayombong public market is a major trading center in the province of Nueva Vizcaya. Yet, the current facility does not support the needs and concerns of the consumers. Due to consistent demand coming from the locals, a comprehensive plan for the new Bayombong public market was proposed by integrating green architecture and modern architecture. The project proposal for developing the new Bayombong public market was based on different concerns, mainly about adequate facilities needed by different businessmen and traders. Thus, the study aimed to create a functional and inviting physical environment for the new Bayombong public market that could

provide a rich sensory experience within architecturally distinct surroundings. This infrastructure would surely augment the decaying infrastructure of the old public market. This “New Bayombong Public Market” would become the municipality’s center for commerce and trade.

*Keywords:* green architecture, modern architecture, public market



**SEAIT-SR-037**

**ASSISTVENT: A Volume and Assist Controlled  
Mechanical Emergency Ventilator  
for Respiratory Support**

*Asher Angelo B. Buan, Erika Faye V. Cataina, Glynn Kenneth  
R. Marañon, Silverio V. Magday Jr., Reg. ECE, ECT*

Even before the COVID-19 pandemic, most hospitals in the Philippines, especially the rural and small hospitals, lacked respirators such as medical ventilators. With only a few thousand of these devices, the lack of emergency ventilators is a crucial problem in battling the COVID-19 pandemic in the Philippines. Hence, the study aimed to design an economical and portable mechanical emergency ventilator for respiratory support. It was achieved by effectively calibrating, automating, and controlling the working principle of BVM. Particularly, a CAM arm was designed to allow constant, smooth, and repeatable compression on the bag. Subsequently, driving the arm is a motor that was selected carefully according to the necessary motor torque and power calculations. Consequently, an effective close-loop control system using a PID controller was implemented to control the motor position and speed. Although, the controller had minor inaccuracies that generated discrepancies in the volume measurement, and the pressure sensor records unusual readings due to breathing connection issues. The overall prototype confirmed the minimum clinical specifications for a mechanical ventilator. As a result, the

prototype had two ventilator modes, volume and assist control. It weighed around 6.75 kg and had a dimension of 385 x 270 x 235 mm.

*Keywords:* BVM, CAM arm, curve fitting, orifice meter, PID controller



### **SEAIT-SR-037**

#### **Quarantined-Subject Monitoring and Indoor Positioning with Anti-Absconding Artificial Intelligence (Project Bantay)**

*Derwin P. Ara, Aljohn Ric C. Marcaida, Arnold Ceigfred E. Seangoy, Angelino Pimentel., Reg. ECE, MSECE*

Quarantine is the process of restricting and separating the movement of people who have been exposed to a contagious disease to avoid proliferation. Quarantined subjects were monitored manually, and patients tended to abscond or “run away.” In the Philippines, there was a lack of research and the absence of similar technology commercially available related to this matter. Project BANTAY integrated Artificial Intelligence of Things (AIoT), indoor positioning systems, and wearable technology to alleviate the shortage of personnel, long-term savings on workforce utilization in the government, and predict absconding or “run-away” potentially infectious individuals in our current and future quarantine facilities. Also, it included information system development for monitoring quarantined subjects’ heart rates and temperature that would eventually help the government combat and prepare for a similar unexpected pandemic. The prototype would start by turning on the device after being placed on the quarantined subject. The device must be linked to the router, and the sensors must then be calibrated. The web interface should receive and be able to see data readings, including temperature, heart rate, the location of the subject being quarantined, and the removal of the device via an IR reading. The temperature, heart rate sensor, and indoor

positioning were all measured above a p-value of 0.05, which accepted the null hypothesis, confirming that the actual and commercial product versus Project BANTAY's temperature, heart rate, and indoor positioning accuracy was statistically the same. The anti-absconding tendencies of the hypothetical dataset using machine learning data analytics showed that among four inherently multioutput machine learning regression algorithms, the Decision Tree Regression Algorithm could output a much better result in determining the tendencies of a subject to abscond from the quarantine facility.

*Keywords:* COVID-19, ESP32, IoT, machine learning, wearable technology



### **SEAIT-SR-038**

#### **Cost-Effective Powered Air Purifying Respirator with Noise Cancellation Feature**

*Primo Zeteo G. Aceret, Rodelyn S. Billao, John Isaac J. Morante, Silverio V. Magday Jr., Reg. ECE, ECT*

Millions of people have been impacted by the coronavirus pandemic worldwide. As such, medical front liners are at stake due to PPE's global shortage and costliness, which is integral to the COVID-19 response. This study designed and developed a Powered Air Purifying Respirator to integrate a noise canceling feature, developed its control system, tested the airflow velocity, noise level output, and battery capacity, and evaluated its efficiency compared to the commercial PAPR in terms of noise level and air velocity. The study addressed the costliness of PPE, particularly PAPR, and the inconveniences experienced by users of commercial PAPRs. The study methodology involved 3 phases: hardware design, hardware implementation, and prototype testing. Under the hardware design, the specifications and materials to be used for the prototype were discussed. After the prototype had been fully developed, it was subjected to different tests. The results showed that the prototype produced

20.076% less noise than the commercial PAPR. Moreover, the study's findings revealed that the prototype produced 55.856% less air velocity than the commercial PAPR. However, it was still efficient as it was delivering enough air velocity. It was also found that the battery capacity of the prototype is superior to that of the battery used by commercial PAPRs. The overall cost of the prototype was about ₱ 3,700.00, which was 75% cheaper than the commercial PAPRs.

*Keywords:* COVID-19 response, infection control, medical device, personal protective equipment (PPE), respiratory protection



**SEAIT-SR-039**

**Supermarket Electronic Article Skimming System  
Using RFID Technology**

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Rosete, Silverio V. Magday Jr., Reg. ECE, ECT*

It takes a little or considerable hours to check out in the supermarket. Not only in checking out but also in the time taken during the buying time. Bar codes are the means of identifying the products in the supermarkets during checkout and inventory. However, the cashier or store maintenance personnel can only scan one at a time, so if a person buys a large number of groceries, it will take time. In today's technology, Radio Frequency Identification (RFID) is rapidly being adopted by some stores, not in checking out but in identifying if a product was stolen or shoplifted. It uses a certain range of frequency varying on the usage. The reader of the RFID also varies on the type of RFID it is detecting. The proposed supermarket electronic article skimming system using RFID technology aimed to replace the barcode system with RFID so that the time spent in a supermarket would be lessened. The system was integrated with customized software interlinked with Arduino, Microsoft Visual Studio, and MySQL. The system's operation

was that the products had an ultra-high frequency (UHF) tag, and a UHF reader could scan it. This process was done in the inventory and the shopping sector, acting as a barcode reader. Still, it scanned multiple tags at a time instead of one. The proposed study has gone under multiple tests. It had been tested for accuracy and reliability and found to be within the range of acceptable values.

*Keywords:* electronic article skimming, RFID



#### **SEAIT-SR-040**

### **Microcontroller-based and Cost-Efficient Computer Numerically Controlled Automated Soldering Station**

*Bryan Christopher T. Wong, Mario G. Laureta, Olwyn S. Barcoma, Angelino Pimentel., Reg. ECE, MSECE*

This project study aimed to build and develop a cost-efficient automated computer numerical controlled soldering station equipped with temperature control, an emergency stop button, and a ventilation system capable of vacuuming the soldering fumes out of the system. The circuit was made in ExpressPCB and converted to a g-code file using bCNC and a Python program made by the researchers. Finally, the g-code was processed by the Pronterface program and was uploaded to the Arduino MEGA + RAMPS v1.4 CNC Shield, where the g-code was executed by the stepper motors and the servo motor holding the soldering iron at an angle. To test the prototype, the researchers did different experiments that pushed the machine to its capabilities. The results of these experiments were then compared to the soldering capabilities of the test subjects, which were 5th Year Electronics Engineering students from Saint Mary's University. T-test was also used to statistically analyze the data produced by the prototype and the students.

*Keywords:* Arduino MEGA, automation, CNC machines, soldering

**SEAIT-SR-041**

**Arduino-Based Low-Cost 3D Profiling Laser Scanner**

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R. Castañeda, Silverio V. Magday Jr., Reg. ECE, ECT*

Three-dimensional scanning offers many applications and creates three-dimensional (3D) objects from two-dimensional (2D) images. The system 3D scanner was designed and constructed at a low cost yet had a reasonable quality output. Python was used to interface with Arduino Uno in rotating the camera (Logitech C920) and line laser (200mW) using Nema 17 stepper motor. A GUI (Graphical User Interface) was created for the system making it more intuitive. It consists of a few parameters set by the user and a live feed from the camera. The system was subjected to accuracy and reliability testing, and both have proved its credibility. The best scanning configuration was also determined within a 0 lux environment. Results showed that dark environments and more Pannings offer better outputs. Triangulation Method was used to calculate the scanned objects' X, Y, and Z coordinates. MeshLab and CloudCompare were used for measurements and 3D reconstructions of the point cloud.

*Keywords:* 3D scanner, GUI, laser, profiling, Python, triangulation.



**SEAIT-SR-042**

**EraserBot v2.0: An Enhanced Microcontroller-based Automated Blackboard Eraser**

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Blossom D. Madarang, Teofilo M. Sagabaen, Reg. ECE*

As one essential thing in teaching, chalk and erasers play a large role in every student's learning process. Although it is essential, some disadvantages are observed by the proponents. For

instance, when erasing, chalk dust scatters the surroundings, which may lead to health issues like allergic reactions, asthma, eye soreness, hair loss, and other symptoms. Another example is the electronic devices used by the teachers in the teachings, like laptops, projectors, and the like. When the chalk dust is scattered in the surroundings, it can cause overheating and other technical difficulties. Another problem is the disturbance in the momentum of the instructors when erasing the writings on the board since it takes a lot of time and effort. Given the above, this project was an enhanced microcontroller-based erasing machine capable of erasing the writings on the board using the Arduino Uno R3, two DC Stepper Motor, that triggers the horizontal movement of the erasing mechanism and the rotational movement of the eraser itself. This lessened the time and effort of the instructor on erasing since the machine was programmed to complete one cycle for 24 seconds to be clean, depending on the intensity of the writings. It was also found to be eco-friendly, user-friendly, and low-cost. The EraserBot v2.0 was the enhanced version of the first EraserBot, which was different in design, efficiency, and precision.

*Keywords:* Arduino, eraser bot v2.0, intensity, microcontroller, stepper motor



### **SEAIT-SR-043**

#### **Smart Ambulance IoT System with Patient Monitoring using NODEMCU, MAX30100 and DS18B20**

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This study aimed to develop an ambulance supplement device prototype capable of transmitting patients' personal information and patient data between the ambulance and hospital through IoT technology. The system is composed of two fundamental parts the website and the hardware. The hardware has microcontrollers designed to gather the patient's vital signs. The Arduino MAX30100 and Ds18b20 read the patient's heart rate,

oxygen saturation, and temperature, respectively. The PC provides access to the website that contains the patient's personal information and the rescuer's assessment of the patient's condition. The website includes the Triage System that classifies the severity of the patient's condition. The data would be uploaded to the cloud through Node MCU, enabling the ambulance and hospital to establish communication through the internet. Upon upload, the hospital would be notified and be given access to the data. The prototype was developed with components that could be outsourced online. Technical difficulties were solved through experimentation and thorough thinking. For testing, the researchers applied different kinds of approaches. They made a comparison between the prototype and the devices that were used during rescue operations. The project's comprehensive analysis was done to introduce telemedicine in our community that would elevate emergency healthcare service, especially in major trauma incidents.

*Keywords:* internet of things, SMART- ambulance, node MCU, telemedicine



#### **SEAIT-SR-044**

### **Low-Cost Three-Dimensional Printing Using PET Bottles**

*Jaurine Fei L. Agrimor, Narence Joy G. Cataquiz, Jarrel Vee B. Peñaranda, Teofilo M. Sagabaen, Reg. ECE*

With the advancement of technology in this modern age, printer plays an important role in today's generation. Printers progressed from two-dimensional to three-dimensional printing with a z-axis that manipulates the printer head for the nozzle to form three-dimensional objects. 3D objects were produced by a melted material used as filament in 3D printers. Polyethylene terephthalate (PET) filament is a shockproof and hard material that can be used for lightweight items. The system for building the low-cost 3D printer was divided into the computer, control

block, and extruder. Nema 17 stepper motors run it to create the three-dimensional figure using the 3-axes (X, Y, Z) to form 3D models. The PET plastic bottles were stripped, cut, and shredded by the blender to accommodate the amount of filament to produce and print the object. With the Arduino Mega and the CNC shield, the axes of the proposed prototype were adjusted by configuring the Marlin codes. The modified extruder of the printer was separated from the system to produce a continuous melted filament in the nozzle by pushing it down the shredded PET plastic bottles. 3D printers are now expensive as they are in demand today, yet some cannot afford them. Thus, the researchers aimed to design an eco-friendly and low-cost 3D printer that uses PET (Polyethylene terephthalate) plastic bottles as filaments by modifying the extruder.

*Keywords:* Arduino, CNC, PET plastic bottle, modified extruder, 3D printer



## **SEAIT-SR-045**

### **A Microcontroller-based Fogponic System**

*Julia L Lasilas, Edcel Jay B. Dupale, Jude Michael N. Madamba, Silverio V. Magday Jr., Reg. ECE*

The annual resource provided by the earth is consumed while the time count did not even reach a year. The utilization of natural resources by mankind is faster than the regeneration of mother earth. To solve this problem, the researchers presented an artificial planting system that uses fog instead of soil in growing plants. Fogponics is the new way of vertical farming, which saves up to over 98% of water than conventional farming. This model is built with considerations about the budget and time consumed. It is equipped with a microcontroller that controls the various sensors and devices that help the growers save time, money, and effort. With the help of the Fogponic system, it can provide a more efficient and convenient way of farming in this growing crisis. This research focused on

designing, constructing, and testing a microcontroller-based Fogponic System as an alternate way of growing plants. Specifically, this study tested the accuracy of the sensors that were used to measure pH and Total Dissolved Solid (TDS); tested if the ultrasonic mist maker is an effective way to deliver nutrients for the plants to grow; and determined if ultrasonic mist can be used as a substitute for soil in growing plants. This research was an indoor garden requiring minimal space, resources, and interaction with humans and beneficial to people in urban areas, busy people, people with insufficient space and land, and hobbyists. This would also serve as a baseline for future researchers. Hardware components of the study included a fogger, relay, fan, sensors, and power supplies. Arduino IDE was used for programming. In conclusion, the researchers were able to construct a Microcontroller based fogponics system with sensors capable of monitoring and notifying the owners. The ultrasonic mist maker (Fogger) effectively delivered nutrients to the growing chamber, allowing the plants to grow. And finally, ultrasonic mist could be used as a substitute for soil in growing plants. Through the prototype built, the researchers could meet the desired objectives set.

*Keywords:* artificial planting system, fog, fogponics, ultrasonic mist maker



## **SEAIT-SR-046**

### **Enhanced Smart Curtain Controller System**

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With the improvement of people's living standards and the continuous improvement of science and technology, people's demand for convenient life is getting higher and higher. And its development speed is quite fast. In this paper, Enhanced Smart Curtain Controller System for home automation is presented. This work aimed to make a smart curtain to make the work and

life of people easier and more comfortable, specifically in controlling the things around them. The Enhanced Smart Curtain Controller could be controlled wirelessly (Bluetooth connection) using an Android-based APP through a manual operation using the buttons (open, close, stop) and bypassing. To achieve this, the researchers used a DC motor as an actuator. The motor was controlled using an Arduino Uno microcontroller. The operation of the motor could be stopped under the switch's action, and the curtain's opening and closing could be controlled through the buttons and an Android-based app. Based on the test conducted on a small curtain, the curtain could be controlled wirelessly through an Android application. The system had high reliability and security under practical testing. With the popularity and development of home automation, the design had broadened market prospects.

*Keywords:* Arduino Uno microcontroller, home automation, market prospects



#### **SEAIT-SR-047**

### **Automated E-Load Vending Machine with Solar Panel and Touch Screen Display**

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Joseph Harvey C. Yap,  
Angelino Pimentel., Reg. ECE, ECT, MSECE*

The project, an enhancement of a previous study, is a validation of the continuous progress, improvement, and development of technology. Its main goal is to provide better services for the increasing number of subscribers, especially those who encounter running out of load unexpectedly. The advanced features to be added result in a loading machine that can cope with the changing electronic technology and be described as globally competitive. The addition and enhancement of some features to a previous project is the main focus of the researchers, specifically, to design a touch screen monitor; to

provide a coin acceptor that can detect six different coins with only one coin slot, and to have a backup energy power source using solar panel energy in case of unexpected power interruption so that any transaction will not be interrupted. The study utilized test parameters and a prototype reliability test to determine if the added features could work as expected. After different test parameters, the prototype worked and gave an output as planned and expected. Considering the resulting prototype, this project has satisfied the study's objectives.

*Keywords:* automation, prototype, prototype reliability test, test parameters



#### **SEAIT-SR-048**

#### **Proposed Hybrid Communication System Using Mobile Phones to Extend the Range of Two-Way Radios**

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Nathaniel Alexandre O. Cruz, Silverio V. Magday Jr., Reg. ECE*

One of the problems in technical communication is the accessibility to transfer messages to the receivers. This is why the researchers sought a solution to alleviate the problem of transferring a message to the receivers. The study was conducted to promote and help reduce the communication time between a sender and multiple receivers dispensing with others to broadcast the information. Through wireless communication, emergencies get immediate help and support. It is one of the most important mediums for transmitting information from one device to another. This technology can transmit information through the air without requiring cable, wires, or other electronic conductors by using electromagnetic waves like RF, satellite, etc. The model consisted of a phone and a telecommunication radio for rebuilding each other. The system received a call from a phone. Then it triggered the voice-operated switch (VOX) of the combined radio to broadcast the

call to the radio users in half-duplex mode on the condition of point-to-multipoint communication. The researchers conducted a test to analyze the statistics required of the system, such as propagation test, antenna test, mobile phone compatibility, and how the spoken messages are detected. The set of evaluations supported the researchers in figuring out the strong and weak points of the study. Based on the salient findings of this study, the following conclusions were derived: increased mobility, installation speed, and simplicity, widened the network's reach, became more flexible, reduced the cost of ownership over time, and increased scalability. Using a Hybrid Communication System using Mobile Phones to extend the range of two-way radios helped the receivers to receive the messages despite the long distance and provided an easier medium to transmit communication.

*Keywords: broadcast, technology, telecommunication system*



**SEAIT-SR-049**

**Self-Monitoring and Reading Temperature with  
Disinfection and Recording**

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Guntalilib, Irvin De Vera, Teofilo M. Sagabaen., Reg. ECE*

Automation as a technology is a process that assists humans in minimal ways; thus, producing technology that maintains privacy and no contact is growing fast and steady at this time of the pandemic. The system collects, stores, and retrieves the data on the server. The prototype system was designed with a windows-based application, a K3 Temperature scanner, an RFID reader, and an alcohol dispenser. The server and the two stations would be connected through a router that centralized the data stored in the database. The visual studio application was used to classify the admins and the guards in accessing the system for the system's security. The admins had the authority to access

Student Management, User Management, and Log Management. The guards could only access one system part, namely the Logs. With this simple temperature scanner with disinfection and recording, it would be more convenient for the students than using the paper method given to them when entering the school campus to identify their name, temperature, time, and date for their records.

*Keywords:* log management, user management, system security, temperature scanner



### **SEAIT-SR-050**

#### **PROJECT: An Arduino Robot Chicken Manure Scraper**

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The Arduino robot is a highly effective and helpful method that significantly assists poultry producers in providing food for human consumption. This study aimed to help poultry farmers avoid spreading illnesses carried by chicken excrement. This would be utilized as a foundation for technological growth in the future. This research concept in creating a robotic prototype called "Pooject Robot" used Arduino to reduce the health concerns associated with contact with chicken manure for poultry farmers, in addition to the primary benefit of reducing their workload by eliminating the need to clean the chicken farm manually. The project would force manure into canals using its automatic designed program and manual controller using a Wi-Fi-based mobile application, thus alerting the owner through SMS if the battery ran low. The Arduino UNO and the ESP8266 Module were the two most essential components of the robot, for they both served as the brain to accomplish separate functions. After testing, the robotic system successfully executed its main function. It was recommended that robots should have

additional features to improve their functionalities further, implement a robotic system through the use of a camera, use bigger tanks, and lastly, integrate a water sprinkle that has a disinfectant to soften chicken manure and lessen the bacteria of the poultry farm.

*Keywords:* Arduino Uno, ESP 8266, automatically designed program, robotic system, wi-fi-based mobile application



### **SEAIT-SR-051**

#### **Enhanced Mobile Application and Web-Based Student Attendance Checking and Monitoring System**

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Carina S. Mallillin, MSME, PCpE*

The development of technology is growing in different aspects of societal life. Innovators, scientists, and researchers continue to develop technology to the highest level from the stone age to the computer age or artificial intelligence to make the task faster and easier for people's use. Due to the influence of these developing technologies, the researchers of this project decided to enhance a previous study about a mobile app and web-based system that would help the teachers and staff of Saint Mary's University to check and monitor the attendance of students easier and faster. This project would also help lessen teachers' workload in checking attendance compared to the previous system, which was done manually. The main functions of this project were checking, updating, monitoring, and organizing the students' attendance faster and easier. Exploratory procedures to examine the project includes the performance, reliability, effectivity, consistency, accessibility, and security of the project.

*Keywords:* enhanced mobile application and web-based system, student attendance checking, monitoring

**SEAIT-SR-051**

**Web-based Automated Attendance Monitoring and Gate Access Control System using Raspberry Pi**

*John Bryant G. Delda, Glenn Mark G. Lejao, Mark Kevin A. Valenzuela, Angelino A. Pimentel, Reg. ECE, MSECE, ECT*

A Web-based Automated Attendance Monitoring and Gate Access Control System is a Broadcom-based system-on-chip using Raspberry Pi and additional devices such as RFID and PIR sensors. This design reduces the human effort to open and close the gate. A new concept for this project was proposed to address the traffic problem and replace the idea of a car pass currently in use at Saint Mary's University. It aimed to improve security and lessen the personnel monitoring the campus entrance and exit points. The concept was based on the development of manual operation of the arm gate barrier and was implemented with a web-based design. The machine was programmable to operate the gate for vehicles that would pass through automatically. First, the driver must tap a registered identity card to signal the machine. After the system verifies the card, the arm gate barrier automatically opens, allowing entry. The data would be sent and saved in the system's database, the driver's information. Researchers found out that one of the prospective options for implementing innovative technologies, such as automation, has the potential to improve and lessen the problem encountered by the campus. Hence, the implementation contained a safer and more efficient execution of work with consistency and a higher level of control over monitoring and tracking students' and employees' vehicles on campus.

*Keywords:* monitoring and tracking, registered identity card, safer and efficient execution of work



**SEAIT-SR-052**

**Automated Plastic Bottle Scanner Using OpenCV**

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In today's generation, plastic bottle disposal has always been discussed. Plastic bottles can be seen everywhere, especially around school grounds, wherein the population is at its largest. These problems are also present in our University. The researchers came up with the idea of creating an "Automated Plastic Bottle Scanner Using OpenCV," which may aid the university in solving these problems. This project aimed to design a system that could detect a plastic bottle and convert it into an equivalent point and software where the user could create an account and store the accumulated points. The project was integrated with Raspberry pi as the main processing unit, Raspberry pi camera as the detection unit, LEDs as the indicator, and Arduino UNO as a microcontroller for the RFID module. It also used a PC where the software was installed and also served as a display unit. After testing the success rate of detecting plastic bottles and the system's other features showed that the project had a good performance in both the experiment and the real environment.

*Keywords:* Arduino UNO, main processing unit, microcontroller, raspberry pi camera



### **SEAIT-SR-053**

#### **Poodozer Robot: Manure Scraper for Poultry Farms with SMS Notification**

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Preslynne Anne M. Malijan, John Paul A. Nidoy,  
Silverio V. Magday Jr., Reg. ECE, ECT*

With the advancement of technology, robots have replaced humans, especially in life-threatening, dangerous jobs. The main goal of this project was to create a Poodozer robot that could scrape chicken manure for poultry farms and send an SMS to the owner if its battery is low. It also aimed to show the essence of studying computer engineering by applying and integrating software and hardware applications, especially in robotics. As chicken manure could cause many diseases because of its

contaminants, the robot was an ideal technology for cleaning poultry farms to minimize the risk of contact and thus spread disease-causing bacteria. This prototype Poodozer Robot was an autonomous robot that scraped the building floor of a poultry farm and pushed the manure into the canals of the building floor. The brain and the most important part of this project were the Arduino Uno. An ultrasonic sensor was used for the robot to detect the distance of an object. A voltage sensor to read its battery level to trigger the Sim900 A to send an SMS to the owner notifying him/her that the robot is low in the battery was utilized. An aluminum tank wheel model with DC motors driven by the L298N motor driver module was installed, and acting as its power supply were 18650-battery packs. This project's development would help lessen poultry farmers' work, allowing them to focus more on their production.

*Keywords:* Arduino UNO, chicken manure scraper, robotics, ultrasonic sensor



#### **SEAIT-SR-054**

##### **Enhanced Automatic Clothesline Organizer**

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Patricia Joyce P. Dela Cruz, Kristal Jane S. Dimaano,  
Teofilo M. Sagabaen, Reg. ECE*

Our technology, in general, advances in many ways leading to a radical change in peoples' lifestyles. Thus, through these technologies, daily living is made to be easier and faster when doing everything. The Enhanced Automatic Clothesline Organizer was an enhancement from the previous project by Antalan, A.S, et al., developed for households, especially those who lived in apartments or high places with no place to dry their clothes. It was also suitable for busy workers, such as workers who had less time to finish their laundry. The trouble usually occurs when we dry our clothes, if it is a rainy season or random natural calamities occur. This project is helpful to households; rain or shine, the automated clothesline system would either

retract or expose the clothes depending on the situation. Text messaging using the GSM SIM800L module would send a message to the receiver if it would either retrieve or expose the clothes if the owners were not in their houses. Arduino ATmega2560 was the microcontroller used for this project. Three main components that would help function the system was used: The Rain Sensor, Light Dependent Resistor (LDR), and GSM SIM800L.

*Keywords:* light-dependent resistor (LDR), GSM SIM800L, rain sensor



**SEAIT-SR-055**

**Automated Foam Cutting Machine Powered by  
Microcontroller based Computer  
Numerical Control (CNC)**

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Severino W. Salvador Jr., Teofilo M. Sagabaen, Reg. ECE*

In this modern age, the growing popularity of automation and computer numerical control (CNC) goes along with the growth, improvement, and development of every aspect of life. People can create simple and useful machines through this and using a computer and motors. For example, manually cutting a Styrofoam to the desired shape can be both time-consuming and difficult; thus, an automated foam cutting machine can be user-friendly and efficient. Motivated by this, this project on a computer numerical control-operated Styrofoam cutting machine was conceptualized. The machine could cut 2D and 3D shapes with a hot wire as its cutter. This made the task of cutting Styrofoam decorations less tedious and easier. The “brain” of the machine was an Arduino MEGA 2560 uploaded with a grbl firmware. The Arduino MEGA 2560 was connected to a CNC Shield V3. However, the route from the Arduino MEGA 2560 to the CNC shield V3 was configured because the CNC shield V3 was not compatible with the Arduino MEGA 2560 in a direct connection. The A4988 Stepper motor drivers controlled the

NEMA17 Stepper motors, which controlled the movements of the hot wire and the platform on which the Styrofoam was placed. The hot wire moved along the X and Y axis while the Z axis rotated the Styrofoam on the platform.

*Keywords:* Arduino, hot-wire, styrofoam, CNC, 2D, and 3D cutter



### **SEAIT-SR-056**

#### **A Proposed Region II Trauma and Medical Center Substation Design**

*Clyde John D. Cornejo, Marc Julius O. Dannuy,  
Jayson T. Ringor, Peter Meynard D. Ventura,  
Jojo C. Mariano, Reg. EE, RME, MBA*

This paper presented a case study of energy functionality in an electrical substation. The assembling device used to adjust the characteristics of an electric supply was referred to as an electrical substation. Electrical substations were one of the most difficult projects to complete. The full analysis was carried out to precisely present the substation's needed parts and components for a specific load. Transformers were used at an electrical substation to change the voltage from high to low or vice versa in an electricity-generating transmission and distribution system. Electric power would travel via many substations at varying voltage levels between the producing station and the customer. As a result, sub-stations were an important part of the power system. The purpose of a substation was to convert high-voltage power from the transmission system to lower-voltage electricity that may be supplied to local homes and businesses through lower-voltage distribution lines. Substations were critical components of the electrical infrastructure that ensured customers had access to reliable energy. Transformers, switchgear, circuit breakers, and other high-voltage electrical equipment were found at substations. The project's goal was to design a substation for Region II Trauma and Medical Center (R2TMC) and calculate the approximate electric cost saving

when it was directly connected to NGCP. This project was limited to civil works and largely focused on electrical designs, work, and cost.

*Keywords:* design, electricity, cost-saving feature, substation



**SEAIT-SR-057**

**A Proposed Substation Design  
of Saint Mary's University**

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Harris Jon Rick P. Peralta, Reyolance G. Villanueva,  
Jojo C. Mariano, Reg. EE, RME, MBA*

A case study of energy functionality in an electrical substation is presented in this research. An electrical substation refers to the assembly apparatus used to change the characteristics of an electric supply. Electrical substations are one of the most complex construction projects. The entire analysis is carried out to precisely display the substation's required parts and components for a specific load. Substations are thus a significant component of the power grid. An electrical substation is a station that employs transformers to step down high voltage to low voltage or vice versa in an electricity generating, transmission, and distribution system. Electric power may travel through many substations at varying voltage levels between the generating station and the customer. It comprises a complicated system of interconnected equipment connected by conductor buses or cables. This project aimed to provide power from the NGCP (National Grid Corporation of the Philippines) to the Saint Mary's University College campus in Bayombong, Nueva Vizcaya. However, the model was still linked to NUVELCO (Nueva Vizcaya Electric Cooperative). This project was limited to civil works, focusing mostly on electrical designs, works, and the impact of risk factors on time and cost.

*Keywords:* designed system, distribution substation, substation components, substation design, substation layout

**SEAIT-SR-058**

**A Design of Micro Hydro Whirlpool Power Plant  
at Sitio Pawak, Barangay Masoc,  
Bayombong, Nueva Vizcaya**

*Marvic John S. Estrella, Jazmine Jae M. Lelina, Redenel Ely D.  
Serquiña, Wenson R. Evangelista, Reg. EE, RME*

Electricity is vital in social and commercial investments such as lighting, transportation, communication, rural electrification, etc. Hydropower, which is one of the oldest producing forms of electricity, is believed to be the first and simplest method of electricity generation. Among hydropower options for rural electrification, micro hydropower is one of the best options because of its ability to generate electricity continuously. Among several types of facilities used in micro-hydropower, river stream is considered to have the least environmental impact, for it avoids the need to build large dams or reservoirs to store water as it greatly relies on the flow and head of the water source. This paper focused on the run-of-river type of micro-hydropower, especially on gravitational vortex power hydropower plants, which are ideal on ultra-low head hydropower systems and is also one of the emerging types of hydropower technology. This paper presented an overview from measuring the head and flow at the proposed site location and determining a suitable turbine and generator system to the design of the site development plan. It also discussed the proposed streetlight development plan, and the design of a backup power supply that would receive the micro hydropower generated electricity.

*Keywords:* generator system, hydropower technology, run of river type, ultra-low head hydropower systems, and turbine



**SEAIT-SR-059**

**A Design of Breastshot Water Wheel at Purok 5, Sitio  
San Juan, Boliwao, Quezon, Nueva Vizcaya**

*Francis Carl A. Acain, Andrei Alexis L. Lacbu, Christian Lloyd  
R. Pascual, Wenson R. Evangelista, Reg. EE, RME*

For a thriving existence, electricity is a vital resource. It keeps our everyday lives going. Existence would now be difficult to imagine without electricity. Coal or natural gas produces electricity. Natural resources are finite and non-renewable. People need to save energy because certain resources cannot be renewed. Micro-hydro is the best choice because of its simplicity and consistency as a renewable energy source in the proposed site. This paper focused on designing a micro hydro with a breastshot water wheel turbine ideal for moving streams that could generate at low head. It has the cheapest investment and operational cost compared to solar and wind turbines. This paper provided the analysis of flow rates and head calculation at a potential site location and evaluation of the appropriate turbine and generator system for the design site development plan. This paper also included the design of the streetlights development plan and the design to supply San Juan Elementary School with electricity from said micro hydropower plant.

*Keywords:* micro-hydro, non-renewable energy, renewable energy, turbine



**SEAIT-SR-060**

**Continuous Loop Prototype for Non-Conventional Energy Conversion System**

*Genesis P. Dela Cruz, John Kenneth B. Fulgencio,  
Marlon A. Omanito, Eunice Justine A. Urayani,  
Jojo C. Mariano, Reg. EE, RME, MBA*

The design of a prototype non-conventional energy conversion system that utilizes human urine as fuel is a very innovative research study. This study featured hydrogen gas as an alternative fuel for an internal combustion engine and an electricity-powered alternator. Three electrolytic cells that are attached to a car battery were used. The hydrogen generated flowed on a bubbler in the electrolysis into a test valve that went directly to the hydrogen gas storage container. Just necessary gases would be used as fuel to an engine coupled with an alternator capable of producing electricity and supplying the

battery. To further improve the prototype, some recommendations were taken from the previous study and were incorporated into the current prototype, which included: producing more hydrogen gas by using a larger hydrogen storage with a pressure gauge to change the pressure of hydrogen going to the engine to generate more power such as socket for electric fan or a charging port, engine machine coupled with an alternator to produce more power and smoother continuous engine run, connecting a wire to the battery which combines the alternator to minimize power losses which would also charge the battery and to power electrical system when its engine is running. With the battery charging while the engine is running and the electrolytic cells continuously injecting hydrogen into the engine, the whole system could run continuously. The research aimed at improving a previous project deemed worthy of being replicated.

*Keywords:* alternator, battery, hydrogen gas storage container, and hydrogen storage



#### **SEAIT-SR-061**

### **Banana Pseudo-stem Utilization as a Green Renewable Energy Resource**

*Wylar C. Bongac, Angelica S. Solomon,  
Silverio V. Magday Jr., Reg. ECE*

Electrical energy plays an important role in our everyday lives. As it places a vital role in our lives, its consumption has also increased. Thus, various ways of producing electricity are implemented. Almost all methods use conventional energy sources, although some methods are non-conventional. There are also environmental issues to be addressed in action in conventional ways because of these. This project implemented a new non-conventional energy source, which is useful in environmentally friendly electrical technology.

*Keywords:* properties and applications of banana pseudostem, ways of electrical production

**SEAIT-SR-062****The Design of a Prototype Non-Conventional Energy Conversion System that Utilizes Human Urine as a Fuel**

*Altheia Lynn V. Olaya, Tristan Marnique L. Querido, Renzo Rafael C. Tiongson, Jojo C. Mariano, Reg. EE, RME, MBA*

In this world, nothing is a waste. One can think of almost anything as being reusable. Pollution is rising worldwide due to fossil-fuel engine carbon monoxide poisoning, petroleum product price movement, environmental degradation, and the recent fuel subsidy scam. For these reasons, this project delved into the use of human urine. Since urine is produced everywhere, and it is estimated that humans produce 6.4 trillion liters yearly, this concept has a strong local flavor. The ability to produce energy locally could benefit this technology over other renewable energies, such as solar and wind, which are cost-effective in some areas. In this project, the main fuel was hydrogen coming from urine. Generally, urine is mostly water in addition to other chemicals such as ammonia, sulfate, uric acid, urea, etc. The four hydrogen molecules were weakly bonded with the other components. Thus, this hydrogen gas was passed through various components. This purified gas was passed to the generator, which generated the electricity.

*Keywords:* electrolysis, hydrogen, electrolyzers, urine, electricity

**SEAIT-SR-063****The Proposed Electrical Design in the Electrical System Development Plan of Saint Mary's University College Campus**

*Syrille C. Deus, Efren Paul Jr. P. Mariñas, Efren C. Sulio Jr., Jojo C. Mariano, Reg. EE, RME, MBA*

The purpose of this study was to propose an electrical design in the electrical system development plan of Saint Mary's University College Campus that would help the school reduce its

power consumption and lessen the power losses from the distribution lines. It would also increase the lifespan of the transformer banks, lighting fixtures, computers, and other facilities. The researchers focused only on the proposed project's technical aspects, including the electrical plan, measurement of electrical loads, specifications of materials, and bill of quantities. The design was based on the Philippine Electrical Code (PEC). After finishing all the calculations and design, the researchers devised a plan for the proposed project. As stated on the bill of quantities, the estimated total cost was ₱5,835,359.81.

*Keywords:* distribution lines, lighting fixtures, power consumption, power losses, and transformer banks



#### **SEAIT-SR-064**

##### **Electrical Energy Generation through Playground Equipment with Integration of Solar Power**

*Kert Aldrev D. Balonkita, Liegthon Mark H. Daquis, Kyle Vincent D. Ramiscal, Wenson R. Evangelista, Reg. EE, RME*

Energy contraption design is widely used in electricity generation by transforming different kinds of energy. One of the many common renewable energy sources is from human activities such as when children play with playground equipment like the seesaw, merry-go-round, and swing. The mechanical energy produced in the playground equipment could be converted to electrical energy using a compressed air pumping system. The main purpose of this study was to generate a clean source of energy by harnessing the power of children's play in the playground combined with the sun's energy. This project discussed designing and constructing a prototype for energy contraption through playground equipment. Installing an air pump in the playground equipment could produce compressed air that would be stored in an air tank. Also, an air motor was installed in the system to reduce air loss, which helps to rotate the Direct Current (DC) generator that would produce 12 volts of DC to be stored in a battery. This project would use the park as playground equipment and integrate solar power generation as

an alternative energy source. The operation begins when the pumps compress air and enters the air tank. Once the tank has reached 30 psi, the solenoid valve would automatically turns on to release the compressed air, which causes the air motor attached to the Direct Current (DC) generator to rotate. The compressed air produced by the playground equipment could generate 9-24 volts and be stored on a battery. Also, a charge controller would regulate the energy collected in playground equipment and solar panels. It could be used for lighting loads and any 12 volts dc load. Further project development was recommended for more efficiency and power generation.

*Keywords:* air motor, charge controller, DC generator, renewable energy, solar power, solenoid valve



#### **SEAIT-SR-065**

### **A Prototype Road Lighting System Utilizing Vertical Axis Wind Turbine (VAWT) and Solar Panels for Streetlights**

*Mark Franz C. Aliangan, Glendle G. Canam, Jury Kevin B. Dumalsin, Wenson R. Evangelista, Reg. EE, RME*

In today's modern world, life is proportional to electricity, which leads to an increase in energy demand, which is why people sometimes experience power shortages. The researchers developed a hybrid prototype system that could become a reliable energy source. The Solar Panel and the Vertical Axis Wind Turbine System could meet both these requirements. The idea proposed here was to generate electricity from wind power produced by road vehicles and sunlight. Even in the absence of either of the two sources, the remaining source may be used to supplement the absence of the former. As a result of all these features, the wind turbines of the Solar-Vertical Axis could be considered suitable for replacing the existing old means of generating electricity.

*Keywords:* electricity, prototype system, source of energy, wind turbines

**SEAIT-SR-066**

**eCrop Mo: Mobile Application for Agricultural Crops**

*Selina Joyce A. Acoba, Jane M. Bandao, John Luis F. Mendoza,  
Hanna Saviory A. Sapaden, Rogie G. Taborda, MIT*

eCrop Mo: Mobile Application for Agricultural Crops is a combination of web and mobile applications that allows users to access crops specifically from Ambaguio, Nueva Vizcaya. The study aimed to provide a platform to help the producers reach a wider or potential market for selling their agricultural crops. To attain the objectives of the study, the researchers used descriptive and developmental methods to identify the current problems encountered by the target recipients and as well as to develop and test possible features and functions of the system. The system had been developed on an android platform. If the features and functions of the system were consistent, it was believed that it would increase the potential market share of the producers.

*Keywords:* agricultural crops, mobile application, web application



**SEAIT-SR-067**

**ESPASYO: A Mobile Application for Locating  
Apartment, Boarding Houses, and Dormitories  
within the Vicinity of Saint Mary's University,  
Bayombong, Nueva Vizcaya**

*Mike Lester C. Vinoya, Danica T. Castillo, Kyzyll Ashleigh Auna  
B. Ugot, Kyra Jane D. Vergara, Iveefritz Romaine C. Vilorio,  
Essel T. Cañaberal, Vet. Med., MIT*

Expanding content and services related to information technology is imminent, as it opens up new markets and encourages the creation of company rentals of wholly new content and services to benefit society. This study aimed to

provide a mobile application that would innovate existing practices in finding a place to rent and provide a platform for landlords to promote their rental units. In this regard, the difficulties encountered were as follows: students had difficulty finding an excellent rental unit. At the same time, landlords also had difficulties in promoting their properties. Consequently, the researchers utilized Rapid Application Development to obtain quick and accurate input from users to make multiple iterations and upgrade to software at a rapid pace. It allowed the researchers to assess progress and reliably communicate any emerging issues or modifications. In conclusion, the mobile application could be a beneficial tool in assisting Saint Mary's University students and landlords as it addresses and simplifies the process of searching for a place to rent and allows landlords to have a suitable platform to promote their properties.

*Keywords:* e-commerce, rapid application development, rental units



### **SEAIT-SR-068**

#### **Web and App-Based Event Notification System of Saint Louis School, Solano, Nueva Vizcaya**

*German Emmanuel A. Boceta, Charles Darcy A. Quinsay,  
Marck Angelo C. Tolentino, Bryan D. Villagracia,  
Jerickson S. Chua, MIT*

Saint Louis School of Solano is established on democratic Christian principles, offering (9) strands in the Senior High School programs. Faculty and staff notify the students, parents, and alumni in different ways, such as talking to them in person or via text message, chats, email, direct message through Messenger, phone calls, letters for notification, posting on the official Facebook page of the school and home visitation if crucial. The problems encountered in information dissemination were slow internet connections due to weak signals, uninterested students in announcements, some letters were not given to parents, and parents not attending meetings, resulting

in difficulty in communication. The proponents developed a Web and App-Based Event Notification System for Saint Louis School of Solano to solve the problems mentioned and for easier and faster dissemination of information such as the school's announcements, schedules, and activities. It used Rapid Application Development for quick feedback from users to make multiple iterations and updates faster.

*Keywords:* event notification, mobile application, notification system, rapid application development, web application



#### **SEAIT-SR-069**

### **QR Code Visitor Monitoring System of Saint Mary's University of Bayombong, Nueva Vizcaya (Scan.Marian-SMUQR)**

*Roselyn Mae D. Pascual, Precious Danielle D. Sapo,  
Cedric A. Valle, Essel T. Cañaberal, MIT*

QR codes are incredibly secure since all critical information is recorded. Still, they are also a simple and cost-effective solution. Guards scan the QR Code using their Android phones. Scanning results provide a string that contains the user's personal information, such as name, address, phone number, and email address. If the Android phone has access to the network, the created string is automatically inserted into the login form. This study aimed to prevent the virus from spreading within the school grounds and generate a daily report of visitor numbers. An open-source proof-of-concept monitoring system based on a monitoring method provides visions and assessments of the system project. QR (Quick Response) codes were one of these breakthroughs. The COVID-19 pandemic, which SARS-CoV-2 causes, is affecting the whole world. IATF is the government agency to assess, monitor, contain, control, and stop. CHED granted Saint Mary's University the to conduct limited face-to-face sessions. It would monitor and identify the daily visitor and students who enter the office. Logbooks would no longer be requested to be filled up by the visitors in the office. It would

also benefit the visitors and students. The study used a RAD Methodology to develop the system application to implement the QR Code Monitoring System. The system applications that were created dealt with the issues that the study identified and offered a practical tool for keeping track of people who enter Saint Mary's University's campus. It would provide school authorities with useful visitor data.

*Keywords:* health protocol, monitoring, privacy, storing, safety and security



**SEAIT-SR-070**

**M-PLUMA: Supplementary Learning Material in  
Filipino for Grade 12 Students of  
Casat National High School**

*Hannah Isabel A. Balaino, Carlo P. Mamuric,  
Gertrude G. Danao, PhD*

This study aimed to help teachers and students accomplish their learning tasks more easily and with enjoyment by creating a mobile game-based learning application with the integration of mobile game development. Specifically, it aimed to provide additional supplementary teaching materials for Casat National High School, to design and develop a supplemental application with eye-catching graphics to catch the attention of the students and to develop a packaged multimedia system for Grade 12 Students of Casat National High School that is ready for execution anytime it is needed in the classroom. Phone Gap was used in creating the mobile application because of its hybrid language and is free of use. As a methodology, ADDIE was used because it was more applicable to mobile development. In particular, the project was structured in five main phases: (1) the analysis phase, which served as the researchers' goal-setting-stage; (2) the design phase, where the materials needed were figured out; (3) the development phase where with the use of Android Studio, Atom, Adobe Photoshop, and Adobe Illustrator, the application was created; (4) implementation phase where the client received the developed system prepared throughout all the previous phase; and lastly, (5) evaluation phase, where the client

and the pupils validated whether the system met its effectiveness.

*Keywords:* ADDIE, mobile game-based learning, phone gap



**SEAIT-SR-071**

**Barangay Bonfal Proper Web-Based  
Record Management System**

*Jan Marlo R. Querol, Rogie G. Taborda, MIT*

This study shows the development of the web-based record management system for Barangay Bonfal Proper. The system was developed to improve record keeping, the generation of files, and the supervision and administration of digital or paper records of the barangay; all records are kept and secured in a cloud. Developing the web-based record management system was utilized through the Agile-SCRUM methodology. The system prototype served as the basis for analyzing, designing, and developing the new system for Barangay Bonfal Proper. The methodology facilitated the total enhancement of the filing and recording system of the barangay. The output of the process was the web-based record management system of Barangay Bonfal Proper. This web-based record management system would make Barangay Bonfal Proper world-class and unique in the province as it addresses the 21st-century demands through technology.

*Keywords:* prototype system, web-based record management system



**SEAIT-SR-072**

**Saint Mary's University General Service Office Web-  
Based Inventory Management and Monitoring System**

*Jarish A. Fulgar, Rodolf Jan G. Velasco,  
Bermelita A. Tagtag, MIT*

Inventory management is primarily about specifying the size and placement of stock goods. Inventory management is required at different locations within a facility or within multiple areas of

the supply network to protect the regular and planned production course against the random disturbance of running out of materials or goods. This project aimed to design and develop an inventory management and monitoring system for SMU GSO to help their current system of monitoring and managing the inventory of Saint Mary's General Service Office. The researchers made use of Agile Methodology. The requirements for the inception phase were to establish the boundaries and scope of the project, the schedule, and the production cost of the system. The elaboration phase served as the blueprint of the system. It consisted of the prototypes of the system and an analysis of the problem in the construction phase. It focused on coding, development of the component, and system features. The transaction phase was where the product moved from the development team to the end-users. The researchers used MYSQL as a database that would store all the equipment information in which only the admin and staff are authorized to manage the system. The project would reduce the problem of searching, storing, retrieving data, and sorting inventory records. The SMU GSO Web-based Inventory Management and Monitoring System would provide a digitalized way of storing inventory information, office details and transactions, and borrowers' profiles in SMU GSO.

*Keywords:* managing, monitoring, organizing, reporting, retrieving, storing, searching, sorting



### **SEAIT-SR-073**

#### **ENYOG: A Sales Monitoring and Inventory Management System for LSB Restaurant and Special Buko Pie**

*Reynante K. Aquino, Gener B. Gudoy, Mc Ghensir Macalla,  
Irish Joy J. Ilarde, Jerickson S. Chua, MIT*

LSB Restaurant and Special Buko Pie is a family business located in Bagabag, Nueva Vizcaya, that uses a manual process to manage its sales and inventory. Accordingly, the proponents developed a Sales Monitoring and Inventory System to lessen the paper works, one in which all sales can be downloaded as

PDF files. The project proponents used Rapid Application Development, which consisted of four phases: requirements planning for gathering information, design phase for architectural formation of the system, construction phase for creating the system, and cutover phase for the implementation and client testing. The system developed could make the clients' work faster and easier.

*Keywords:* family business, monitoring, sales, and inventory



#### **SEAIT-SR-074**

##### **First Gateway Scholastic College Web Portal**

*Mark Jenbert P. Laciste, Roland Clinton P. Lanuza,  
Gertrude G. Danao, PhD*

The First Gateway Scholastic College Web Portal was created and designed to easily communicate and respond to the students and guests regarding their issues and concerns. The system could help the administrator, staff, and instructors inform their students about what is happening in their institution through SMS and Real time chat. Also, the administrator could send the students their account balance and grades, which would lessen work. This study used the Agile Methodology, particularly the Scrum framework. This system is user-friendly, which can bring benefits to the school. The system consisted of modules like Login, Manage Chat, Manage SMS Text Messages, Manage Notification, Manage User Log, and Manage Settings. Therefore, it was recommended that the school use the proposed system to achieve its goals to adapt to the rapid technological changes.

*Keywords:* Real-time chat, SMS, web portal



#### **SEAIT-SR-075**

##### **Blood Donor Information System for Red Cross Nueva Vizcaya**

*Cherrie Mae B. Apellido, John Kelly B. Remolazo,  
Essel T. Cañaberal, MIT*

The Red Cross Bayombong Nueva Vizcaya is one of the province's most important blood bank centers that provides blood to everyone in need. The center uses a manual system that focuses on blood donation. When donors donate blood, they must register their name by filling up the Blood Donor Interview Sheet containing their data, medical history, donor's declaration, initial screening, physical examination, and blood collection. The medical technologist evaluates the forms to determine whether donors can donate blood. Some donors already had their names registered, but every time they donate blood, they must fill out the form again. The medical technologist will locate the old forms of the donors who donated to check the last time the donors donated blood and their past medical history. The registered form is stored in the filing cabinet of the medical technologist's office. With this current system, the proponents created a project called: Blood Donor Information System for Bayombong, Nueva Vizcaya (BDIS). It was aimed to help the center improve its efficiency in managing donor data. The proponents used the Agile Scrum Methodology in developing and designing the system to provide the needs of the users and donors. The BDIS has seven (7) major functions that would help the center's staff efficiently do their duties. The BDIS included the management of user, blood type, donor, approval module, recipients reports, and logs.

*Keywords:* donor interview sheet, donor record, medical history



**SEAIT-SR-076**

**An Essential Computer Application:  
Playschool Management Information System**

*Hennie Jean P. Bicad, Benedict D. Caluya, Sean Cameron M.  
Cruz, Chelcea P. Dote, Essel T. Cañaberal, MIT*

There are many advancements in technology nowadays. Some preschool teachers are already using MS Excel in the grade preparation of pupils. Despite these advancements, many pre-schools in Bayombong still maintain their records manually.

They use pens and paper to record information about pupils and teachers. The records are placed in a folder and stored in a cabinet. This operation causes serious problems in storing, modifying, retrieving data, and generating reports. The Playschool Management Information System (PMIS) was designed to help the school process and manage data and consolidate reports needed for planning and decision-making. The main objective of this was to provide a preschool information computer-based system. Specifically, the project aimed to determine the practices and procedures of the preschool schools, including playschools, in the management and records keeping of pupils' information and grades; look for problems encountered in the present management and records keeping of pupils' information and grades; and design a client-server system which could easily manipulate data, build information, generate and print reports such as Child's Socio-Demographic Profile, Child's Attendance and Child's Development Checklist Report based on Department of Education's guidelines for pre-schools. The Agile SCRUM Methodology was used to develop the Playschool Management Information System.

*Keywords:* information system, management, management information system, playschool

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## SEAIT FACULTY RESEARCHES

### SEAIT-FR-01

#### **Usability and Acceptability Assessment of eNay Barangay Maternal and Child Healthcare Information System (BMCHIS)**

Dr. Gertrude G. Danao  
*Lead Researcher*

Bermelita T. Domingo and Rogie B. Taborda  
*Collaborators*

An information system named eNay Barangay Maternal and Child Healthcare Information System (BMCHIS) was developed to record and report barangay health workers' maternal and child healthcare services in Bayombong, Nueva Vizcaya, easier and faster. It was initially deployed and installed in one (1) barangay of Bayombong. To maximize its utilization and increase the number of barangays that will benefit from eNay BMCHIS, it will be deployed in all barangays of Bayombong. To further improve it, a usability and acceptability assessment was conducted. A three (3) part questionnaire was developed to determine the usability and acceptability of the system. The questionnaire includes items that will determine the frequency of computer usage, computer self-efficacy, eNay BMCHIS's usability, and acceptability. The Computer System Usability Questionnaire (CSUQ) was utilized to assess the system's usability in terms of perceived system usefulness, information quality, interface quality, and overall satisfaction. The researchers used frequency, percentage, t-test, and Pearson r, mean and standard deviation to analyze the data. Findings revealed a positive relationship between the frequency of computer usage and computer self-efficacy. The participants' computer self-efficacy did not affect the eNay BMCHIS perceived usability. Although the satisfaction rating in all areas of usability criteria was high, the information quality with the lowest computed rating will have to be improved. Furthermore,

the study results showed that eNay BMCHIS has a positive usability and acceptability assessment.

*Keywords:* computer usage, computer self-efficacy, maternal and child healthcare



## **SEAIT-FR-02**

### **Information Technology Graduate Students' Transactional Distance Experience and Perceptions in Online Learning**

*Gertrude G. Danao, PhD*

Online learning is a learning style that is used in distance learning. Pure online learning is the mode of instruction delivery used in most institutions at the height of the pandemic because of the prohibition of in-person modality. However, distance learning via pure online or blended or flexible learning results in increased dropouts because of isolation and loss of motivation and engagement. Transactional Distance Theory (TDT) refers to the perception of psychological distance between the student and his peers, his instructor/teacher, and the learning content (Weidlich & Bastiaens, 2018). As a result of the distance between the teacher and student and students with their peers, some students feel isolated and become less engaged. For the same reason, some students lose the motivation to continue their studies (Nwankwo, 2015; Fotjik, 2018). With this in mind, the researcher conducted this study to determine the transactional distance interaction that is most preferred and more effective for students to stay motivated and engaged. Google Forms was used to gather data online. The respondents' profiles, experience with online learning, perceived importance, perceived most effective TDT interaction, preferred online interaction, and challenges in faculty-to-student, student-to-student, and student-to-content interaction were gathered. To analyze the data, the researcher made use of the descriptive method. The study's findings revealed that the respondents' most preferred and perceived effective transactional distance interaction was the faculty or

teacher-to-student interaction. Poor internet connection was students' common problem or challenge in conducting the three (2) types of TDT interaction. The study recommended maximization of the faculty-to-student interaction and the needed provision for using other instructional resources that students can access, given the challenge of poor internet connection.

*Keywords:* interaction, online learning, transactional distance theory



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**Research Unit**  
**SCHOOL OF**  
**HEALTH AND NATURAL SCIENCES**  
**(SHNS)**

**Research Coordinator:** Cathelyn C. Mariano, LPT, MA

**Panel of Reviewers**

<b>Area of Specialization</b>	<b>Name of Faculty</b>
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**SCHOOL OF HEALTH AND NATURAL SCIENCES**

<b>Area of Specialization</b>	<b>Name of Faculty</b>
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## SHNS STUDENT RESEARCHES

### SHNS-SR-01

#### **COVID-19 - Induced Stressors Among College Students and Its Effect on their Stress Level**

*Karina Mae G. Dela Cruz, Charlene Maye A. Pobre,  
Liane G. Serra, Justine Joy O. Solano,  
Ellery Michelle C. Quiben, RN, MSN*

Using the descriptive-correlational design, this study determined the stressors brought by COVID-19 to Saint Mary's University (SMU) college students and how these affected their stress levels. The participants' profile variables were identified: age, sex, department, and religion, which correlated with their stress levels. The link to the Google Form questionnaire, which was adopted from the Stress Overload Scale of Dr. James H. Amirkhan, was disseminated via Messenger. Percentage and frequency were used to compute the data. Pearson r was used to determine the correlation of the profile variables to stress level. The results showed that most of the participants were aged 20-21. There were more female participants than males. The majority of the participants were SHaNS students and Roman Catholics. Most of the students identified online learning as their primary stressor. Additionally, most participants were under high-risk stress levels. Age and stress had no significant association with stress levels. Moreover, Roman Catholics were at higher risk of stress levels than non-Catholics. Still, the result was due to a limitation in the sampling method, resulting in an unequal representation of Catholics and Non-Catholics. The researchers recommended that guidelines for caring for stressed individuals in the school be crafted to aid them in dealing with stressors.

*Keywords:* event load, pandemic, personal vulnerability, stress level, stress overload

**SHNS-SR-02**

**Lived Experiences of Coping Among Gen Z Students  
During Pandemic**

*Fitz Colen C. Aliaga, Patricia Sofia F. Javier, Rica Mae D.  
Lopez, Mikee C. Serquina, Carla L. Tito,  
Geraldine Y. Ferreras, RN, MSN*

The COVID-19 pandemic has affected different sectors of society, including college students. Thus, this study presented the lived experiences of Gen Z students coping during the pandemic. Using a descriptive phenomenological design, the researchers determined the causes of stress, its sign and symptoms, and the coping mechanisms used by the participants. The study was conducted among 25 BS Nursing and BS MLS students at the School of Health Sciences of Saint Mary's University, Nueva Vizcaya. An online semi-structured questionnaire was distributed to the participants, which were selected through a non-probability method using purposive sampling. Their responses were analyzed and interpreted following Colaizzi's (1978) phenomenological method of approach. The study revealed that most participants were 21 years old, female, and in the Nursing program. Furthermore, the causes of stress were due to the abrupt shift from in-person to online mode of learning, limited mobility and isolation, added responsibilities at home, the fear of acquiring the disease, and the rising COVID-19 cases. Likewise, the signs and symptoms of stress were shown through negative lifestyle changes and compromised mental and emotional health. Lastly, the gathered themes highlighted coping mechanisms such as physical activities, adaptive mental conditioning, social support-based coping, and spiritual and religious coping. The study recommended a university-based intervention program or online seminars on stress management by school departments to further enhance students' adaptive skills to cope, especially in times of challenges and difficulties.

*Keywords:* causes of stress, coping strategies, pandemic, physical, psychologic

**SHNS-SR-03**

**Stress Coping Strategies of Pharmacy Students of Saint Mary's University in Dealing with Online Class during COVID-19 Pandemic**

*Richelle L. Allaga, Kristine S. Baldonado, Vienna G. Dinamaan,  
Marilou C. Fidel, Celenika M. Navan,  
Melchora M. Bautista, RPh, MSPharm*

The sudden emergence of the COVID-19 pandemic has caused higher education to shift from traditional face-to-face learning to online learning. This abrupt transition from a physical classroom to a virtual environment has disrupted students. This study determined pharmacy students' stressors in online education, stress level, and coping strategies. Data were gathered from 81 Saint Mary's University pharmacy students during the second semester of SY 2020-2021 using Google Forms. This study used a mixed-methods research design wherein qualitative and quantitative data were collected. Pearson r correlation, t-test, and One-way Analysis of variance (ANOVA) were used to analyze the data. Findings revealed that the Pharmacy student's stressor was high in academic workload and that they had a moderate level of stress with praying as their adoptive coping strategy. It also revealed a weak positive significant relationship between the pharmacy students' stressors and stress coping strategies. The study further showed a significant difference between the coping strategies of the Pharmacy students when grouped according to their profile variables. These results indicated that the new normal has presented various stressors to students and that they employed strategies to cope with these stresses.

*Keywords:* challenges, coping mechanism, online learning, stressors, student assessment



**SHNS-SR-04**

**The Interplay of Media Role, Knowledge, and Awareness of Risk Perceptions of Health Students to COVID-19**

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Coronavirus disease (COVID-19) challenges the healthcare system around the globe. This study aimed to assess the interplay of media, knowledge, and awareness of risk perceptions about COVID-19 among 400 health students of the School of Health and Natural Sciences. The researchers used a survey questionnaire that consisted of demographics, knowledge, perceived risk, and the media role of health students. The data were analyzed using IBM SPSS Statistics software. Among the selected health students, the majority were female, ranging from 17 to 24 years old. Most participants got information on COVID-19 through Facebook, YouTube, and the WHO website and social pages. Most participants were aware of the primary and factual knowledge of COVID-19, which was rated as satisfactory. The perceived risk of COVID-19 infection among the participants was excellent. There was a significant positive correlation between participants' knowledge, perceived risk of infection, and perceived role of media in COVID-19. Information dissemination using various sources such as social media, print, and broadcast media were excellent portals to educate and inform people to promote good and healthy behaviors in the observance of COVID-19. Health education programs that aim to improve COVID-19 knowledge and perception were recommended to increase public awareness and compliance with advised preventive measures.

*Keywords:* infectious disease outbreak, public health, pandemic, social media



**SHNS-SR-05**

**The Extent of Adherence of Third-Year Nursing  
Students to the Clinical Policies of  
Saint Mary's University**

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The study aimed to determine the extent of adherence of third-year nursing students to the clinical policies of Saint Mary's University Nursing department. It also looked into the significant differences in the students' adherence to clinical policies when grouped according to gender, senior high school strand, and grade point average. The descriptive-comparative research design was used to describe the variables and the natural differences between and among them. A researcher-designed tool based on the Related Learning Experience Policies 2019 edition of the School of Health and Natural Science nursing department was adopted and subjected to reliability testing using Cronbach's Alpha while the panel of examiners established face validity. Data were gathered electronically using the Google Forms application. Findings revealed that 20% of the third-year nursing students were males, while 80% were females. Regarding the senior high school strand they took, 23.5% graduated from the GAS strand and 76.5% from the STEM strand. Further, findings revealed that the highest frequency of participants obtained a grade point average of 87. As to adherence, the study participants said they always adhered to clinical policies promulgated by the Nursing Department. Analysis of the adherence to clinical policies considering gender and SHS strand showed no significant difference, while the GPA of 87 revealed a significant difference in adherence.

*Keywords:* gender, grade point average, profile characteristics, senior high school, related learning policies



#### **SHNS-SR-06**

### **Prevalence, Antibacterial Medications and Risk Factors of Urinary Tract Infection among College Students during the New Normal**

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This research sought to determine the prevalence of Urinary Tract Infection (UTI) among college students, the risk factors

associated with it, and the antibacterial they used to treat the infection, which was conducted among enrolled college students of SMU from June to December 2020. A Quantitative-Descriptive approach was employed in this study, and questionnaires were distributed online to the participants. It was found that the prevalence of UTIs among college students was 32.3%. From that, 10 out of 100 had recurring UTIs in the given period. Ciprofloxacin, Ampicillin, and Trimethoprim-Sulfamethoxazole were the participants' top three most common antibiotics. Also, the participants had existing practices that could increase the risk of UTI, including food preferences like eating sweets or salty food, water intake, drinking beverages such as coffee and soda, personal hygiene of female students, and holding urine and clothing. Health education webinars and strict implementation of medical examinations were recommended to improve students' knowledge about the prevalence of UTIs and increase their awareness about the risk of acquiring them.

*Keywords:* antibiotic, global threat, infection, personal hygiene, prescription



**SHNS-SR-07**

**Knowledge on Breastfeeding of Lactating Mothers:  
Basis for Relevant Activities to Enhance  
Breastfeeding Literacy and Awareness**

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Breast milk is the best food for newborns since it is safe and carries antibodies that protect babies from usual childhood diseases. This study presented the extent of lactating mothers' knowledge regarding breastfeeding. The researchers utilized a descriptive-comparative design to determine the significant difference in the respondent's knowledge regarding their sources of information and attendance to antenatal counseling. This study was conducted among Solano, Nueva Vizcaya's lactating

mothers. An online survey was distributed to the participants. Their responses were analyzed using frequency and percent distribution, mean score and standard deviations, Chi-Square, Kruskal Wallis Test, and Mann-Whitney U test. The study revealed that most lactating mothers got information from health facilities and attended antenatal counseling; this indicates that mothers who attended antenatal counseling were more knowledgeable than those who did not. Furthermore, the participants had a sufficient understanding of breastfeeding for mothers and babies and WHO and UNICEF recommendations. Moreover, lactating mothers' knowledge of the advantages of breastfeeding to mothers was not affected by their sources of information or the WHO and UNICEF recommendations. For antenatal counseling of the respondent, their knowledge of WHO and UNICEF recommendations had no impact or influence. In contrast, antenatal counseling significantly impacted the mother's knowledge. The researcher proposed a seminar on the benefits of breastfeeding, proper positioning, and latching to encourage lactating mothers to participate in breastfeeding education.

*Keywords:* antenatal, antibodies, breastfeeding, counseling, infant



## **SHNS-SR-08**

### **Life Experiences of Hypertensive Individuals During the COVID-19 Pandemic**

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Hypertension is considered a risk factor for severity and adverse reactions in COVID-19 patients. With a phenomenological approach, this study explored the life history of COVID-19 patients. 11 hypertensives were selected from various barangays in Bayombong, Nueva Vizcaya. The study found that the themes, namely: attitudes, behaviors, and motivations reflected in time

for family bonding and perseverance to live, emerged as maintenance of optimism. The gestures and life changes that occurred at the height of the pandemic were lifestyle changes that highlighted the limitations of outside exposure and dietary changes. At the height of the pandemic, the effects on participants' health problems were largely based on fear, fear of financial hardship, death, virus infection, and a burden on the family. Finally, the coping mechanisms regarding the challenges of hypertension in the new normal were the participants' adaptation to the current situation by following established health protocols, strictly observing medical treatment and schedule of taking medicine, and seeking spiritual guidance through prayers. The results could be applied to implementing nursing programs and skills, including community seminars and health education. Additionally, it could spread knowledge to a larger audience and broaden the research's application to the medical and nursing professions. The experts advised that a new quantitative research study could include the presentation of the themes as a variable.

*Keywords:* attitudes, behaviors, family bonding, motivations, optimism and perseverance



**SHNS-SR-09**

**New Normal Lifestyle and the Study Mechanisms of 3rd  
Year Medical Laboratory Science Students  
of Saint Mary's University**

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The coronavirus disease (COVID-19) challenges the educational system of healthcare courses in the Philippines. The study aimed to describe the new normal lifestyle and study mechanisms of the 3rd Year Medical Laboratory Science Students of Saint Mary's University enrolled during 2019-2020. It further studied the association between their new normal lifestyle and study

mechanisms. An online survey questionnaire was used to gather the data. Descriptive statistics frequency and percent and inferential statistics, Pearson-Chi Square test, and Pearson correlation, were used in analyzing the data. The new normal lifestyle of the participants generally ranged from fairly to moderately equipped in terms of the devices and resources owned to meet the requirements of the new learning mode. Regardless of the participants' sex, place of residence, sibling order, and socioeconomic status, they could participate in the learning activities set in the new learning mode through the primary devices and resources they owned. Also, the participants' study mechanisms showed that they were moderate to highly adaptive to the activities and skills fostered to meet the new learning mode's requirements. Moreover, the participants' study mechanisms in terms of behavior showed poor to fair adaptability. In addition, the study mechanisms of the participants in terms of activities, behavior, and skills were not significantly correlated to the new normal lifestyle brought about by the pandemic.

*Keywords:* activities, behavior, skills, new normal lifestyle, new learning modes, requirements, study mechanisms



#### **SHNS-SR-010**

### **Perceived Level of Stress and Coping Mechanisms of Bachelor of Science in Medical Laboratory Science Students**

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Stress is described as a state in which a person thinks that demands are greater than their personal and social resources. A stressful environment can adversely affect a medical student's academic performance and physical and mental health, especially during this pandemic. This study aimed to determine Bachelor of Science in Medical Laboratory Science students'

stress levels, causes, and coping mechanisms during the COVID-19 pandemic using qualitative and quantitative approaches involving descriptive-comparative design. A 10-item survey questionnaire adapted from the Cohen Perceived Stress scale and three open-ended questions were answered by the participants online using Google Forms. Findings revealed that the majority of the participants were female and resided in Nueva Vizcaya. For the perceived level of stress, the majority of the students experienced moderate stress because of academic, personal, and social relationship concerns. Also, there is no significant relationship between the participants' stress levels when grouped according to the profile variables, namely sex, year level, and location. The majority of students' stress sources were academic and personal problems. Thus, most students utilized coping mechanisms such as spiritual and recreational, athletic activities, and maintaining social contacts to maintain their mental health.

*Keywords:* academics, moderate stress, recreational and athletic activities, spiritual activities, and social connection



#### **SHNS-SR-010**

##### **Caffeine Intake and Academic Performance of Third-Year SHaNS Students: Basis for Relevant Activities to Enhance Students' Academic Performance**

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Caffeine is the top drinking buddy for students when studying. Students rely on caffeine to improve concentration, relieve drowsiness, boost cognitive performances, etc. A quantitative approach using descriptive-comparative-correlational design was used to determine the effects of caffeine intake on the academic performance of the third-year SHaNS students of Saint Mary's University. An online survey questionnaire was utilized

as a data-gathering instrument. Based on the result, most of the participants were female. Most participants were from the BSMLS, followed by BSN and BSP. The preferred type of caffeinated drink consumed by the participants was coffee. Most of them drink 1 cup of caffeinated beverage per day. Their GWA was within the level of satisfaction. The study proved that caffeine consumption had little effect during review and examinations but with considerable influence during class. This research found no significant relationship between caffeine consumption and academic performance. Furthermore, the participants suggested indoor activities to enhance students' academic performance aside from consuming caffeinated drinks for temporary psychomotor effects. The researchers also proposed activities to improve academic performance concerning caffeine consumption. These include meditation or self-reflection.

*Keywords:* caffeinated drink, general weighted average, indoor activities, level of caffeine consumption, level of effects of caffeine



**SHNS-SR-011**

**Lived Experiences of Medical Laboratory Science  
Students in Online Learning During the COVID-19  
Pandemic: Basis for an Online Academic  
Intervention Program**

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The transition from the traditional face-to-face classroom-laboratory setup to the new model of online learning education when the COVID-19 pandemic struck in 2020 has been challenging. This research focused on the lived experiences of Bachelor of Science in Medical Laboratory Science students in online learning during the COVID-19 pandemic. The study used a qualitative, descriptive phenomenology design using a semi-

structured interview guide. A total of twenty (20) Medical Laboratory Science students were the subjects of the study selected through purposive convenience sampling. Collaizi's descriptive phenomenology method was used to interpret the data responses. With thorough data gathering and analysis of the gathered results, the researchers were able to generate five main themes regarding the students' lived experiences in online learning education; these included the setup of online learning, the negative sides of online learning, adaptive strategies, and motivation in online learning which then became the bases for the proposed online academic intervention program.

*Keywords:* asynchronous learning, blended learning, distance learning, online learning, synchronous learning



**SHNS-SR-012**

**Reasons and Motivations of Freshmen Nursing Students in Choosing the Nursing Professions**

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Nursing is one of the most in-demand professions, not just in the Philippines but around the globe. Given that nursing is among students' top choices and such a profession is risky and stressful, this study aimed to determine the reasons and motivations of freshmen students in choosing nursing. This study included 99 participants from 188 freshman students enrolled in the Bachelor of Science in Nursing. Furthermore, this study made use of the descriptive-correlational method. Findings revealed that in choosing the nursing profession, there was high consideration of participants' abilities and parents' and peers' image toward nursing. In addition, the participants had very high consideration for their optimism toward nursing and the overall image of the profession. Still, they felt neutral about whether such a profession was too difficult for them. On the other hand, participants had very low consideration of nursing as a stressful and demanding profession, friends' influence, and

parents in a similar profession. Results indicated that factors such as age, sex, monthly family income, and general weighted average, when linked to the participants' possible reasons and motivations, did not affect the reasons and motivations of freshman nursing students in choosing nursing as a career.

*Keywords:* image of the profession, nursing as stressful and demanding, and parents and peers' influence



**SHNS-SR-013**

**Experiences and Coping Mechanisms of Pharmacy  
Students on the Distance Learning Modality  
amidst the COVID-19 Pandemic**

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The study used qualitative research with a phenomenological approach to describe the learning experiences and coping mechanisms of Marian pharmacy students on the distance learning modality amidst the COVID-19 pandemic in four aspects: physical, social, emotional, and mental. Their coping strategies for the hardships and struggles they experienced were also identified. The study was conducted through video calls. Findings revealed that in terms of their physical aspect, household chores and exercise were their main activities; others practiced sedentary behavior, *mañana* habit, loss of focus, and disregarding their studies because of distractions. Their social aspect showed that their relationship with their parents and siblings had improved. At the same time, their classmates, friends, and teachers became limited. Furthermore, they used social media to reach out to friends and other people, and students with poor communication skills became more expressive. Their emotional state showed instability because of the negative impacts. On the other hand, their emotional bond with their family and friends had become stronger. Their mental aspect showed changes in how they approached their lessons

independently. They also developed learning techniques to adapt to the online learning modality. Some students faced mental breakdowns due to the pile-up of tasks and other disturbances. With these challenges, strategies such as learning independently, managing time, asking for advice, and maintaining a positive mindset helped them cope. The researchers concluded that the pharmacy students' experiences had changed, specifically in the four aspects. Most pharmacy students showed more negative changes than positive ones. They faced challenges such as communication barriers, decreased motivation, and feelings of isolation. Moreover, they were able to face the negative impacts with their coping strategies that helped them adapt to the changes.

*Keywords:* coping strategies, online learning modality, learning experiences, learning techniques, phenomenological approach



**SHNS-SR-014**

**Perception of Marian Students on COVID-19 Vaccine  
towards the Development of an Information,  
Education, and Communication Material**

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Pharmaceutical companies fast-tracked the manufacture of the COVID-19 vaccine in response to the surging pandemic threats. This pace also fast-tracked clinical trials, which triggered reluctance and confidence in the safety, efficacy, and quality of produced vaccines. The researchers found it important that this reluctance and confidence be addressed. Thus, this study was conducted to determine Marian college students' perception of the safety, efficacy, and quality of the COVID-19 vaccine. The study utilized a quantitative research design. In the collection of data, an online survey questionnaire was sent to the Marian students. The participants were chosen through the snowball technique. Results revealed that most participants were 20 years

old, female, and from the School of Engineering, Architecture, and Information Technology (SEAIT). Their perception showed that most participants highly preferred the Pfizer-BioNTech vaccine. Participants also had a high level of perception of the safety, efficacy, and quality of the COVID-19 vaccine. But most did not agree that COVID-19 vaccines were cost-effective. No significant difference was determined regarding participants' perception of the COVID-19 vaccine's safety, efficacy, and quality. The study results helped the researchers develop the IEC material as an online brochure to be disseminated online. The researchers recommended that the developed online brochure be posted on the Facebook pages of Saint Mary's University for widespread dissemination. This was to ensure that Marian students became aware of the medical importance of the COVID-19 vaccine.

*Keywords:* brochure, collection, dissemination, medical, pharmaceutical



#### **SHNS-SR-014**

##### **Effect of Distance Learning Modality on the Learnings of Marian Pharmacy Students**

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Distance learning modality (DLM) became a norm at the height of the pandemic. This research sought to understand the status of Marian Pharmacy students' online learning platform, their experiences on distance learning modality in terms of their acceptance, the advantages, and disadvantages, and the effect of DLM on their learning when grouped according to the profile variables. Researchers utilized a mixed-methods design. The quantitative method involved a descriptive-comparative-correlational design, while the qualitative method was used to determine the reasons for the advantages and barriers of distance learning. A questionnaire was adapted from research

and was administered online at Saint Mary's University during the academic year 2020-2021. In light of the findings, it turned out that those live tutorials via Zoom or Google Meet were deemed effective as an online learning platform, and most students spent more than eight hours learning. Internet connectivity was the most experienced barrier, while no travel was the advantage. Lastly, there was no significant effect of distance learning modality on students' learning when grouped according to age, sex, and address, but a significant effect was found when grouped by year level.

*Keywords:* acceptance of distance learning modality, advantages of distance learning, barriers of distance learning modality, learning experience, online learning platforms



#### **SHNS-SR-015**

#### **Review on Patient Counseling in Preventing Medication Errors among Community Pharmacists of Nueva Vizcaya and Ifugao: Basis for an IEC Material**

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Pharmacists are an integral part of the community. Their vital roles revolve around ensuring optimum drug therapy for patients. This study aimed to assess the pharmacist's role in the prevention of medication errors through the provision of patient counseling. Specifically, it aimed to determine the demographic profile, quality of patient counseling, and the significant difference in the provision of patient counseling and to develop Information, Education, and Communication Material for community pharmacists. This research used a mixed-methods design. The quantitative approach, specifically the descriptive-comparative design, was used. The qualitative approach was employed through an open-ended item to elicit personal insights on patient counseling from the participants. Data were gathered

through an online survey questionnaire consisting of two parts, the demographic profile, and 35-point Likert items about patient counseling taken from the United States Pharmacopeia Medication Counselling Behavior Guidelines (USP-MCBG) and an open-ended item. This study was conducted in the provinces of Nueva Vizcaya and Ifugao pharmacists as the participants. Findings revealed there was low quality in giving patient counseling, and there was no significant difference in age, sex, salary range, and location of the pharmacy. In addition, a patient-based barrier was the major barrier experienced by community pharmacists, followed by communication, time, and provider/service-based barriers. Lastly, information, education, and communication materials containing the patient counseling process were developed. It would serve as a pharmacist's guide in counseling the patient.

*Keywords:* challenges, definite outcomes, drug therapy, medication-related errors, patient medication counseling



#### **SHNS-SR-016**

### **Provision of Pharmaceutical Care Among Community Pharmacists of Nueva Vizcaya During the COVID-19 Pandemic**

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This study focused on community pharmacists' role as the most accessible and reliable healthcare professionals as they continue to provide pharmaceutical care amidst the COVID – 19 pandemic. It aimed to determine the demographic profile of community pharmacists, describe the level of their provision of pharmaceutical care, and determine whether there is a significant difference in the provision of pharmaceutical care based on their demographic profile variables. A mixed-methods approach was used in this study, specifically a descriptive-

comparative design. This study was conducted in the community settings of Solano, Bagabag, and Diadi in the province of Nueva Vizcaya. A total of thirty (30) community pharmacists were the participants. A Google Form was utilized to create an online questionnaire to gather pertinent data. Descriptive statistics, Independent samples t-test, one-way ANOVA, and coding analysis were used to analyze the data. It was found that community pharmacists were mostly young in the profession, and a high level was observed in their provision of pharmaceutical care during the COVID – 19 Pandemic. It was also found that a significant difference in the provision of pharmaceutical care existed when the participants were grouped by sex among the profile variables. In conclusion, community pharmacists in the chosen municipalities of Nueva Vizcaya still managed to provide good pharmaceutical services despite the presence of COVID – 19 pandemic.

*Keywords:* coronavirus, definite outcomes, patient counseling, patient monitoring, responsible medication



**SHNS-SR-017**

**Perceived Influences of Distance Learning on the Theoretical Knowledge and Required Skills of Medical Laboratory Science Students**

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The study was conducted to determine how distance learning influenced the modalities or materials of learning and the theoretical knowledge and required skills of Medical Laboratory Science (MLS) students using a mixed-method approach of research, particularly descriptive design. A survey questionnaire consisting of 30 Likert-scale items and three open-ended questions in Google Form was utilized for the data gathering from the participants in Saint Mary's University during the SY 2020-2021. A concurrent triangulation design was used to analyze the answers to the Likert-scale items, while a thematic

analysis was done on the open-ended questions. It was found that MLS students agreed on using their gadgets more often in accessing their lessons and activities online than face-to-face as it had the greatest influence on distance learning as a modality. For the theoretical knowledge having the biggest influence, the participants agreed that there was a learning development based on knowledge assisted by the instructors. In the required skills, the highest influence was on the increase in laboratory work activities. Moreover, students also had difficulties learning theoretical knowledge and required skills for MLS. Distance learning for students has shifted the learning modalities from in-person teaching and hands-on laboratory procedure to purely online or digital discussion. It was also revealed that distance education did not positively influence theoretical knowledge and was ineffective in teaching skills.

*Keywords:* clinical laboratory, digital literacy, e-learning, new normal, technological obstacles



### **SHNS-SR-018**

#### **Online Based Laboratory Classes: Difficulties and Coping Strategies of Medical Technology Students**

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The sudden occurrence of the COVID-19 pandemic left universities with no choice but to implement online classes. The new modality of laboratory classes has challenged courses that require actual laboratory activity. Students' academic performance has been highly affected by technological concerns, community and individual barriers, domestic responsibilities, and institutional problems, which have led students to do necessary strategies to cope with the demands of the university. This study aimed to determine medical laboratory students' difficulties and coping strategies in their online-based laboratory

classes. The study was conducted through an online-based survey questionnaire in google form distributed to 49 regular third-year medical laboratory students of Saint Mary's University. Findings revealed that students classified the new modality of laboratory classes as difficult because of technological, individual, domestic, institutional, and community barriers. The participants regarded performing hematologic procedures and laboratory instrumentation as the most difficult laboratory skills among the list of laboratory practices of students in their online-based laboratory classes. Most students enrolled in online-based laboratory classes identified taking a break as their coping strategy. Overall, the students perceived online-based laboratory classes as difficult. It is supported by the interpreted data showing categories to be neutrally difficult or difficult.

*Keywords:* academic resources, barriers, modality, online learning, pandemic



#### **SHNS-SR-019**

### **Medical Technology Students' Perceived Influence of Sleep Deprivation on their Physiological Health and Academic Performance in an Online Learning Environment and their Coping Strategies**

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Sleep deprivation is the interrupted sleep-wake cycle of the students due to certain activities and assignments that need to be passed during midnight. This research aimed to describe through self-assessment the influence of sleep deprivation on the physiological health and academic performance of medical technology students. This study utilized a mixed-methods approach focusing on the problems of the study. The study also used a descriptive-correlational design to delineate the students' sleeping behavior, perceived influence on physiological health,

academic performance in an online learning environment, and the relationship between them. The coping strategies of each student were described using a qualitative design. This study focused on students enrolled in the Bachelor of Science in Medical Laboratory Science program at Saint Mary's University for the First Semester of the academic year 2020-2021. Demographic data, Stanford Health Care Sleep Questionnaire, Likert-type items, academic performance range, and open-ended questions were used to accumulate needed information. Collected data in the online survey were analyzed using Pearson  $r$ , Spearman's  $\rho$ , and Chi-square test. The results showed sleeping pattern irregularities, a significant relationship between the participants' sleeping behavior, and the perceived influence of sleep deprivation on their physiological health and academic performance. These results implied the assessment of a student's ability in a range of academic subjects, the perceived influence of sleep deprivation on the physiological health of the participants did not correlate with their GWA. Students had varied coping strategies for addressing their sleep deprivation.

*Keywords:* distance learning, general weighted average, irregular sleep, online, sleeping behavior



**SHNS-SR-020**

**Cognitive Effects of Online Learning on Health Programs Students of a Private Higher Education Institution**

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This study revolved around the cognitive effects of online learning on health programs. It aimed to profile the participants in terms of sex, program, devices used, and residence; to determine the participants' perceptions on the cognitive effects of online learning along entailing memory, critical thinking, comprehension, and decision making; to discover the challenges

encountered by the students in online learning; to know the significant difference of the responses when grouped according to profile variables and to present recommendations based from the findings. This research used the mixed methods design involving descriptive and comparative methods. The study was conducted for four months with 96 health program participants. The data were gathered through Google Forms. This study found that most participants were female, enrolled in BS nursing, using laptops and smartphones, and located in Nueva Vizcaya. The cognitive effects of memory, critical thinking, and decision-making were sometimes exhibited. In contrast, effects along with comprehension were usually demonstrated. Furthermore, the most prevalent challenges encountered by the students in online learning were environmental distractions and time constraints. There were no significant differences in the responses on the cognitive effects of the participants when grouped by profile variables. The recommendations were using app-blocking applications, online information-restricting platforms, evaluation of motivating factors, and social support. The researchers recommended adding other socio-economic variables, increasing the sample size, providing teachers with online- learning-related training, and submitting coping strategies for review by authorities.

*Keywords:* comprehension, coping strategies, critical thinking, decision making, memory, online learning challenges, virtual classroom



**SHNS-SR-021**

**Mental Health and Academic Performance of Medical Laboratory Scientist Students: Basis for an Enhancement Activity**

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This study focused on the perceived mental health and academic performance of Medical Laboratory Science students. It aimed to

determine the relationship between perceived mental health, academic performance, and selected demographic profile variables of third-year Medical Laboratory Science (MLS) students to come up with a basis for enhancement activities towards the improvement of the mental health of students. Profile variables included in the study were sex, religious affiliation, and gadgets used, while perceived mental health status included three domains: personal, social, and spiritual. The study utilized a quantitative method of research employing a descriptive-comparative-correlational research design. This study used a survey questionnaire distributed to 51 3rd year MLS students through online platforms. Descriptive statistics, Pearson product-moment of the correlation coefficient, and Independent Samples t-Test were used to analyze the data. The study found that most participants were females and Roman Catholics. The gadget commonly used as a Smartphone. The participants perceived themselves as personally, socially, and spiritually healthy. Most of the participants had an average range of 80-84%. It was found that there was no significant difference in the students' perceived mental health status and the level of academic performance when grouped by profile variables. However, the focus on the mental health of students must always be given attention. Implementing seminars and counseling could be ways to improve the mental health and wellbeing of students.

*Keywords:* enhancement activities, mental health, personally, socially, spiritually healthy, smartphone, wellbeing



**SHNS-SR-021**

**Knowledge and Compliance of the Residents of Solano,  
Nueva Vizcaya to the Department of Health (DOH)  
COVID-19 Guidelines**

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The COVID-19 pandemic has physically, socially, and economically affected people's lives. As a result, the local and

national government's continuous response has been made through implementing protocols introduced by the Department of Health (DOH). Hence, this study sought to determine the knowledge and compliance levels of the residents of Solano, Nueva Vizcaya, living in the three barangays with the highest COVID-19 cases: Quirino, Roxas, and Quezon. Moreover, their profile characteristics, such as age and gender, were identified and correlated to their degree of knowledge and behavioral control. The 116 participants were pooled from the young adulthood age groups (20-40 years old), subdivided into four classifications, with the statistical basis of convenience sampling under the non-probability sampling method. Results affirmed high levels of knowledge of the specific DOH COVID-19 guidelines by the majority of the participants. The same trend was also obtained in the degree of compliance of the participants to the different guidelines imposed by the DOH. Moreover, a significant relationship was established between the effect of gender on COVID-19 awareness (signs and symptoms) and the direct dependence of compliance on the knowledge level of the participants. The study's findings could serve as baseline data in recalibrating currently enforced health protocols and improve the efficiency of COVID-19 interventions, both by the local and national governments, to accelerate the flattening of the curve and mitigate the diffusion of the outbreak and its impact on the people.

*Keywords:* awareness, behavior, coronavirus, pandemic, regulations



**SHNS-SR-022**

**Non-Aligned Health Students' Profile and Their  
Knowledge and Practices Regarding  
Handwashing: Its Correlates**

*Kimberly B. Ancheta, Crystel Joi O. Edale, Julius M. Liang, Jr,  
Micah B. Mendoza, Jaylord B. Verazon,  
Leycel F. Marzan, RN, MSN*

Handwashing is a “do-it-yourself vaccine,” which is especially important during pandemics to break the chain of infection.

Although students did not have the desired hand hygiene knowledge, they kept practicing it (Gebreeyessus and Adem, 2018). This study aimed to determine the knowledge and practices of Non-Allied Health Students (NAHS) of Saint Mary's University (SMU) regarding handwashing and their profile characteristics, including sex and school. The descriptive-comparative research design was used in the study. It was conducted on 334 SAB, SEAIT, and STEH students from all year levels who were officially enrolled during the first semester of 2020-2021. The questionnaire was floated by sending the Google Document link through a social media platform (Messenger). The data was used to analyze frequency and percent distribution, means and standard deviations, independent samples t-Test, and one-way ANOVA. It was found that females had a higher level of knowledge regarding handwashing and practiced handwashing more appropriately than males. Still, there was no significant difference between knowledge and practice of handwashing when grouped by sex. Regarding school, STEH had the highest level of knowledge, SAB was second, and the lowest was SEAIT. According to the school, there was a significant difference between NAHS knowledge on handwashing. Regarding practice, SAB highly did the proper practice of handwashing. At the same time, SEAIT and STEH had good practices but were not significant. The study concluded that NAHS had very good handwashing knowledge and good practice of handwashing.

*Keywords:* handwashing, infection, knowledge, pandemic, practice



### **SHNS-SR-023**

#### **Middle-Aged Adults Perspectives on Health and Health Practices and Its Impact on Their Health-Seeking Behaviors: Basis for Crafting School-based Activities on Health and Wellbeing**

*Hanna Faith Fernandez, Ana Marie Joy A. Ling-Oy,  
Kyla Mei S. Lucas, Princess Janmae C. Pascua,  
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The considerable variation of health preferences among individuals poses a significant challenge for healthcare providers

in delivering medical care. Healthcare providers must know patients' health preferences to provide effective patient-centered care. Thus, this study presented some prevailing perceptions, practices, and health-seeking behaviors among middle-aged adults. The researchers utilized a quantitative-descriptive design and purposive sampling to select the 120 participants who are 45 to 60 years old and residing in the top three populated Barangays of Bayombong, Nueva Vizcaya. The online questionnaire through Google Forms comprised participants' profiles, health perceptions, health practices, behaviors, and barriers to health-seeking. Findings revealed that there were favorable responses to health perception and practices. There was an adherence to the standard and modern scientific and medical breakthroughs. On health-seeking behaviors: most preferred to visit doctors in medical institutions; the common reason for not seeking medical treatment of any illness was because the symptoms were not severe; most preferred self-treatment without definite reasons; utilization of herbal plants for traditional medicine; most participants related that they were in good condition, had health-oriented activities, and claimed that they had a good relationship with healthcare workers.

Moreover, monthly income did not influence health perceptions, but some were affected when grouped by educational attainment. Health practices influenced educational attainment and monthly income. The top three challenges encountered by the participants in health-seeking were: financial limitations, lack of time due to commitments, and fear.

*Keywords:* health challenges and socio-demographics, health institutions and services, health perceptions, health practices, health-seeking behaviors



**SHNS-SR-024**

**In Caring for COVID-19 Patients**

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Amazing Grace A. Rodriguez, Amira A. Tima,  
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The COVID-19 virus, which caused the global pandemic made a significant shift in the healthcare system. Nurses were one of the most affected professions since they provide direct care to COVID-19 patients. This study aimed to describe and uncover patterns in the nurses' experiences caring for COVID-19 patients. This descriptive phenomenological inquiry encompassed nurses working in community quarantine facilities in Ifugao. Adapted open-ended and semi-structured questions for the in-depth interview via zoom, google meet, and messenger applications were utilized. Subsequently, two major themes emerged after thematic analysis: burdens of nursing care with five subthemes and rising above challenges having two subthemes. In conclusion, nurses' experience working in COVID -19 quarantine facilities was primarily arduous and taxing. Lacked information, resources, and government support made professional working conditions hard and far from ideal. However, silver linings did exist even in tough conditions. The nurses expressed a sense of self-satisfaction when caring for COVID-19 patients and a sense of happiness when they recovered. Nurses felt that all their efforts were worth the sacrifice when they saw their patients improving. They had a deep sense of self-fulfillment, knowing it was due to their diligent efforts. They experienced honor and prestige when they fulfilled their oath as nurses, regardless of how taxing the processes were. This study highlighted that the experience, although laborious, was ultimately rewarding.

*Keywords:* healthcare system, pandemic, quarantine facilities, rewarding, taxing



SHNS-SR-024

**The Nutritional Status of Preschoolers of Aritao, Nueva Vizcaya: Towards Nutritional Activities among Parents with Undernourished Children**

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Balanced nutrition is one of the most important facets of build-up health. However, based on records and national surveys, cases of undernourished children are continuously on the rise. This study determined factors that caused poor nutritional status among children of Aritao, Nueva Vizcaya. In addition, this study employed the quantitative design utilizing a correlation technique with the Likert scale that was adapted and modified. Copies were distributed to 100 preschoolers with their parents using Google Forms. The study revealed that Banganan, Aritao, Nueva Vizcaya preschoolers were nearly underweight. The parents showed medium overall knowledge about the basic food group. Eighty-eight (88%) were underweight, only 12% were normal, and most of the participants always ate junk food. Dietary intake and BMI showed a high correlation. A webinar about home gardening was proposed to address the nutritional status of the participants. The study implied that health education and good advice from the health care personnel were critical in preventing child malnutrition.

*Keywords:* body mass index, dietary, food, education, and underweight



#### **SHNS-SR-025**

#### **Satisfaction of Fourth-Year Nursing Students on Online Distance Learning at Saint Mary's University**

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With the pandemic that forced many schools to shift online for learning continuity, satisfaction with the modality is a key area to be addressed to improve educational quality. This study focused on the level of satisfaction of fourth-year nursing students with online distance learning at Saint Mary's University. It aimed to determine the participants' satisfaction level and to consider the significant relationships with and significant differences when grouped according to their profile

characteristics. The researchers distributed the questionnaires to the participants online. The data were analyzed using frequencies and percentages, means and standard deviations, Pearson correlation for significant relationships, and t-test for significant differences. It was found that nursing students were generally satisfied with online distance learning in terms of e-learning access and accessibility, and student-teacher interaction. There was no significant relationship between their satisfaction in both areas and their age, the number of e-learning courses enrolled, and their family's monthly income. On the other hand, their level of satisfaction with student-teacher interaction varied when they owned a laptop or not and a tablet/iPad or not, when they could access their courses using WiFi or not, and when there was mobile data or not. It was then suggested that instructors use the nursing students' profile characteristics to design instructions based on the learning capabilities of the students in terms of gadget availability and Internet connection used.

*Keywords:* access, accessibility, e-learning, perceived satisfaction, student-teacher interaction



#### **SHNS-SR-026**

### **Coping Strategies of Teenage Girls During Their Transition to Motherhood**

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Latrell Lyndon E. Gelacio, Margot Trisha P. Inaldo,  
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Teenage mothers considerably face new challenges during their transition to motherhood. Studies revealed that they saw it as a positive life-changing event, whereas other studies revealed that teenagers felt disempowered and vulnerable; hence, coping strategies are employed to ease their situation and avoid further stress. In this study, the researchers sought to determine the coping strategies utilized by teenage girls during their transition to motherhood and the significant relationship of these

strategies with their sociodemographic profile. The researchers employed a quantitative-descriptive research design. Due to pandemic restrictions, and non-probability, snowball sampling was used to determine the 40 participants aged 15 to 24 residing in Bayombong, Nueva Vizcaya. The questionnaire, composed of the personal profile and coping strategies categorized into problem-focused, emotion-focused, and three other coping scales, mental disengagement, focus on venting emotions, and behavioral disengagement, was floated through Google Forms. Results showed that the coping strategies that the participants mostly employed were problem-focused, whereas emotion-focused coping strategies were sometimes used. The other three scales, on the other hand, were seldom used. Moreover, findings showed a significant relationship between the participants' age and coping strategies under emotion-focused. It also revealed a significant difference between Tagalog and non-Tagalog – speaking participants and their use of denial and religious coping strategies under emotion-focused, focus on and venting emotions, and mental disengagement.

*Keywords:* Coping strategies, problem-focused, emotion-focused, mental disengagement, focus on and venting emotions, and behavioral disengagement



**SHNS-SR-027**

**Experiences of Nursing Students in Online Classes  
amidst the Pandemic**

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Nursing is a skill-based profession that necessitates live demonstrations during classes. However, due to the pandemic, students have been forced to online learning. This study utilized the descriptive approach to determine the experiences of the Marian nursing students' online learning during the pandemic and the facilitating and hindering factors that affected their online learning experiences. The study was conducted through

video call via ZOOM. Findings revealed that many students encountered challenges and difficulties. In addition, some factors facilitated their online learning experiences, such as their educational approach to the problem, communication among their classmates, and the guidance of their instructors. Some problems hindered their experiences, such as poor internet connection, an uncondusive learning environment, technological problems, and limited delivery of instructions. The researchers concluded that the students of Saint Mary's University were experiencing a myriad of difficulties as they faced online classes. However, through their journey as students, they were able to adapt and persevere amidst the pandemic. The study highlighted that all of these contributed to a unique experience for those taking the nursing course online.

*Keywords:* corona virus, hindering factors, learning management system, new normal, online learning



### **SHNS-SR-028**

#### **Understanding the Students in Pursuit of the Nursing Profession**

*Ivan Maurice B. Ignacio, Elaiza A. Osorio, Gay Marie R. Santiago, Jevieleen B. Tabladillo, Lara Jane A. Valencia, Mary Rose C. Jontillano, RN MSN*

Nursing is a way of life that is continually changing and creating different opportunities to mold and strengthen the nursing field's structure. The study aimed to understand the reasons and motivations of the 3rd year nursing students from Saint Mary's University in pursuing the nursing program. The researchers employed qualitative research with a phenomenological approach and informal online interviews. Findings revealed two main themes as to why students continue to pursue nursing: motivational factors in pursuing nursing and learning experiences. In the first theme, two sub-themes were generated: care for others and obligation to the family. Two sub-themes were generated for the second theme: difficult profession and hesitations. Each participant gave his own opinions and perspectives that would define each main theme and sub-

themes. The information provided a rich understanding of the motivations and reasons why students continue to enroll and pursue the nursing profession despite the intricacies of the Covid-19 pandemic.

*Keywords:* coping strategies, learning experiences, learning techniques, online learning modality, phenomenological approach



### **SHNS-SR-029**

#### **Association of Academic Performance and Nutritional Status of Nursing Students in the New Normal**

*Anthony Geraim V. Garcia, Justine Kate M. Padre, Osmelyn U. Tanggana, Monica Joy D. Tolenada, Reygelyn D. Tuliniao, Rolita Grace V. Garcia RN, RM, MSN.*

This study explored the correlation between nutritional status and academic performance of nursing students at Saint Mary's University during the new normal using the students' diet quality and Body Mass Index as their nutritional status and their General Weighted Average. The study used a descriptive-correlational design. Data gathering was done online with the use of Google Forms. The data were analyzed with the use of descriptive and inferential statistics. Two hundred ten nursing participants in the strata were given online questionnaires that reflected their usual food intake. The survey result was computed to be their diet quality. Along with their B.M.I., their diet quality was associated with their academic performance. The results showed that the nursing students' diet quality was moderate, with an average B.M.I. For academic performance, most nursing students had a GWA of 87-97. Pearson's  $r$  showed no correlation between the diet quality with G.W.A and the B.M.I, with G.W.A. Thus, the study showed no significant relation between the nursing students' academic performance and nutritional status.

*Keywords:* basal metabolic index, diet quality, food intake, moderate diet quality, poor diet quality

**SHNS-SR-030**

**The Lived Experiences of Nursing Students During the  
Community Quarantine**

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Hermillos, Arianne Jade G. Iñigo, Fiona Nicole P. Odonez,  
Anne Margaret C. Botor, RN, MSN*

Different sectors of society have been affected by the COVID-19 pandemic, including educational institutions that have shifted to an emergency online learning format that could be overwhelming and greatly influence students' lives. Thus, the expected outcome of this study sought not only to know and be aware of the nursing students' experiences but also to determine how they lived through and responded to those experiences. The study used a qualitative phenomenological research design described by the six first-year nursing students of Saint Mary's University who were selected through snowball sampling. The researchers utilized the one-on-one interview method through Google Meetings. Three final themes were identified for Section 1: related learning experiences during the community quarantine, nursing students' difficulties due to the psychological effects of online learning and struggles experienced by nursing students in online learning. For Section 2, the four final themes included: alterations in communication with self, family, friends, classmates, and teachers; leisure time with family and self; consequences of community quarantine in the students' coping mechanism; and maintaining a positive mindset while on community quarantine. Despite the notable struggles they had gone through, the nursing students still managed to adapt, cope up, and were motivated to continue striving hard to develop their capabilities as future nurses.

*Keywords:* COVID-19, face-to-face learning, mindset, online learning, pandemic

**SHNS-SR-031**

**The Effect of COVID-19 Pandemic on the People  
of San Pedro, Bagabag Nueva Vizcaya**

*Jude D. Nidoy, Charmaine Gayle P. Bautista, Nikki Shein D.  
Bullong, Hannah Gaye B. Cabuloy, Jenica Ann L. Catabay,  
Joan B. Taroma RN, MSN*

The Covid-19 outbreak, which first emerged in China and has spread to the whole world as of the first months of 2020, has the potential to constitute breaking the course of history. The first confirmed case of Covid 19 in Nueva Vizcaya was on March 26, 2021. This study aimed to determine the effect of the Covid-19 pandemic on the people of San Pedro Bagabag, Nueva Vizcaya. Data were collected from 204 people of San Pedro Bagabag, Nueva Vizcaya, with the highest number of recorded Covid-19 cases as of October 19, 2020. The researchers used the Covid-19 Pandemic Community Scale as the research instrument. The effect of the pandemic on society was measured in three dimensions: sensitivity to the pandemic, protection against the pandemic, and social trust. Results of the study showed that the residents of San Pedro, Bagabag were vulnerable to the disease as they belonged to the working class and were also highly cautious about the dangers of the pandemic but highly compliant with the measures that could contain the spread of the disease. Age and educational attainment were not related to the pandemic's effect on their sensitivity to, protection against, and social trust in the fight against the disease. The males showed a higher effect of the pandemic in their measures to protect themselves against the disease, and those with the least income had the least protection level. The males also showed a higher effect of the pandemic in their measures to protect themselves against the disease than the female participants.

*Keywords:* sensitivity to the pandemic, protection against the pandemic, social trust

**SHNS-SR-032**

**Level of Awareness of Nursing Students on the  
COVID-19 Health Protocols**

*Fides Candy Y. Bacani, Sheverly A. Benitez, Princess Natalie M. Cabato, Coleen L. Domingo, Randell S. Saragosala, Thelma Delos Reyes, RN, RM, MSN*

Excellent health practice is important, especially in times of pandemic, to prevent the spread of the virus. This study aimed to determine the level of awareness of the third-year nursing students of Saint Mary's University on COVID-19 Health Protocols using a descriptive method. It was conducted on 101 third-year nursing students officially enrolled during the second semester of 2020-2021. The researcher made a tool patterned from health standards for COVID-19 released by DOH. It was floated via the Google form questionnaire link through an online platform. Frequency and percent distribution, means and standard deviations, independent samples, t-test, and one-way ANOVA were utilized to analyze the data. The results showed a high- level of awareness regarding COVID-19 health protocols in terms of increasing physical and mental resilience. While very high in reducing transmission, contact, and infection duration. There were no significant differences in the knowledge of the COVID-19 health protocols when grouped by age, religion, and province location. There was, however, a significant difference in the participants' level of awareness of physical resilience when grouped by sex. It was then recommended that future researchers consider doing investigations to assess nursing students' awareness of COVID-19 health protocols and other individuals in the community. During this pandemic, awareness is critical for timely preventative action and protecting oneself and family from the virus.

*Keywords:* health practice, health standard, knowledge, online platform, pandemic

**SHNS-SR-033**

**Coping Strategies of Teenage Girls During Their  
Transition to Motherhood**

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Peralta, Meriam Mendie Grace A. Guyguyon, Precious Joy M.  
Siapno, Anne Margaret C. Botor, RN, MSN*

The outrageous impact of the pandemic is badly affecting health systems and the healthcare workers of the Philippines, placing a significant gap in providing care to patients. On this basis, the researchers aimed to assess nurses' perceived stress levels and coping strategies. The researchers employed a conclusive approach which is quantitative. An online survey was distributed to the nurses of Region II Trauma and Medical Center (R2TMC). Responses were analyzed using frequency counts, percentages, t-tests, and one-way analysis of variance. The findings revealed that the participants' overall stress level was severe, and there was no significant difference in their perceived stress level when grouped according to their profile variables. Furthermore, the coping strategy the nurses practiced more frequently was the approach coping strategy. The findings implied the need for better strategies or activities to support nurses' mental and physical health and to develop innovative strategies in collaboration with health/government authorities to expand existing counseling services.

*Keywords:* coping resources, COVID-19 pandemic, occupational stress, psychological well-being, and short-term and long-term outcomes



**SHNS-SR-034**

**Relationship Between Self-Directed Learning  
Readiness and Learning Styles of Saint  
Mary's University Nursing Students**

*Kemuel John B. Padiangan, Queenet Mariane G. Belingon,  
Raquel M. Dimog, Beneriz Jynzelle T. Kikigue, Trishia Mae T.  
Kitong, Anne Margaret C. Botor, RN, MSN*

The COVID-19 pandemic has greatly affected the education system worldwide, forcing educational institutions to shift to a virtual mode of learning and teaching. Along with this change, the student's learning styles are yet to adapt to the new learning system since their readiness for self-directed learning. This study aimed to determine the relationship between the readiness for self-directed learning and the learning styles of SMU nursing students in connection with their demographic profiles. This study was conducted during the COVID-19 pandemic when online learning was the trend. It employed a quantitative design utilizing a descriptive-correlational method using descriptive and inferential statistics to analyze the data. The nursing student-respondents from the first to the third year were surveyed using an online questionnaire. The study's findings showed that most of the students were reflectors and their demographic profiles were not significantly related to their learning and self-directed learning styles. However, a relationship existed between the students' learning styles and self-directed learning readiness. During this COVID-19 pandemic, utilizing the virtual learning method is the most viable option for the safety and protection of students while delivering quality education.

*Keywords:* adaptability struggles, asynchronous learning, nursing education, online learning, self-motivation



## SHNS FACULTY RESEARCHES

### SHNS-FR-01

#### **Health Status and Correlates: The Case of Aged Residents in a First-Class Municipality**

Dr. Christopher Allen S. Marquez  
*Lead Researcher*

Melchora M. Bautista and Marissa Lyn A. Labangcoc  
*Collaborators*

This descriptive-correlational study dwelt on establishing baseline data on aged people's health status, economic well-being levels, and social support. In addition, economic well-being or social support significantly correlated with health status was also explored. Data were then used to craft a program to promote well-being among aged residents of Bayombong, Nueva Vizcaya. Results showed that they performed with little difficulty in activities of daily living and moderate difficulty in instrumental activities of daily living and physical functioning. They had a high extent of economic well-being and social support; however, these two were not significantly correlated with health status. This study emphasized important implications in enhancing the health status and general well-being of elderly people.

*Keywords:* activities of daily living, instrumental activities of daily living, physical functioning



### SHNS-FR-02

#### **Content Analysis and Usability Testing of M-Sigla v1.0: A Workplace Android Monitoring Application for Risk Factors of Non-communicable Diseases (NCDs)**

Dr. Cesar T. Medula  
*Lead Researcher*

Dr. Edwin Edilberto N. Mania, Erwin Exequiel P. Calata and  
Essel T. Cañaberal  
*Collaborators*

The conduct of added content analysis and usability testing of a developed mobile app like M-SIGLA v1.0 would be of great interest to the target stakeholders to better guide and inform expected decision-making processes for modification and utilization purposes. Utilizing a content analysis and survey as the adopted methodologies, the result indicated reputable content and usability testing results in M-SIGLA v1.0 is now well-equipped for workplace NCD-risk factor monitoring purposes.

*Keywords:* content analysis, usability testing, noncommunicable disease, risk factor.



### **SHNS-FR-03**

#### **The White *Pleurotus djamor* Mushroom as a Potential Additive in Nutraceutical Products Based on in-Vitro Evaluation of its Antioxidant and non-Cytotoxic Properties**

Dr. Arlene T. Tabaquero  
*Lead Researcher*

Mrs. Cathelyn Mariano and Mrs. Joan Taroma  
*Collaborators*

This study aimed to establish the white variant of *Pleurotus djamor* collected from the wild in Kayapa, Nueva Vizcaya, Philippines, as a potential natural additive for nutraceutical products and safe to be taken as a food resource, based on in-vitro evaluation of its antioxidant and non-cytotoxic properties. Using the mushroom's methanolic extract (*Pleurotus djamor* Methanolic Extract or PDME) and ethanolic extract (*Pleurotus djamor* Ethanolic Extract or PDEE), this study determined the antioxidant properties of the mushroom-based on Total Phenolics Content (TPC), Percentage of Radical Scavenging Activity (% RSA) and Reducing Power Capacity (RPC). The brine shrimp lethality assay determined the non-cytotoxic properties of both extracts. Results revealed that both extracts had remarkable antioxidant properties. The PDME yielded a TPC value of 31.08 mg/g GAE, 69.72% RSA, and 0.217 RPC. The

PDEE yielded a TPC value of 25.67 mg/g GAE, 68.81% RSA, and 0.299 RPC. Both mushroom extracts were non-toxic, with an LC<sub>50</sub> of 2,678.42 ppm. The study found that the white variant of *P. djamor* used in this study is a potential natural antioxidant additive for nutraceutical products and is safe to be utilized as a food resource.

*Keywords:* antioxidants, cytotoxicity, mushroom, nutraceuticals



#### **SHNS-FR-04**

### **Strategies for Managing Hypertension: An Action Research among Hypertensive Employees of SMU**

Gloria Vicky A. Antonio  
*Lead Researcher*

Dr. Moises Alexander T. Asuncion and Melanie G. Gurat  
*Collaborators*

Hypertension is a serious problem in developed and developing countries alike. Its prevalence has increased globally (World Health Organization, 2018) and nationally (National Nutrition Council, 2018). The 2015 health statistics show that hypertension and cardiovascular diseases are the leading cause of mortality and the second leading cause of morbidity in Region 2 (Department of Health, 2015). At Saint Mary's University, the incidence rate among employees in 2018 was 23.2% (Antonio et al., 2019). However, hypertension is preventable (WHO, 2015). It was then deemed urgent that employees apply strategies to manage their hypertension or minimize its adverse consequences. A cohort of 12 hypertensive employees was followed in action research over seven cycles of two to four weeks each. They were given an IEC material developed to exhort them to maintain a normal BP and a healthy BMI through the do's or don'ts of 27 activities. The 27 strategies for managing hypertension culled from various authoritative sources included activities related to medical, food intake, maintaining normal BMI or weight, avoiding vices, reducing

stress, and regular physical exercise. The volunteers periodically reported their implementation of mitigation strategies and had their BP and mass electronically measured. Cross tabulation, Wilcoxon signed-rank test, and partial correlation showed that, after taking into account varying frequencies of the management and control strategies, the participants' BP category significantly decreased but not the BMI level. However, greater effectiveness could have been realized if the BP status had become normal. It was then recommended for qualitative documentation of the participants' best hypertension management practices, for them to continue supporting their fellow participants, to convert or re-conceptualize the action research team as a mutual support system among hypertensive employees to provide a forum for exchanging good practices for mitigating hypertension, further studies on co-morbidities, e.g., diabetes and high cholesterol, and other vulnerable, like among new employees, to transform the research monitoring form to a self-monitoring guide-booklet, and to explore the effectiveness of participation in in-campus religious activities and psycho-spiritual development, and other relaxation strategies and stress-relievers.

*Keywords:* blood pressure, high blood, control





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**Research Unit**  
**SCHOOL OF**  
**TEACHER EDUCATION and HUMANITIES**  
**(STEH)**

**Research Coordinator:** Haydee D. James, LPT, PhD

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**SCHOOL OF TEACHER EDUCATION AND HUMANITIES**

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## STEH STUDENT RESEARCHES

### STEH-SR-01:

#### **Moves Analysis of Thesis Introductions Written by Grade 12 Learners**

*Eloisa C. Barbieto and Zayda S. Asuncion, PhD*

The introduction section of a research paper is essential in justifying the significance of the study in a particular area. Using descriptive-evaluative research design, this study aimed to determine the common moves and steps and the patterns of moves of the thesis introductions of Grade 12 STEM, ABM, and HUMSS based on Swales's revised CARS model (2004). Fifteen thesis introductions, five from each strand, were analyzed. The findings revealed that the most common moves were Moves 1 and 3. The most common steps were topic generalizations of increasing specificity, outlining purposes or stating the nature of the present research, listing research questions or hypotheses, and definitional clarifications. The dominant movement patterns were 1-3-1-3, 1-3-1-3-1-3-1-3, and 1-3. Additionally, variation in the move patterns in the thesis introductions was observed in which steps from the CARS Model of Swales (1990) were also identified. Generally, not all the thesis introductions employed the moves and steps of the revised model, which implies that the student researchers lack familiarity with the structure of a well-written thesis introduction. No thesis introduction followed the standard move pattern of the model. Hence, this study suggests a combined version of the two models along with these pedagogical recommendations: a) to incorporate the teaching of the combined and simplified Swales' CARS Model to STEM, ABM and HUMSS in either Practical Research or English for Academic Purposes subjects; and b) to conduct a workshop or lecture to Research and English instructors, including students, about the combined and simplified CARS model.

*Keywords:* thesis introductions; Swales' CARS model; moves, steps, move-pattern

**STEH-SR-02:**

**Types, Levels, and Causes of English Writing Anxiety  
among Grade 10 Learners**

*Krizza Mae B. Bartolome, Jennifer T. Tesorero,  
Rosalinda A. Tindungan, Marites B. Querol, MAT, MA*

This mixed-method research study aimed to determine and describe the types, levels, and causes of English writing anxiety among Grade 10 students from a private Junior High School in the northern part of the Philippines. The participants were 30 students who responded from the expected 75 students from two sections. The Second Language Writing Anxiety Inventory (SLWAI) by Cheng (2004) and the Causes of Writing Anxiety Inventory (CWA) by Rezaei and Jafari (2014) were utilized to gather the quantitative data. To collect the qualitative data, the participants were interviewed online. The selection depended on the anxiety levels; five interviewees were selected from each. The Statistical Package for Social Sciences (SPSS) was used to compute the results of the quantitative data, and thematic analysis was used to analyze the qualitative data. Findings showed that the most common type of anxiety Grade 10 students have in writing is *avoidance behavior*, and the least common is *cognitive anxiety*. The majority (63.3%) of the participants have high anxiety. Still, 33.3% of them have moderate anxiety, and 3.3% for low anxiety. The most common cause of students' anxiety in writing (with an average of 3.4) is a *lack of confidence*. The results provide some pedagogical implications for English Language Teaching, especially in writing.

*Keywords:* avoidance behavior, cognitive anxiety, confidence, mixed-method, writing anxiety



**STEH-SR-03:**

**Listening Difficulties Encountered and Strategies  
Employed by Senior High School Students**

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Kaye Domingo, Lady Valen Charon M. Asuncion, MA*

Given the importance of listening skills in developing other skills, learners must develop this skill. Thus, this paper investigates the listening strategies employed by senior high school students. A descriptive-inferential research design using the 32-item survey questionnaire on the Strategies for L2 Listening Comprehension questionnaire by Vandergrift (1997) and Goh (2010) and a written, structured interview were used to gather the perceptions of 51 Senior High School students enrolled for the Academic year 2021-2022. Findings indicate that Senior High students only sometimes employ listening strategies in their ESL classes. Among the different listening strategies, Senior high school students focus the most and evaluation the least. Among the different strands, students enrolled in the STEM strand usually use listening strategies. In contrast, HUMSS and ABM only sometimes use strategies in listening. However, the ANOVA test indicates no significant difference in strategy use when grouped according to strand. Both external and internal challenges, such as the physical setting, passage complexity, auditory factors, and attitude and motivation, challenge the senior high school students' listening comprehension. Hence, they must be familiar with and adopt techniques to counter these challenges. Moreover, ESL teachers may explicitly teach listening strategies in their ESL classes to enhance students' listening skills.

*Keywords:* listening strategies, ESL class, senior high school students, listening difficulties



**STEHSR-04:**

**Ortograpiya 2016: Paggamit ng mga Mag-Aaral Tungo sa Pagbuo ng mga Bungang Pangkaalaman**

*Hannah Nicole G. Cia, Elizardo A. Saldivar Jr.,  
Rodelio C. Gauan, PhD*

Ang pag-aaral na ito ay kwantitatibong pananaliksik na ginamitan ng *descriptive-evaluative* na pamamaraan dahil ang pangunahing layunin ng pananaliksik na ito ay mailahad at mailarawan ang mga interpretasyon at deskripsiyon ng mga nakuhang datos na nakaayon sa *survey*. Ang pananaliksik na ito

ay isinagawa sa Saint Mary's University Senior High School na isa sa mga pribadong paaralan ng Nueva Vizcaya na matatagpuan sa Barangay Don Mariano Marcos, Bayombong, Nueva Vizcaya. Ang mga naging tagatugon ng pananaliksik na ito ay ang mga mag-aaral sa na nasa Baitang 11 sa Saint Mary's University na kinabibilangan ng *Academic track*, Ito ay ang *Science Technology Engineering and Mathematics (STEM)*, *Accountancy Business and Management (ABM)* at *Humanities and Social Sciences (HUMSS)*. Sa unang suliranin na ano ang antas ng paggamit ng mga mag-aaral sa pagbaybay ayon sa mga tuntunin sa ortograpiya 2016, natuklasan na ang antas ng paggamit ng mga mag-aaral sa pagbaybay ayon sa mga tuntunin sa Ortograpiya 2016 ay lubos na hindi nakamit. Nangangahulugan na mababa ang antas ng paggamit ng mga mag-aaral sa pagbabaybay gamit ang ortograpiya 2016. Habang sa ikalawang suliranin na ano ang karaniwang kamalian ng mga mag-aaral sa paggamit ng mga tuntunin sa ortograpiya 2016, nagkakaroon pa rin ng karaniwang kamalian ang mga mag-aaral sa walong pangkalahatang tuntunin ng Ortograpiya 2016. Ibig sabihin, mayroon pa ring kalituhan ang mga mag-aaral sa iba-ibang tuntunin ng Ortograpiya. Sa panghuling suliranin na ano ang bungang pangkaalaman ang mabubuo para sa pagpapahusay ng kasanayan ng mga mag-aaral sa paggamit ng mga tuntunin sa ortograpiya 2016, nabuo ang *self-learning kit* na interaktibong multimodal para sa pagpapahusay ng kaalaman ng mga mag-aaral.

*Keywords:* interaktibong multimodal, kasanayan, self-learning kit



**STEH-SR-05:**

**Students' Leadership Conceptions and Political Engagement: Implications to Teaching Philippine Politics and Governance**

*Rudolph C. Benito, Jones K. Liwan, Erwin D. Naval, DPA*

This study focused on the concept of leadership and political engagement of students. Thus, it determined the participants' conceptions of leadership and knew their current political

engagement. Further, it determined the gaps between the notions about leadership and the current political engagement of the participants, which served as the basis for identifying the implications of the conceptions of leadership and current political engagement in teaching Philippine Politics and Governance. The study used an open-ended survey questionnaire, and the data gathered was analyzed with topical and thematic analysis. The students have knowledge and conceptions about leadership and the qualities and characteristics attributed to it. It was found that most students are engaged in elections, digital platforms, political discussions, and civic matters. Furthermore, gaps show that their political engagement does not reflect their conceptions of leadership and vice versa. What the students view and think is not the same as what they are doing or actualizing. Their concepts negate what they are engaged in. The existing gaps show that leadership conceptions and political engagement can be further improved by incorporating varying teaching-learning approaches aligned to the Philippine Politics and Governance curriculum.

*Keywords:* civic competence, education, gaps, social studies



**STEHSR-06:**

**The Difficulties of Senior High School Physical Education Teachers in the New Normal as Compared to Face-to-Face Learning and Interventions Implemented**

*Adrian Dion B. Flores, Juliene Ckaena B. Reguyal,  
Ronda L. Navalta, MAEd*

In recent years, COVID-19 has affected many matters that make people move in education, especially performance-based subjects that require learners to learn while moving. One specific problem is how teachers will deliver their lessons to their students. Since schools are closed due to the COVID-19 outbreak, many parents are scrambling to find alternative ways to keep their children active outside traditional P.E. courses. A physically active, knowledgeable population is more crucial than

ever in an era of global health risks, low aging populations, and bad lifestyles. Multiple incidences of unexpected mortality rates reported by the World Health Organization (2018) around the world prompted this necessity. Educational institutions then proceeded to devise a modality that could cater to the needs of each learner going through academic struggles in the pandemic resulting in the emergence of Blended-Learning. With the new modality, difficulties emerge, and interventions are needed to push through the teaching-learning process in the Physical Education subject. This study aimed to compare the difficulties and interventions used by Senior High Physical Education teachers from face-to-face to the new normal. The purpose is to determine if there were changes in how teachers delivered their lessons despite the implications of changes within the teaching environment. This study gathered data from 4 physical education teachers through frequency count and classifying responses. Results have shown that the new normal, compared to face-to-face, has an increased difficulty when it comes to teachers having to fulfill their responsibilities (workloads). As for the interventions used, two classifications emerged from the grouped responses given by the participants. In conclusion, the study found that teachers experienced more difficulties in the new normal than face-to-face.

*Keywords:* performance-based, blended learning, academic struggles, the implication of change delivery of the lesson, global health risk



**STEH-SR-07:**

**Factors Associated with the Academic Performance of  
Humanities and Social Sciences Students in  
Philippine Politics and Governance**

*Alpha Grace V. Lahing, Fann Won P. Ognase, Kenneth L.  
Maslang, MAEd*

Philippine Politics and Governance (PPG) is a new subject introduced due to a change in the Philippine Educational curriculum geared toward students in Humanities and Social Sciences. This study aims to determine intrinsic profile

characteristics such as interest and study habits and extrinsic factors such as parent-child relationship, teacher support, and peers from the learners' perspective. The researchers studied the students' academic performance in this subject using their first-quarter grades. It seeks to identify whether the abovementioned characteristics and their academic performance have a significant relationship. Enrichment learning activities were developed to enhance students' academic performance in PPG based on the result of this study. The researchers presented the subject's intrinsic and extrinsic characteristics using means. A similar method is used to determine their academic performance based on the participants' Form 138. The Spearman Rho was applied to assess the correlation of the variables. The findings indicate that the levels of intrinsic and extrinsic characteristics in the subject are sometimes related to their academic performance. Furthermore, most participants' academic performance in the subject was classified as "developing" according to the grade description in their Form 138. Based on the data analysis, this study discovered that students' intrinsic and extrinsic profile characteristics and academic performance have no significant relationship, implying that the variables are statistically independent.

*Keywords:* enrichment activities, students' interest, parent-child relationship, teacher factors, peers' influence



**STEH-SR-o8:**

**Communism as an Ideology: Perceptions  
in the Academe**

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Jhunell Paul M. Pedro, Jayson D. Bilangon,  
Haydee D. James, PhD*

Communism is one of the most misunderstood ideologies with a negative connotation linked to terrorism. Hence, there is a need for communism to be clearly understood. Thus, this study was carried out to assess the perception of teachers and students of St. Mary's University. The survey revealed that books and internet sites were the primary sources for students and teachers

to understand communism fully. There was a moderately high level of awareness of communism. Compared to students and teachers had a higher level of awareness of communism; however, their level of attention did not differ significantly. Generally, there were existing correlations among the aspects of economy, labor, and society in understanding communism as an ideology.

*Keywords:* ideology, society, economy, labor, communism



**STEH-SR-09:**

**Assessment of the Difficulties and Innovation of the Katarungang Pambarangay System in the Selected Barangays of Bagabag, Nueva Vizcaya**

*Luigi Aaron G. Mendoza, Emmalene A. Afan, Jiezel Ann B. Fernando, Armieilyn T. Gagate, Arlene B. Santua, Samuel B. Damayon, JD, MA*

The Katarungang Pambarangay is an important government agency that fosters balance and tranquility in the community. This study aimed to learn about Lupon Members' firsthand experiences with the Katarungang Pambarangay. It assessed the challenges encountered and innovations implemented by the members of the Katarungang Pambarangay in the settlement of the cases in the three areas of dispute settlement. When grouped according to profile variables, significant differences in the difficulty level were considered. This study employed both quantitative and qualitative utilizing a descriptive method in the eight selected barangays of Bagabag, Nueva Vizcaya. A three-part structured questionnaire was used to gather pertinent data using frequency, mean, and t-test for paired samples and ANOVA, and thematic analysis was used to analyze the qualitative data. It was found out that the specific difficulties are: not following suggestions and agreements, lies and disrespect; failure to attend to proceedings; lack of training and compensation, and lastly, violence during proceedings. The findings of the study also include that most of the Lupon Members have difficulty regarding mediation, conciliation, and arbitration proceedings. On the other hand, there is no

significant difference in the difficulty level when participants are grouped according to data except for sex. On the significant differences, it was only in the area of seminars or training attended that significant differences existed among the study participants.

*Keywords:* arbitration, conciliation, *katarungang pambarangay*, lupon members, mediation.



**STEHSR-010:**

**Effectiveness of Communication and Crisis Management in the Time of COVID-19 Pandemic: The Case of Lamut, Ifugao**

*Arvie V. Catud, Nixon G. Ligmayo, Robin John S. Tacang, Mae B. Gallangi, Decyrie V. Vilorio, Kenneth L. Maslang, MAEd*

This study mainly explored the communication and crisis management of the Local Government Unit (LGU) of Lamut, Ifugao, during the COVID-19 pandemic. Specifically, it primarily evaluated the effectiveness of communication management; the effectiveness of crisis management; the problems encountered by the LGU in implementing national and local COVID-19 guidelines; and the information educational material that can be crafted for communication and crisis management. Findings revealed that LGU of Lamut's effectiveness in communication management in terms of the type of information and communication received, channels through which information and communication were received, was highly effective. However, the frequency of information/communication being received was moderately effective. When it comes to crisis management, Lamut was also highly effective. It was also revealed that disobedience and defiance of protocols, COVID-19 financial impact, and the problems related to the national IATF COVID-19 protocols were the challenges encountered by the LGU in implementing local and national guidelines. These findings were derived from the data collected through face-to-face and online surveys via Google Forms and analysis using a combination of qualitative and quantitative approaches and

descriptive methods. This study highlighted the LGU's existing communication and crisis management initiatives. It also proposed that crisis management preparation and responsive communication be strengthened, which could result in a stronger and longer-term response not only to COVID-19 but even to foreseeable health concerns that may occur.

*Keywords:* Crisis, communication, effectiveness, management



**STEH-SR-011:**

**Teacher Interventions Toward their Students'  
Cyberbullying Experiences**

*Melvin R. Gutierrez, May Juliet S. Palina, Reg. GC, MS*

Relentless cyberbullying continues to venture problematic occurrences within our society. This descriptive study examined the teacher interventions employed by teachers in addressing cyberbullying. Using the purposive sampling technique, two hundred-five (97 females, 108 males) teachers participated in this study. The adapted instrument used in this study is the teacher intervention questionnaire. Results show that trolling is the predominant type of cyberbullying experienced by the students and reported to their teacher. In addition, the study revealed that the teacher participants most likely reported cyberbullying incidents to school administrators. However, since the participants became a teacher, it has been discovered that they rarely encounter cyberbullying occurrences in their students. Moreover, most teacher participants responded yes to implementing a formal cyberbullying prevention program in their schools. On the other hand, the participants said that professional development teacher's seminars are beneficial in reducing, if not eliminating, cyberbullying occurrences in their schools. This study would help people become knowledgeable about the devastating consequences of cyberbullying and spread awareness about the role of their teachers in helping them cope with their struggles with cyberbullying experiences.

*Keywords:* cyberbullying, teacher, awareness, intervention, telecommunication, prevention

**STEH-SR-012:****Spirituality, Spiritual/Religious Coping, and Mental Health among College Students during the COVID-19 Pandemic**

*James Walter M. Mesa, Tyron John P. Abraham, Mary Elaine C. Corpuz, Reyelyn U. Antonio, Master of Psychology*

For decades, spirituality and spiritual/religious (S/R) coping have helped bolster mental health. However, knowledge is limited on the relationships between spirituality, S/R coping, and mental health, specifically among college students during the COVID-19 pandemic. Thus, the present correlational, cross-sectional study attempted to fill this contemporary gap in the literature. Three hundred sixty-six (366) purposively selected college students from SMU completed the study data-gathering tools. Quantitative responses were analyzed using descriptive statistics and Spearman-Rank Order Correlation Coefficient. The findings show that participants have a very high level of spirituality and prefer positive S/R coping over negative S/R coping. Lamentably, they expressed having only suboptimal mental health. Neither spirituality nor positive S/R coping correlates largely with mental health, except for negative S/R coping with a medium correlation with mental health. Notwithstanding the result, the study still emphasizes that spirituality and S/R coping positively influence mental health. Hence, the study recommends the development of S/R-based interventions in the institution to improve college students' mental health despite continuously enduring the difficulties of the current global public health crisis.

*Keywords:* positive spiritual/religious coping, negative spiritual/religious coping, psychological health, COVID-19 pandemic



**STEH-SR-013:**

**Self-Disclosure, Intimacy, and Quality in Friendship  
Amidst the Pandemic**

*Czaeryna Dianne T. Bulatao, Keith Bergen D. Casiraya,  
Erica M. Macaspac, Ivy M. Semana,  
Bryant M. Soliven, MAEd, Rpm*

Friendship ties in this epidemic have been contradictory and problematic, especially for young adults, because of the COVID-19 directives to adopt social distance and stay home. Therefore, this study intends to examine if there is a difference in self-disclosure among 263 adults aged 18 to 39. Participants were men and women who were single, married, separated, and living -in in the provinces of Nueva Vizcaya and Isabela exclusively. In addition, this study analyzed how individuals perceive their closeness and relationship quality in their friendships throughout the epidemic. Three survey questionnaires were compiled containing three different scales—1) the Emotional Self-Disclosure Scale, consisting of eight subscales, each containing five separate items, 2) The Miller Social Intimacy Scale, a 24-item questionnaire; and 3) The McGill Friendship Questionnaire-Affection Respondent's (MFQ-RA) with 16-items. The data were acquired online using Google forms by engaging with the participants via Facebook Messenger. The study's findings reported that young adults were likelier to reveal emotions of happiness than emotions opposite it but remained not to reveal a lot yet maintained a feeling of intimacy and high quality in their friendships. It was reported that there was a perceived slight to moderate change in variables being studied during the pandemic and when grouped by age and civil status. Consequently, the results showed significant positive relationships in self-disclosure and intimacy, self-disclosure and friendship quality, and intimacy and friendship quality of young adults amidst the pandemic.

*Keywords:* COVID -19, closeness, emotional self, friendship quality, relationships



**STEHR-SR-014:**

**Barriers to Online Learning: College Students' Anxiety Level and COVID-19 Related Anxiety During the COVID-19**

*Myria Flor Felipe, Jeza Vilia Marquez, Frances Joy Zamora, Priscilla Anne R. Bangad, MAEd*

The abrupt changes brought by the COVID-19 pandemic, lockdown, and enhanced community quarantine forced the educational sector to continue operating remotely. Online class has greatly affected students' mental well-being. Thus, this study aims to determine the level of COVID-19-related anxiety that college students generally manifest, to identify which online learning barriers are causing stress as perceived by them and if these factors affect the general anxiety levels of college students during the pandemic. A quantitative, descriptive-comparative, and correlational design was used to assess the representative sample of 261 college students at Saint Mary's University for 2021-2022. A nonprobability sampling technique using purposive quota sampling was used in selecting participants. The socio-demographic questionnaire, Coronavirus Pandemic Anxiety Scale (CPAS-11), and Barriers of Online Learning Stress Questionnaire were used in gathering data through Google Forms. The findings revealed that college students had an overall experience of severe COVID-19-related anxiety during the pandemic. In contrast, they experienced a normal level of general concern. Most online learning barriers were moderately stressful, with the community and institutional barriers perceived as the most stressful. There is a high association between stress, online learning barriers, and general anxiety. There is a relationship between levels of COVID-19-related anxiety and general anxiety. It is recommended that the school administration develop interventions and preventive strategies to address students' mental health, provide additional assistance, and improve online learning techniques and approaches.

*Keywords:* anxiety, barriers to online learning, college students, COVID-19

**STEH-SR-015:**

**Physical Activity and Stress among College Students  
amidst the COVID-19 Pandemic**

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Pineda, Pearl Via S. Coballes, MAEd, RPm, Reg. GC*

The global outbreak of COVID-19 seriously affected people's lifestyles, reducing physical activity and negatively impacting students' mental health. This study explored college students' level of physical activity and perceived stress levels before and during the pandemic. The descriptive-correlational design was used in this cross-sectional study. The participants consisted of 360 college students selected using quota sampling. A demographic questionnaire, the International Physical Activity Questionnaire Short Form (IPAQ-SF), and the Perceived Stress Scale (PSS) were used to gather the data. Results showed a significant difference between physical activity (PA) and perceived stress before and during the pandemic. Males were found to be more physically active than women. The findings showed that PA levels are not a significant factor that impacts college students' stress levels before and during the pandemic. Implementing programs and encouraging physical activity is one method to persuade students to participate in physical activity to maximize its benefits.

*Keywords:* HEPA active, Metabolic Equivalent Task (MET) values, socioeconomic status, sex, workload



**STEH-SR-016:**

**Online Learning Experiences of Students and their  
Attitudes Toward Teamwork**

*Clarice A. Hernandez, Andrei Galamay, Edralyn Joy N.  
Gandeza, Alona C. Costales, MAEd, Reg. GC*

Teamwork skill is one of the essential skills in the 21st century. Due to the pandemic, students' teamwork is affected as universities shift to online classes. This study aims to see the

students' experiences in online learning activities and attitudes toward teamwork. A quantitative, descriptive-correlational research design is applied to attain the study's objectives. Saint Mary's University undergraduate students are the study's participants, and cluster sampling is administered. A survey questionnaire is used to collect the data needed. The three-parts survey questionnaire consisting of the participants' profile, a Likert-Scale of students' online learning experiences, and the attitude toward teamwork scale is utilized. It is expected that this study will provide data that can be a basis for devising a strategy to make teamwork more successful in online group activities and to improve the students' attitudes toward teamwork. The study's outcomes reported that students have a positive experience in all the dimensions of their online learning experiences. Despite the pandemic, students exhibit an optimistic attitude toward teamwork in their online learning. Future studies should include more public universities in the provinces regarding online learning experiences and attitudes toward teamwork and students' teamwork skills developed during online modality, including their relation in landing a job after graduation.

*Keywords:* collaborative learning, collaborative work, group activities, group work, online class



**STEH-SR-017:**

**Senior High School Students' Mental Health and Help-Seeking Behavior during the COVID-19 Pandemic**

*Jasper L. Marinay, Jasmine Joan U. Unida, Charlotte S. Misagal, Florence N. Bahni, MAEd, Rpm*

During the COVID-19 pandemic, students' mental health was affected, yet some students are still reluctant to seek help. This research aims to learn about the mental health issues senior high school students face due to the pandemic and the resources they use to cope. In this cross-sectional study, a quantitative, correlational strategy was adopted. The study had a total of 309 participants. They were senior high school students from

Bayombong, Nueva Vizcaya's Saint Mary's University. Convenience sampling was used to select the participants, and due to distance learning, the survey was conducted online. A demographic questionnaire, COVID-19 Student Stress Questionnaire (CSSQ), Generalized Anxiety Disorder – 7 (GAD-7), Patient Health Questionnaire-7 (PHQ-7), and Actual Help-Seeking Questionnaire (AHSQ) were utilized to gather data. Findings revealed that students experienced average stress, moderate anxiety, and mild depression during the pandemic. Informal help-seeking was frequently used with friends as the most-preferred help source, followed by the internet and parents. Self-reliance, stigma, and burden were identified as reasons for not seeking help. Females and those without access to mental health services experienced higher levels of mental health problems. Students who identify as Roman Catholic and Born Again turn to ministers for assistance. Tagalog students and those with sufficient income sought assistance from friends. Students who had access to mental health services sought help from parents, phone helplines, and doctors. On the other hand, students who do not have access to mental health services did not seek help. Lastly, students who do not ask for help from anyone also suffer higher levels of mental health problems. Programs raising mental health awareness and designed to eliminate the stigma surrounding mental illnesses and seeking help for mental health problems may effectively influence help-seeking behaviors.

*Keywords:* adolescents, anxiety, depression, mental health services, recent help-seeking behavior, stress



**STEH-SR-018:**

**The Role of Anxiety in Vaccine Literacy and Vaccine Willingness among College Students Amidst the COVID-19 Pandemic**

*Nika Mae F. Antonio, Jenchie P. Cabbigat, Lovely Joy B. Toje, Edwin Edilberto N. Mania, Reg. GC, EdD*

A vaccine is the best hope for a long-term solution to the pandemic's control. However, most of the population must

accept and use a vaccine to be effective (Berges et al., 2020). The purpose of this study was to assess the level of anxiety among college students. It also aimed to understand their ability to acquire and digest knowledge on the COVID-19 (Coronavirus Disease 2019) vaccine during the initial phases of development, when worries about the prospective vaccines were quite high. This study employed a descriptive-correlational approach, mainly quantitative. A study sample of 366 college students from Saint Mary's University was the study's participants. Social platforms such as Google Forms have been employed to gather the data. The study's findings affirmed that the college students showed moderate anxiety toward the virus and a high level of vaccine literacy. It also shows that most college students were more than willing to receive the COVID-19 vaccine. This study implies that when a person is anxious about the virus and literate about the vaccine, they are more likely to receive it for the COVID-19 virus.

*Keywords:* health literacy, immunization, online survey, theory, hesitancy



#### **STEH-SR-019:**

##### **Ifugao Mother and Child Love Languages Before and During the Pandemic**

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May Ann B. Dela Cruz, Mayline L. Limmapa,  
Leslie Doris M. Divina, Rpm, MAEd*

Everyone has his way of valuing the people they love. With the use of the five love languages by Chapman, every person can show love to one another to determine what we should do for them so that they can feel our love. In theory and observations, there is no existing research about the love languages used by Ifugao families and how they show love among their family members. This study aimed to determine the love languages of the Ifugao mothers and their children (18 to 24 years old) before and during the pandemic and determine the changes between

these two circumstances. This study used a cross-sectional design that is a quantitative, descriptive method. 120 Participants (60 mothers and 60 children) were chosen using a convenient sampling technique. The five love languages scale was used to collect the data online through JotForm and face-to-face distribution and collection of the questionnaire. The results showed that the mother's primary love languages before the pandemic were words of affirmation and acts of service during the pandemic. Children, before the pandemic, preferred receiving gifts as their love language, and during the pandemic, they preferred acts of service. It was also revealed that there is a significant difference in using the five love languages before and during the pandemic. Therefore, it is recommended that future researchers study how the preferred love language of the Ifugao mother and child is used to show their love towards each other.

*Keywords:* acts of service, love, pandemic, physical touch, quality time, receiving gifts, words of affirmation



**STEH-SR-020:**

**Perceived Parental Involvement, Academic Stress, and Coping Styles of Senior High School Students during the COVID-19 Pandemic**

*Mark Christopher Y. Cuntapay, Patricia Danica A. Martinez,  
Reiner B. Dulawan, RPh, MAEd*

Academic stress experienced by students increased as the Philippines shifted classes to distance learning. As parent-child interactions increased, this study aimed to see if there were relationships and differences in and between academic stress, perceived parental involvement, and coping styles among students. A survey questionnaire was used to gather data from the participants. It was divided into four parts: Participant Profile, Educational Stress Scale for Adolescents, Brief-COPE inventory, and Parental Involvement scale. This study used a quantitative, descriptive-correlational design. With a non-probability sampling technique using quota sampling, 162

senior high school students from Saint Mary's University participated in the study for the school year 2021-2022. Findings reported that students had a high level of academic stress, experienced a moderate level of perceived parental involvement, and utilized approach coping styles the most. There were also differences and relationships between academic stress, perceived parental involvement, and coping styles. Recommendations for future researchers are provided to further expand the knowledge behind this topic in the context of the Philippines and the normal education format. Recommendations for parents, schools and students are also provided to help reduce academic stress levels.

*Keywords:* distance learning, normal education format, parent-child interactions



**STEHSR-021:**

**JHS Students' Perceptions on the Benefits and Challenges of Multi-Modality Learning Program in English during the Pandemic**

*Russel J. Corpuz, Queza Shyna D. Culig,  
Marites B. Querol, MAT, MA*

This study aims to investigate the junior high school students' perceptions of the benefits and challenges of the Multi-modality Learning Program in English classes during the COVID-19 pandemic. To determine the benefits and challenges of multi-modality learning for the Grade 10 students and to investigate the significant difference in the students' responses when grouped according to socioeconomic status and source of academic assistance, mixed methods were used through a quantitative questionnaire with qualitative short response questions. The primary tool, the survey questionnaire, underwent pilot testing and validation. It contains questions on the benefits, challenges, and recommendations of the students regarding the multi-modality learning of the school. The

questions are classified into numerical responses on the Likert scale and short descriptive responses. While the quantitative data from the students' responses were analyzed using descriptive and inferential statistics (using SPSS), the qualitative data were analyzed using thematic analysis. The participants are 107 Grade 10 students from a private institution in the northern part of the Philippines. The results show that the students are generally neutral towards multi-modality learning and consider it most beneficial as regards *information access*. The majority consider multi-modality learning challenging for varied reasons. Still, the majority consider it *more difficult* as compared to face-to-face mode. Socio-economic grouping did not yield a significant difference in the students' responses, but the academic assistance yielded significant differences. The student responses provide some data to make the English classes more conducive for learning.

*Keywords:* perceptions, multi-modality learning program, benefits, challenges



**STEH-SR-022:**

**Panic-Gogy Effect during Emergency Multimodal Remote Physics Teaching on Engagement of Senior High School Students**

*Rubilyn L. Attam, Henno Nickole Vince A. Bugtong, Arantxa Loise D. Lu-ong, Cesar T. Medula Jr., PhD*

This descriptive-correlational study explored the effect on student engagement of the sudden pivot from in-person to multimodal remote Physics instruction during the pandemic. A researcher-made and modified standardized Likert-type survey instrument collected data involving randomly selected 104 STEM students. Analyses revealed a large extent of physical readiness, limitations, experienced practicalities, emotional engagement, and a very large extent of cognitive and behavioral engagement. Moreover, positive and negative correlations, respectively, of the extent of physical readiness and experienced

limitations to overall student engagement but none in terms of experienced practicalities. These suggested that the sudden transition to multimodal remote instruction did not undesirably affect student engagement yet presented opportunities for continual quality improvement to support students' continued self-motivation despite the limitations during catastrophic events.

*Keywords:* panic-gogy, remote physics teaching, physics instruction



**STEH-SR-023:**

**Challenges Encountered by Science Elementary Teachers in Teaching Through a Blended Learning Management System**

*Marie Flor D. Ayawan, Kirt Quincy M. Casil, Jesselyn Rose O. Lazaro, Federicia C. Calauagan, MAEd*

The covid-19 pandemic has greatly affected the educational sectors in our country. Despite the challenges the pandemic brought, education must continue. Thus, the researcher aimed to study elementary teachers' challenges and adjustments in teaching Science through blended learning management. The study further generated recommendations to address the challenges that Science teachers encountered in teaching. A semi-structured interview guide was used in gathering data from the Science teachers and the principal of Our Lady of Fatima School of Villaverde Elementary Department. In analyzing the data, thematic analysis was utilized. Data were divided into three sections corresponding to the research objectives: Section 1 dealt with the challenges encountered by the Science teachers, which brought forth six themes and specific related categories. Section 2 focused on the adjustments the Science teachers made in teaching in the new normal with four themes and specific related categories. Section 3 enumerated four emerging themes with corresponding categories as possible recommendations to help Science teachers in teaching. Findings showed that teachers

had encountered challenges in teaching Science but showed resiliency through their coping mechanisms, adjustments, and recommendations in teaching. It was recommended that the teachers contextualize materials, re-learn and learn teaching strategies, have good rapport among parents, love and be passionate in teaching, and for the future researchers to widen the scope of the research.

*Keywords:* adjustment, blended learning, challenges, recommendations, science



**STEH-SR-024:**

**Grade 10 Students' Mathematics Self-Efficacy and Situational Motivation in Modular Distance Learning in a Public High School: Comparative and Correlational Study**

*Joebert A. Alabon, Melanie G. Gurat, PhD*

Mathematics education provides efficient ways of strengthening the students' mental capabilities and encourages logical reasoning and mental rigor to sustain their mental knowledge in the discipline. This study investigated the correlation and comparison of mathematics self-efficacy and situational motivation of Grade 10 students in modular distance learning in a public high school. The study also used a quantitative approach, particularly descriptive-comparative and correlational research design. The data were analyzed through mean scores and standard deviation of the student's mathematics self-efficacy. Mann Whitney and Kruskal Wallis tests for the comparison of the means, and Pearson Product-Moment Correlation for the correlation. The findings of the study are the following: a) The level of mathematics self-efficacy of the students is at a "low self-efficacy" level; b) The level of situational motivation of the students in terms of Intrinsic motivation; Identified regulation; and External regulation is on "moderate situational motivation" level; while Amotivation is on "moderately low situational motivation" level; c) There is no

significant difference in the level of mathematics self-efficacy when grouped by sex, birth order, parents' educational attainment, mathematics reading materials available at home, gadgets in learning mathematics, and duration of studying mathematics. There is a significant difference in mathematics self-efficacy when grouped by time spent studying mathematics; and d) a significant positive correlation between Mathematics Self-Efficacy and Situational Motivation (Intrinsic Motivation, Identified Regulation, External Regulation, and Amotivation).

*Keywords:* amotivation, mathematics education, modular distance learning, self-efficacy, situational motivation



**STEHSR-025:**

**Analysis of Pupils' Academic Dishonesty in Modular Distance Learning in the New Normal**

*Wendell Lordwyn F. Ramos, Roselyn D. Dawong,  
Gerome H. Bautista, MST*

The research aimed to analyze the pupils' academic dishonesty in modular distance learning in the new normal. Thus, the study described the pupils' level of awareness, the extent of the practice of the different academic dishonesty behaviors, how teachers identified and handled this kind of behavior, and the recommended interventions to handle such behaviors. This study used a mixed-method, qualitative and quantitative approaches, and a descriptive survey design. Findings revealed that in terms of pupils' level of awareness, the pupils were not at all aware and had never practiced any of the stated behaviors of academic dishonesty; however, the teachers stated otherwise. Further, the common reasons for academic dishonesty were explored. Findings revealed that pressure and expectations from parents were the top reason. Most teachers identified pupils committing academic dishonesty through the handwriting, complexity of the answer, and scores, whereas plagiarism is the most common way. Overall, academic dishonesty occurred in

the pupils' works, and their teachers regarded this phenomenon as caused by several reasons and can be handled in various ways. However, it was limited by the modular distance learning modality.

*Keywords:* academic dishonesty, extent of practice, level of awareness, modular distance learning, recommended interventions



**STEH-SR-026:**

**Stress and Coping Mechanisms of Senior High School Students in Learning Sports in the New Normal**

*Axel A. Ampo-an, Dalarry L. Duldulao, Ronna Chiehann J. Vidal, Mary Grace M. Bulatao, PhD*

Physical Education is one of the most challenging subjects in the new learning modalities. It requires a lot of time, methods, and preparation. Students and teachers are struggling since the traditional face-to-face classes have abruptly moved to remote learning, which has proven to be a significant roadblock. This study aimed to determine the experiences of senior high school students in learning physical Education, specifically in learning individual, dual, and team sports during the new normal. Thus, it identified the causes of stress, the effects of stress, and the coping mechanisms that students use to manage stress. A total of 50 participants participated in the study, where a self-report survey questionnaire was used to collect data. Mean, standard deviation, frequency, and thematic analysis were used to analyze the collected data. This study indicated numerous stress-related implications in learning sports in the new normal. In addition, the students used various coping mechanisms to deal with their stress. In conclusion, it was discovered that stress affects students behaviorally, physically, psychologically, or emotionally, cognitively, and socially.

*Keywords:* coping, causes, effects, physical education, stress, pandemic

**STEH-SR-027:**

**Academic Motivation of Senior High School Students in  
a Private School in Learning Physical Education  
in the New Normal**

*Jojiemar M. Valdez, Nc Joseph Z. Hoggang, Margielyn  
Ragasa, Mary Grace M. Bulatao, PhD*

Academic motivation has been identified as a strong predictor of success in academic performance. Thus, this paper investigates the Academic Motivation of Senior High School Students in a private school to learn Physical Education in the New Normal. A descriptive-comparative design using an adapted 30-item survey questionnaire by Brière (1995) and a written, structured interview were used to gather the perceptions of 50 Grade 11 students of St. Mary's University Senior High School enrolled for the Academic year 2021-2022. Findings indicate that Senior High School students have high academic motivation in learning Physical Education in the New Normal. The study also revealed no significant difference between the Academic Motivation and Sex of the participants. Moreover, seven significant themes influence the Academic Motivation of the participants in learning Physical Education in the New Normal: Physical factors and health benefits of Physical Education (physically active and fit and healthy lifestyle), mental factor (takes away stress), social skills/ social interaction (new friends, friends, teachers, and family), building students' interests towards self-directed learning, Grades/ High grades, Self-improvement and skill development, overcoming unproductivity. In line with this, it was suggested that: Teachers should provide learners more options when presented with tasks for developing autonomy using the Universal Design for Learning which includes all learners knowing the goals, flexible choices for all learners to use, student access to available resources from the beginning of a lesson, and learners creating and internalizing their learning; Online media platforms should be utilized as this greatly influence the learning process; Physical education teachers should integrate confidence elements for students in their

learning materials such as giving instruction clearly, building a positive expectation for success and increasing students' belief in their competence; Teachers have to organize students into small groups (considering their capabilities and expertise), fostering social interactions and promoting peer collaboration to build relatedness.

*Keywords:* Academic Motivation, Physical Education, Senior High School student.



**STEH-SR-028:**

**Community Satisfaction on the Performance of the  
Philippine National Police in the Implementation  
of Community Quarantine**

*Kristine Joi P. Mariñas, Johnson E. Valdez,  
Melanie G. Gurat, PhD*

This study evaluated the level of satisfaction of residents of Villaverde, Nueva Vizcaya, on the performance of the PNP in implementing Community Quarantine. The study utilized a mixed method encompassing the quantitative and qualitative research process. The quantitative method was used to collect and analyze our study's data. In contrast, qualitative was used in posing research questions and interpreting the results obtained from our participants. The research was conducted in the Municipality of Villaverde's five barangays: Ibung, Bintawan Norte, Bintawan Sur, Nagbitin, and Sawmill, having the highest number of registered residents in the municipality. The target participants of this study were the persons located at places of convergence or merging areas. The study's findings showed that the residents of Villaverde, Nueva Vizcaya, were satisfied with all the Community Quarantine Protocols, such as the minimum health protocol, travel pass, quarantine pass mass gatherings, Curfew, and liquor ban. Strict implementation was considered both positive and negative feedback. Fairness to everyone was also suggested as negative feedback. Hence, the PNP Villaverde

must be more rigid and conscientious in implementing community quarantine protocols to elevate the satisfaction of the residents of Villaverde, Nueva Vizcaya, regarding the implementation.

*Keywords:* curfew, liquor ban, mass gatherings, minimum health protocol, travel pass, and quarantine pass



**STEH-SR-029:**

**The Effect of the COVID-19 Pandemic on Marian Criminologists in their Work Application**

*Jayson G. Cablinan, Franz Daryll B. Tapia, Mia Romaline C. Morales, Melanie G. Gurat, PhD*

The COVID-19 pandemic greatly impacted our society, especially among fresh graduates. Thus, this study aimed to determine the effects of the COVID-19 pandemic on Marian Criminologists in their work application in terms of financial sources, travel, processing documents, and waiting period. Their adjustments to the situation are also essential. We also asked future references for their recommendations for possible ways of applying even during a pandemic. The study utilized a qualitative approach, particularly a narrative research design. Ten alumni voluntarily participated in this study to be interviewed. Social media platforms were used to record the interview sessions particularly messenger. The data were transcribed and analyzed through narrative analysis. As a result, the pandemic has increased the expenses of work applications, especially in obtaining additional documents like an rt-PCR test. Travel is also limited due to lesser public transportation. In processing documents, each respondent faced difficulties since offices were usually closed due to positive cases. In the waiting period, the findings show a significant difference in the time spent obtaining documents and waiting for results during the pandemic. Participants adjusted well financially by smart budgeting, followed protocols every time they traveled, secured important requirements ahead of

time, and continued to focus on their physical and mental fitness while looking for alternative sources of income. Participants suggested that applicants be financially, physically, and emotionally prepared while applying for jobs during a pandemic. Undeniably, the pandemic is a tough transition for everyone, but it has brought the best among these participants.

*Keywords:* financial source, processing documents, travel, waiting period



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## STEH FACULTY RESEARCHES

### STEH-FR-01

#### **Securing a Clean, Healthy, Safe and Friendly School Environment, Challenges and Prospects for Stakeholders: Context of a Private Educational Institution**

Kenneth L. Maslang  
*Lead Researcher*

Dr. Fe Yolanda G. del Rosario and Dr. Darwin Don M. Dacles  
*Collaborators*

Utilizing a combination of qualitative and quantitative approaches, descriptive, evaluative design, survey technique, and scanning of relative data, this paper dealt with the second phase/year of a study set in a three-year log frame. The first phase/year covered perceived and experienced practices and implementation of the Clean, Healthy, Safe, and Friendly (CHSF) school environmental program of Saint Mary's University in the College department. This second phase or year looked into the extent of practice and implementation in the Grade and High School departments. Results showed that the established CHSF behavioral guidelines in various areas in the Junior High and Grade School Departments were generally practiced to a great extent. Some are being followed to a very great extent, but others are to a great and moderate extent. The extent of implementation of the goals and objectives of the CHSF program is at a very good level. It means that as a program, many of its features are known, behavioral guidelines are posted, and it is acknowledged as one of the identities of being a Marian. In general, being a student/pupil, teacher, or administrator is not a factor in perceiving the extent of practice and implementation of the CHSF program. There are no significant differences in the perception of these groups regarding whether the behavioral guidelines of the CHSF program are being practiced and whether the goals and objectives are being implemented. Best practices that support the CHSF program

and evolve based on the school's context are also being performed. The proposed CHSF framework, strategic directions and actions, structure, and sustainability components were crafted from all these salient features. It is then highly recommended that these be submitted to the university advisory board for review and consideration.

*Keywords:* best practices, child-friendly school, greening program, hygiene and sanitation, school climate



**STEH-FR-02**

**Depression, Meaning in Life and Hope in Late  
Adulthood: A Mixed Methods Research  
among Sedentary and Non-sedentary  
Older Adults**

Dr. Erwin D. Naval  
*Lead Researcher*

Pearl Via S. Coballes, May Juliet S. Palina  
*Collaborators*

Sedentary behaviors among older adults have been found to lead to better overall well-being. This descriptive-comparative research explored depression, meaning in life, and hope among sedentary and non-sedentary older adults. Sixty-nine older adults aged 65 and above consented to participate in a survey. The Beck Depression Inventory–II, the Meaning in Life Scale, and the Adult Hope Scale were used to measure the variables. Even amidst the COVID-19 pandemic, the older adults in this study yielded minimal depressive symptoms, a high presence of meaning, average search of meaning, and high agency, pathways, and overall hope. These results apply to both those with sedentary and non-sedentary lifestyles. No significant differences were observed for depression, a search for meaning, pathways, and hope when grouped by lifestyle. Significant differences were noted for meaning and agency, with higher scores observed for those with a sedentary lifestyle. Regardless of their lifestyle, older adults coped well with their lives and adjusted to their normal functioning after adversity. Older

adults who engage in sedentary and non-sedentary behaviors believe there is meaning in their lives and actively seek out life's fulfillment and goals. Both sedentary and non-sedentary older adults had agentic thinking and knew the pathway to achieve their goals. They are generally hopeful about the future. Sedentary behaviors did not create differences in one's tendencies toward depressive symptoms. They seemed to foster greater perceived meaning in life and agentic thinking. Recommendations were geared towards fostering active mental processes among older adults.

*Keywords:* depressive symptoms, agency, pathways, search of meaning, presence of meaning



**STEH-FR-03**

**“*Gaudete et Exsultate II*” A Comparative Exploration of  
Basic Education and Tertiary Employees’ Spiritual  
Intelligence and Work Morale: Basis in Crafting  
Institutional Project-based Activities**

Dr. Henry F. Gamboa  
*Lead Researcher*

Benito Buyacco Jr. and Dr. Liberty A. Rosario  
*Collaborators*

The study was a second phase of research on the state of work morale and the level of spiritual intelligence of the SMU employees, both teaching and non-teaching, of the Basic Education Department, which included the Elementary Department, Junior High School, and Senior High School. It embarked on a quantitative-qualitative, descriptive-comparative, and correlational research design in determining the level of spiritual intelligence (SI) vis-à-vis the level of work morale (WM) of all basic education employees, both teaching and non-teaching personnel of St. Mary’s University (SMU). It utilized researcher-modified and contextualized tools based on a standardized survey questionnaire in determining the spiritual intelligence and survey questionnaire on the level of work morale. Findings revealed that the level of spiritual intelligence

of SMU Basic Education employees was described as “average.” The majority of the items in the three domains yielded “average.” Their work morale was also “moderate.” Almost all the items were rated “moderate” except for Senior High, which solely rated some items as “low” and some as “high.” There was a significant positive correlation between SI and WM which means that the higher or lower the SI, so does the WM, or vice versa. However, no significant difference was noted between SI and WM when the employees were grouped according to sex and the number of years of service rendered to the institution. Yet there was a significant difference in the SI of employees when grouped according to departments. As evidenced in the results, the researchers recognized the role, connection, implication, or effects of spiritual intelligence in the work morale of employees at the Basic Education level, particularly in crafting a proposed intervention for the participants described above.

*Keywords:* spiritual intelligence, spiritual intelligence (si), spiritual quotient (sq), work morale, holiness, spiritual wellness, workplace spiritual intelligence



#### **STEH-FR-04**

### **The Nueva Vizcaya Retirees: Overcoming Barriers to Good Retirement towards Retirees Socio-Economic and Physical Mental Health Program**

Samuel B. Damayon  
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Sherwin A. Marciano and Mrs. Judith Daguio  
*Collaborators*

Retirement is an individual’s exit from the workforce, accompanied by a decreased psychological commitment to and behavioral withdrawal from work. It may refer to early or compulsory retirement, where an individual has to leave work. It is also understood as a decision-making process that emphasizes that retirees make a motivated choice to decrease their psychological commitment to work and focus on other life activities like family and community-related activities. At the

same time, it is also taken as an adjustment process where the emphasis is given not to the decision itself but on the nature of retirements like the timing of the retirement, previous preparation for the retirement, the resources available in retirement, and the activity change resulting from retirement among others. Thus, preparation for retirement is very important. This study aimed to determine the level of readiness of retirees for retirement, identify considerable barriers to a good retirement and determine as well as propose certain programs, projects, and activities that would promote a good retirement for retirees. It was found that retirees are well prepared for their retirement. They claim that they are well prepared personally and by their employers. However, despite such preparations, it was found that there are still considered socioeconomic and physical mental health concerns that bar them from enjoying a good retirement. The study results showed that socioeconomic concerns are intertwined with physical-mental health concerns, usually dependent on the former. Socio-economic preparation determines physical-mental health concerns in retirement. It was then recommended that employers and other organizations work together to craft and implement a socio-economic and physical-mental health program for the welfare of retirees in their pre-retirement and retirement stages.

*Keywords:* bridge employment, retirement planning, retirement decision-making, retirement transition, and adjustments, retirement barriers



#### **STEHR-FR-05**

### **Traditional Beliefs and Practices on Postpartum Care in a Rural Community in the Philippines: Towards a Multidisciplinary Practice of Postpartum Care**

Dr. Clara M. Gonzales  
Lead Researcher

Mrs. Rosalie C. Carreon, Brent Jericko P. Narciso  
and Dr. Zayda S. Asuncion  
*Collaborators*

In an earlier study that the researchers conducted about the perspectives on the health and well-being of the Ilocanos in Northern Luzon, they found that postpartum care is laden with many traditional beliefs and practices. For the Ilocanos, traditional practices related to postpartum care are integrated into their observance of *tanggad*, the Ilocano term for postpartum care practices. Among all the traditional health beliefs and practices identified in the said study, beliefs and practices surrounding *tanggad* stood out, indicating that the Ilocanos take childbirth and postpartum care seriously. The result of the study inspired the researchers to do follow-up research on the traditional beliefs and practices surrounding postpartum care, highlighting the observation that these beliefs and practices may have implications on overall maternal health. As a quantitative study, a checklist of practices was used to surface the traditional Ilocano practices on postpartum care. A similar process was also used to determine the participants' challenges in observing such practices. As a qualitative study, the participants' direct statements were used to support further the quantitative data gathered. The study was conducted in Bayombong, Nueva Vizcaya. The main participants of the study were the Ilocano working mothers who have already practiced “*tanggad*” in their postpartum recovery, regardless of the years that have passed since they gave birth. Findings revealed that the Ilocano working women in the locale still adhered to many of the Ilocano traditional postpartum care practices, or *tanggad*, in the Ilocano parlance. The practices that were adhered to by a greater number of participants were those that health experts also advanced, those that did not require much effort to do, and those whose needed resources were easy to find in the immediate environment. The adherence to these prescriptions did not just stem from a woman’s oblivious observance of the perceived effectiveness of her culture’s practices. Still, it also sprang from her critical assessment of the effectiveness of the practice for her speedy physical recovery. The Ilocano working woman has evolved, as shown in her adherence to *tanggad*. As a working woman in a place described as a meeting place of many cultures, she is challenged by social expectations and cultural diversity in her observance of *tanggad*. Also, adherence to

traditional postpartum care was not solely based on its medical value. As found in this study, many of the participants still adhered to the practices even if health organizations did not advance them because of the social support and sense of belongingness they get from adhering to their traditional practices. Interestingly, this social support was also highlighted in the WHO recommendations to address the woman's mental health during this critical time of her recovery. Therefore, the value of *tanggad* should not be solely evaluated by its contribution to the woman's physical recovery but rather to its overall contribution to the woman's general well-being, especially her mental and emotional health.

*Keywords:* cultural practice, medical value, social support, working woman



#### **STEHR-FR-06**

### **Pre-service Educators' Pandemic Experiences and Self-Care Activities**

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Reiner B. Dulawan and Marlon N. Saldares  
*Collaborators*

Physical and mental health is a serious concern in a situation like a pandemic. This is especially true for children and adolescents, who are considered vulnerable. As the impact of COVID-19 continues to evolve, expressions of moods and anxiety problems will change. At an individual level, children and youth have suddenly lost many activities, such as school, extracurricular activities, social interactions, and physical activity. These activities provide organization and a sense of everyday life. As this crisis continues, these losses in the children's and youth's activities have had a major impact on the youth's well-being. The study concludes that the mental health status of pre-service educators is greatly challenged because of the current pandemic crisis. The majority of the students

encounter problems related to personal, educational, and family concerns. Still, they have developed self-care activities to maintain their physical and mental well-being. The study recommends that care support systems such as the family and school extend assistance in the different aspects of the life of the pre-service educators to help them become resilient and overcome the challenges brought about by the pandemic crisis. Specific strategies should be crafted to address the pre-service educators' problems concerning the students' personal, educational, and family concerns. Modules of self-care activities are crafted and integrated into the CFE classes to uphold the students' holistic well-being.

*Keywords:* pandemic experiences, pre-service educators, self-care activities



**STEH-FR-07**

**Enhancing the Nutritional Health Status of Pupils in  
Multi-grade Schools of District 1 Bayombong,  
Division of Nueva Vizcaya through the  
Supplementary Feeding Program**

Dr. Ma. Cristeta M. Aduca  
*Lead Researcher*

Dr. Susan Galamay-Cachola and Edwin B. Aduca  
*Collaborators*

Children who consume insufficient, excessive, or imbalanced quantities of nutrients are more likely to struggle academically. Baseline data in the previous research indicated that most multigrade pupils had normal nutritional status. However, a considerable number had wasted to severely wasted status. The previous study concluded that the multigrade pupils had normal nutrition status but a limited intake of fruits, vegetables, and milk needed to ensure proper growth and development and recommended the adoption of the multigrade schools for the conduct of feeding programs to maintain the normal nutrition of pupils and to address the nutrition needs of pupils who are

wasted to severely wasted. Thus, this study aimed to conduct a supplementary feeding program in a selected multi-grade school to address the nutritional needs of the multi-grade pupils.

*Keywords:* health practices, health education, severely wasted, wasted

**STEH-FR-08**



**Practices and Difficulties Encountered by Liga Organizers in the Conduct of Liga ng Bayan**

Dr. Mary Grace Medina-Bulatao  
*Lead Researcher*

Dr. Clara M. Gonzales, Dr. Ma. Teresa B. Tayaban  
*Collaborators*

This study aimed to determine the practices and difficulties of the Liga Organizers in conducting Liga ng Bayan. Interviews with the Liga Organizers were done to determine their training needs and develop the most appropriate training program/activities to improve their knowledge of *Liga* in their respective barangay. The study concluded that the Liga Organizers had good practices in conducting Liga ng Bayan, such as holding meetings and making plans in preparation for the game proper, supervising during the game proper, and holding awarding ceremonies and post-evaluation after the games. The difficulties encountered by the Liga Organizers consisted mainly of misunderstandings among players, alleged biases of the referees, and rules on set qualifications for players. The Liga Organizers expressed their need for assistance, especially in providing sports clinics. Results of the study were used to make recommendations to maximize the benefits derived from the best way to conduct/implement Basketball Liga in the barangay through the application of a Standardized Manual of Operation and Guidelines where all the important details in the conduct of Liga are found.

*Keywords:* health and wellness, sports popularity, standardized manual of operations

**STEH-FR-09**

**Psychological Well-being and Depression Among  
Inmates in a Provincial Jail**

Pearl Via S. Coballes

*Lead Researcher*

John G. Tayaban, Kristine Ann L. Israel, May Juliet S. Palina,  
and Leslie Doris M. Divina

*Collaborators*

Improving prisoner well-being is an important public health objective. Focusing on well-being improves prisoner conduct and creates a society with low recidivism and misconduct. This study is Phase 2 of a 3-year project to improve inmates' well-being with drug-related cases. In this study, psychological well-being and depressive symptoms were measured among those with drug-related and non-drug-related cases. Seventy-five inmates from a provincial jail were requested to participate. The mean age of the participants was 30 years old (min.=16 and max.=62). Most participants engaged in worthwhile programs/activities while in jail, including religious activities, livelihood, alternative learning systems, sports, and a community-based drug prevention program. Results show that the participants had average well-being scores suggesting a good quality of life despite being in jail. Participants had high positive relations and purpose and average personal growth, environmental mastery, self-acceptance, and autonomy. Age and number of months in jail were also linked to PDL well-being. Implications for prisoner welfare and management are discussed.

*Keywords:* inmates, quality of life, mental health, prisoner health, depressive symptoms



**STEHR-FR-010**

**Beliefs and Practices of Senior High School Teachers  
and College Instructors on Intercultural  
Communicative Competence**

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Rosalie L. Navoa, Maria Ines R. Minia  
and Marites B. Querol  
*Collaborators*

This study addresses quality assurance among teachers/instructors/mentors on the topic of intercultural competence in Oral Communication (OC) in Senior High School and Purposive Communication (PC) at the university level. The study aimed to answer the following questions: (1) What are the beliefs and practices of teachers/instructors/ professors on: (a) the objectives of Second Language Teaching (SLT), (b) the Components of Intercultural Communicative Competence (ICC) for Language Learners in the Philippines and (c) their beliefs regarding Intercultural Communicative Competence (ICC) in Classroom Teaching?; (2) How frequent do the teachers (a) include the topics in ICC in their classes (Oral Communication or Purposive Communication), (b) utilize the activities in their classes?; (3) Do the teachers/instructors/professors' beliefs in intercultural competence relate to their (a) practices in teaching intercultural communicative competence and (b) profile?; and (3) Is there a difference between the ICC of the teachers when they are grouped according to their classification? The study included 17 teachers (9 from the SHS and eight from the tertiary) who were purposively chosen. An ICC questionnaire (adapted from Tian, 2013) was used to gather the teachers' responses regarding ICC after getting their consent. The results

revealed that the teachers were generally the same in their beliefs and practices on ICC, and both consider the objectives and components of ICC important. The belief in the importance of language proficiency correlated with four ICC topics, and the belief in the relevance of students' attitudes correlated with three activities in ICC. As regards profile, age, gender, and years of teaching correlated with some ICC activities, when tested for significant difference, the two groups differed only in one, i.e., in focusing on the students' attitudes of openness and tolerance towards other peoples and cultures in which the SHS gained a higher mean.

*Keywords:* intercultural communicative competence, k12, oral communication, purposive communication



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## **INSTITUTIONAL POLICY-ORIENTED STUDIES**

### **IPOS-OUR-1**

#### **Online Enrollment: An e-Service Initial Evaluation**

Gertrude G. Danao, PhD  
*Office of the University Registrar (OUR)*

Online enrollment is not only an answer to travel restrictions because of the Covid-19 pandemic but also an opportunity for a more convenient, easier, and faster way of doing enrollment inside the comfort of one's home. Despite the presence and the instruction to utilize an online enrollment system in a higher education institution, some students prefer to enroll on campus. As a result, the researcher conducted a survey to determine reasons for students enrolling on campus rather than online and conducted an initial evaluation of the existing online enrollment system in terms of e-service qualities. The researcher used a survey asking why the respondents enrolled on campus instead of using the online enrollment system. Content and framework analysis was used to analyze the answer of the respondents. The contents were analyzed and grouped thematically or according to the similarity of responses which were then mapped according to the different dimensions of e-service quality. Frequency, percentage, and ranking were used to identify the most pressing concerns or issues that need to be addressed in the existing online enrollment system. The results revealed that the students enrolled on campus because in-campus enrollment was easier, more convenient, and faster than the existing online enrollment system. The results also showed that the response time was a major concern of enrollees enrolling on campus. Efficiency, reliability, responsiveness, access, fulfillment, and trust were the e-service qualities that needed some improvement to enhance the existing enrollment system.

*Keywords:* e-service quality, online enrollment system, evaluation

**IPOS-LMCDAC-2**

**Saint Mary's University Museum and CICM Historical  
Development and Evangelization (1908 - 1958)**

Kenneth L. Maslang  
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Dr. Christopher Allen S. Marquez, Evelyn J. Rizardo,  
Ernest L. Esmeralda, Sheryll D. Barut  
*Collaborators*

Museums and university museums have had great connections with each other and have been through numerous expansions and modifications. This study endeavored to expand pertinent information about SMU Museum concerning the CICM story of evangelization in its first fifty years (1908 – 1958) in Nueva Vizcaya. Findings showed that the first fifty years of CICM evangelization in Nueva Vizcaya from 1908 to 1958 had covered six mission stations in the towns of Dupax (1908), Bayombong (1908), Solano (1908), Bambang (1909), Bagabag (1910), and Aritao (1916). These years of evangelizing CICM confreres brought out myriad dramatic and challenging experiences that paved the way for a success story in mission and evangelization. Through these years of extensive pastoral work, Saint Mary's University, one of the CICM-established educational institutions, was able to organize in its museum an exhibit of this beautiful journey of the CICM in Nueva Vizcaya. Other tangible artifacts were also included as a reflection of their presence with the various ethnolinguistic groups in the province. The artifacts could be categorized into six, namely: 1) CICM-related artifacts; 2) Household items; 3) Work implements; 4) Crafts; 5) Coins and paper money; and 6) Weapons. These were labeled with their local and English names, descriptions, accession number, and the number of items. The proposed themes and sections for the new SMU Museum were composed of two parts. These are (a) the foundation and early evangelization of CICM in the province of Nueva Vizcaya; and

(b) the actual collection and categorization of CICM-related and ethnolinguistic artifacts. The proposed CICM museum can be categorized as a History and Cultural Museum. Section 1 shows the history timeline of the first 50 years of CICM Evangelization in Nueva Vizcaya (1908 to 1958). Meanwhile, Section 2 relates to the history timeline of the CICM and the foundation of Saint Mary's University. Finally, Section 3 presents the exhibition of culture and background.

*Keywords:* Artifacts research and documentation, CICM mission stations, CICM in Nueva Vizcaya, History and Cultural Museum



### **IPOS-LMCDAC-3**

#### **Community Profiling and Needs Assessment: The Cases of Two SMU Adopted Communities**

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Community profiling and needs assessment are necessary before the implementation of extension projects. Using the descriptive design, this study described the profile characteristics. It analyzed the implementation levels of basic services, the problems encountered, and the resources available in the two adopted communities of Saint Mary's University. This study identified that Sitio Masina, Baretbet, Bagabag and Purok Gonggongob, Cabuluan, and Villaverde differed in the number of households, ethnolinguistic groups, and religion. Generally, there was a good implementation of the basic services. Many household heads earned below the monthly minimum wage. For

both communities, the common needs were employment and job training, food inspection and safety, disaster response plans, and access to transportation. There were also identified needs by most household heads in one community but not in another community. Extension project proposals were initially crafted and were based on the existing advocacy programs of Saint Mary's University.

*Keywords:* basic services, problems, resources, socio-demographic, socio-economic



#### **IPOS-LMCDAC-4**

### **Implementation of CES Sustainability Framework: The Case of a Catholic Philippine Higher Education Institution**

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This study used the mixed-methods approach to evaluate the extent and challenges of implementing Saint Mary's University's community extension sustainability framework. Findings revealed that all seven key attributes of sustainable community extension services were occasionally implemented. The major challenges in implementing community extension services were lack of coordination and linkages, inadequate resources, indifference towards extension services, and inconsistent precedence on clear guidelines and training. Quantitative and qualitative findings were bases on formulating a sustainable community extension framework and model.

*Keywords:* coordination, extension, guidelines, key attributes, model, linkages, resources

**IPOS-ODSAS-5****Saint Mary's University Student Services S.Y. 2019-2020: A Student Evaluation**

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For the University to be able to respond to all of the challenges, an internal assessment of the different services provided by the university as mandated by the Commission on Higher Education (CHED) must be evaluated to determine the level of satisfaction of the students and to identify useful recommendations from them to improve student services programs. This study employed the descriptive research design by way of the survey method. It employed a survey questionnaire that underwent validation. The contents of the survey questionnaire were adopted from CMO no. 9 series of 2013, outlining the basic requirements for each student service. Due to the pandemic, the questionnaire was floated to the respondents online through Google forms. The total participants were 867 higher-year tertiary students. Findings revealed that major item indicators under three major programs, namely: Student Welfare Programs, Student Development Programs, and Institutional Student Programs and Services, were rated as satisfactory. Generally, the students were satisfied with the student services provided by the university. The results pointed to the fact that Saint Mary's University delivered what is expected for the welfare and development of the student body. This could be brought about by living its vision to produce individuals exemplifying excellence, innovation, and Christ's mission in Communion with God and others. Still, the university must further strive to improve and develop the aforesaid student services.

**Keywords:** Institutional Student Programs and Services,  
Student Development Programs, and Student  
Welfare Programs

**IPOS-STEh-6**

**Online Learning Experiences in a Private Catholic  
University: Basis for a Compassionate  
Teaching Framework**

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Many higher educational institutions shifted to using a Learning Management System to deliver quality content and instruction in the “new normal.” However, the digital divide, individual differences, and economic situations created difficulties in how online classes can be effectively adapted and implemented. Hence, this paper describes the difficulties in the learning experiences of 73 students of Saint Mary’s University for the Second Semester and Midyear Term 2019-2020 and develops a teaching framework that will guide the instructors in helping students cope with the challenges of online learning in the SMU Learning Management System. Three categories of difficulties surfaced: pedagogical practices, learners’ psychology and health, and learning contexts. It was found that most students experienced difficulties in their learning contexts, such as accessibility to a good or stable Internet connection and prepaid load allowance. This was followed by their difficulties with the quality and difficulty of the learning activities provided by the instructors. Lastly, the mismatch of learning preferences and the quality of learning the students experience in the online learning environment. These findings prompted the development of the Compassionate Teaching framework for the First Semester of 2020-2021 to address these experiences in the online learning modality of the university through its Learning Management System. This framework aims to guide instructors in providing communication, clarity, connection, and care by analyzing and understanding learners and their contexts, showing kindness and understanding, and providing consideration and a helping hand toward more effective and successful student learning.

*Keywords:* distance education, e-learning, emergency remote learning, internet

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## COLLABORATIVE RESEARCH OF FACULTY MEMBERS WITH OTHER HEIS

### CRFM-01

#### **Knowledge, Practices, and Challenges of Library Practitioners on Abstracting**

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Access is the primary concern of a library; thus, an information retrieval tool like an abstract is as important as the Online Public Access Catalog. Abstracting then plays an important role in improving access to information that library users need. Librarians then perform this task primarily to guide the users in deciding whether an information resource will be consulted or not. The study utilized the descriptive method of research using a survey questionnaire to determine the level of knowledge and practices on the parts and types of abstracts and the challenges on abstracts a document surrogate encountered by library practitioners in selected parts of Northern Luzon, Philippines. The study found that the library practitioners exhibited a high knowledge and practice of abstracting, which could be attributed to their undergraduate studies, specifically in the major core subject, indexing and abstracting. However, they enumerated challenges such as 1) lack of time to carry out their abstracting

function; 2) lack of policies and procedures in abstracting; 3) lack of manpower to do the job; 4) lack of motivation to perform the task; and 5) abstract is not a concern of most faculty and students. Abstracts continue to be useful to the academic and research community, and that library practitioners must find time to create or innovate ways of abstracting important documents that are useful to their users.

*Keywords:* abstracting, access to information, document surrogates, information retrieval tools, library research tools, research needs



## **CRFM-02**

### **Digging the Issues and Concerns in Subject Access Towards Discoverability of Information and Resources**

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There is an information explosion in this computer age due to the rapid developments of information and communications technology. As a result, studies are quickly published because of faster printing and open-access publishing. With these, access to information and resources is somewhat compromised. These

collections are meaningless to educators, researchers, scholars, and other information users without access. Thus, this study prompted to determine the: 1) level of familiarity with the fundamental principles of subject cataloging, 2) level of usage familiarity with a) grammar and code of relationships, b) types of subject headings and subdivisions, and c) authority tools; and 3) level of issues or concerns of librarians in assigning subject headings. On the level of familiarity with the fundamental principles of subject cataloging, findings revealed that the respondents were: 1) very familiar with the main objectives of subject cataloging, that is, to list in one uniform word or phrase all the materials on a given subject that a library has in its collection, and control the terms to be used in assigning subjects to materials; 2) extremely familiar on the first and last steps in the subject analysis, that is, to examine first the library material at hand, and to use the decided keywords to go over the subject authority lists to identify appropriate headings; and very familiar on deciding on several keywords that could represent the subject; and 3) very familiar with the basic principles of subject headings. On the level of usage familiarity of grammar and code of relationships, types of subject headings, and authority tools, the study affirmed that the respondents were: 1) very familiar with assigning grammar of subject headings; 2) very familiar with the grammar, and code of relationships of subject headings; and 3) extremely familiar with the names of persons/corporations/meetings, and topical subject headings. On the level of issues or concerns of librarians in assigning subject headings, the respondents were moderately concerned or had issues with all the different aspects of assigning subject headings. To efficiently and effectively retrieve information, issues and concerns in subject access should be addressed by catalogers.

*Keywords:* authority tools, cataloging, information retrieval, keywords, subject headings, technical services



**CRFM-03**

**Design of a Customized Enterprise Resource Planning System for a Private Basic Education School**

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Enterprise Resource Planning (ERP) system for a private basic education school focuses on analyzing the school's resources to aid the administration in developing better economic plans and decisions. The ERP system integrates admission, enrolment, billing, inventory, human resource, and attendance systems through a shared database that supports multiple functions and allows the generation of analytics of resources that different departments can use to support them in both strategic and operational plans. The system analyses the interplay of school operations with resource utilization. It provides reports to enhance supplies, human resources, finance, and other assets process flow. The business intelligence components of the system enable real-time, interactive access, analysis, and visualization of enrolment trends, employee turnover rate, school supplies reorder point, school services budget allocation, the status of school facilities, breakeven point analysis, aging of unpaid accounts and real-time gate attendance monitoring of students and employees. Developmental research was used in developing the system using Rapid application development (RAD) in agile project management. The study was piloted in the School of Our Lady of La Salette, Inc., a private basic education school. The overall compliance of the developed system to the International Organization for Standardization (ISO) 25010 Software Quality Standards was to a very great extent. The developed Customized ERP system in this study can provide a

useful tool for the private basic education institution to support the administrators in effectively managing economic resources.

*Keywords:* enterprise resource planning, ERP model, integrated system, rapid application development, ISO 25010 software quality standards



#### **CRFM-04**

### **Metacognitive Strategies on Reading English Texts of ESL Freshmen: A Sequential Explanatory Mixed Design**

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The application of metacognitive strategies has been found to play a crucial role in reading comprehension. Hence, a sequential explanatory design method was undertaken using metacognitive strategies among 403 Filipino ESL freshman students taking General English Course. Findings revealed that the participants demonstrated a high metacognitive awareness of reading strategies while reading academic texts in English, with problem-solving strategies as their prime choice, followed by support and global strategies. Among the different metacognitive reading strategies, reading to increase understanding and highlighting to help them remember important information from the text were of high usage. There was a significant difference in the freshman students' metacognitive strategies when grouped according to their field of study. Among the eight groups of participants, six groups of students used metacognitive strategies on a high level. Students enrolled in Medical Laboratory Science used the MARSII extensively. In contrast, students in the field of criminology used metacognitive strategies on a significantly lower frequency level when compared to the other fields. Drawing upon the findings of this study, further research on the factors influencing the

differences in the employment of metacognitive reading strategies among readers to be undertaken.

*Keywords:* English texts, ESL students, general education, metacognitive reading strategy



### **CRFM-05**

#### **How Far Have We Gone? Integration of Intercultural Language Learning Principles in Philippine ESL Classrooms**

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Intercultural education is firmly rooted in the notion that language and culture are intrinsically linked. Several studies have looked into the importance of understanding different languages and cultures in language teaching; however, studies on integrating principles of intercultural language learning (IcLL) in Philippine ESL classrooms seem to be lacking. This is what the article addresses as it looks into the extent of integration of IcLL principles in two higher educational institutions in Region 2, Cagayan Valley, Northern Philippines. Anchored on the principles of IcLL and through the employment of a survey to elicit the language teachers' responses regarding the integration of IcLL principles in language classrooms, results revealed that teachers perceived IcLL to be integrated into their classrooms to a great extent. Specifically, the principles of active construction and social interaction were integrated to a very high extent. In contrast, the principles of making connections, reflection, and responsibility were perceived to be integrated to a high extent. As regards classroom activities, the teachers favored the employment of discussions, lectures, writing tasks, oral reports, role plays, small group tasks, simulations or skits, and collaborative learning activities in transmitting the target culture.

*Keywords:* intercultural education, intercultural language, learning language teaching



**CRFM-06**

**Characterizing the Language Features and Rhetorical Moves of Argumentative Essays Written by Filipino ESL Senior High School Writers**

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This study presented Filipino ESL senior high school students' strengths and weaknesses in writing an argumentative essay. In the context of an institution in the Philippines where English is used as a second language by learners with varied L1, the learners are required to write in academic English. This study aimed to identify the language features and the rhetorical moves of the argumentative essays using Hyland's model (1990). Analyzing the students' essays as a requirement in the academe across disciplines could provide appropriate scaffolding in guiding Filipino ESL writers. The original essays written within an hour by 51 (from 108) Filipino ESL senior high school writers were encoded and processed using the Antconc software to identify the language features that characterize the essays. The researcher coded the essays, and an inter-coder verified the analysis concerning the stages/parts and the rhetorical moves found in the essays. The top three most commonly used verbs in the argumentative essays of Filipino ESL writers of English are non-action verbs—*is*, *are*, and *have*. In writing argumentative essays, the Filipino ESL senior high school writers of English lacked lexical verbs at the lexical level and the thesis and conclusion parts at the discourse level. They were familiar with the argument but lacked citations to support their claims.

*Keywords:* argumentative essay, corpus analysis, language features, rhetorical moves

**Gutierrez, M.**

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