International Student Research Congress

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2nd International Student Research Congress (ISRC) 2025

"Research transformational dynamics: Forming a community of life-long learners"

January 16, 2025 • Hybrid Conference

BOOK OF ABSTRACTS

The International Student Research Congress series is published annually.

For more information, visit the website **https://iiari.org/conference/isrc.**

Aims and Scope

The dynamic research environment requires diverse generational researchers. Hence, the International Student Research Congress provides a platform for the next generation student-researchers around the world to connect, collaborate and learn from multidisciplinary research outputs. It fosters research culture and academic excellence to high school and undergraduate (technical/vocational, college and university) students.

Objectives

The conference aims to:

- Provide a platform for the high school and undergraduate research outputs;
- Continuously develop strong research culture among students;
- Enhance free and accessible knowledge sharing through open access publication;
- Educate the community of scholars through updates on current topics and issues;
- Foster collaboration among student-researchers around the globe; and
- Develop camaraderie among junior fellows.

Conference Tracks

1. Education

- Educational management and leadership;
- Current trends and issues on education and educational management;
- Curriculum development, teaching and learning pedagogies, assessment and student cognitive development;
- Social issues relevant to the societal and educational development; and
- Other topics on educational research.

2. Humanities and Social Sciences

- Law and Politics;
- Philosophy and Religion;
- Geography and Anthropology;
- Communication and Modern Languages;
- Ancient and Modern Literature;
- Arts and Art Appreciation;
- Humanities and Human Behavior;
- Economic, social and environmental issues;
- Psychology and learning; and
- Other topics on social sciences.

3. Science, Technology, Engineering and Mathematics

- Science, applied science and science education;
- Technology, technological innovation and technical education;
- Engineering, engineering design and development and engineering education;
- Mathematics, applied mathematics and mathematics education; and
- Other topics on science, technology, engineering and mathematics.

4. Business, Management and Accounting

- Business, management and accounting education;
- Hospitality and tourism, online commerce, transportation and communication and agriculture;
- Entrepreneurship, entrepreneurial development and business management;
- Applied concepts of management, human resource, marketing, and operations;
- The industry and industrial revolution 4.0;
- Management accounting, financial accounting, financial reporting systems and corporate communication to external users' decision-making;
- Sustainability accounting and corporate integrated reporting system;
- Corporate finance with the view of investment, financing decision making, and financial management;
- Financial markets and institutions in line with banking, insurance and risk management, and real estate;
- International finance including financial management;
- Strategic management and leadership; and
- Other topics on business management and accounting.

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Research: The value of academic and industry research is at the forefront. The organization upholds quality research through rigorous peer review process.

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Training: The training for professionals is a continuous practice. The organization provides the venue for continuous training through international collaboration that multiplies research conferences, workshops and symposia and sharing of best industry practices.

Community Service: The concept of 'pay it forward' emulates in the organization. It extends a small share in the community development through various forms of outreach programs.

Mission

A premier industry and academic collaborative organization upholding the power of research and education to a more informed and intellectual community of scholars.

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IIARI aims to be at the forefront of research and education transcending post-millennial boundaries through collaborative and dynamic strategies.

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Education Track

Utilization of Avaterrific Quest in enhancing reading comprehension skills of Grade 8 students

Helaena S. Velasco, John Renden A. Laudencia, Aaron B. Artillaga, Lemuel C. Cabison & Edilene Mhai G. Goting

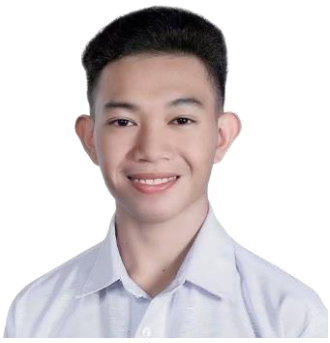
Bachelor of Secondary Education Major in English Students, Laguna University, Philippines

ABSTRACT

This study evaluated the reading comprehension skills of Grade 8 students at Masapang Integrated National High School using "Avaterrific Quest," a board game designed by the researchers. Employing a quantitative experimental design, the study compared two groups: Jacinto, which received traditional instruction, and Archimedes, which engaged in gamified learning. Pre-tests and post-tests provided numerical data for statistical analysis, assessing the effectiveness of each method. Results indicated that the traditional approach improved Jacinto's mean scores from 21.93 (very limited proficiency) to 36.87 (limited proficiency). In contrast, Archimedes, utilizing Avaterrific Quest, showed a more significant increase, with scores rising from 38.44 (limited proficiency) to 53.58 (proficient). While both methods produced substantial gains, the gamified approach led to greater improvements, highlighting the advantages of innovative teaching strategies. The findings suggest that while traditional instruction positively impacted reading comprehension, the use of gamified learning not only enhanced student engagement but also yielded more pronounced improvements in comprehension skills. Overall, this study underscores the potential of gamified approaches in educational settings to effectively boost learning outcomes compared to conventional methods.

Keywords: Avaterrific Quest, reading, reading comprehension, gamification

About the presenter:



John Renden A. Laudencia is a fourth-year English Major student at the College of Education, Laguna University. He graduated with High Honors from Laguna University Senior High School in 2021. During his time at Masapang Integrated National High School, he served as Feature Editor of 'The Verdant' (2018-2019) and competed in the English Sports Writing category at the Division Schools Press Conference (DSPC) 2018. He has held significant leadership positions, including Vice President for Planning of the COEd Mentors for the academic year 2023-2024. He is currently the Editor-in-Chief of Laguna University Frontier and the President of the Experiential Learning Courses. He received several awards and recognitions including Dean's Lister for AY 2021-2022 and AY 2023-2024 and 1st Place in Public Speaking Competition 2023.

Developing soft skills of students through multimodal instruction by pre-service teachers in a state university

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ABSTRACT

Given the low ranking of Filipino children in reading, science, and mathematics at the latest 2022 Programme for International Student Assessment and also to add on lacking empirical evidence about multimodal instruction of teachers and the development of soft skills of students, this descriptive analysis study will look into the transformative impact of multimodal instruction on the development of soft skills of students such as communication, flexibility, and leadership. It will also track the influence of soft skills on student outcomes such as employability, academic success, and personal growth. A 5-point Likert Scale was utilized to establish a clear conclusion of the variables. Adaptive survey questionnaires were used to effectively assess and monitor the data given by the respondents. Results of the study showed that all of the variables met the highest mean, strongly agreeing with statements from each variable. Thus, it concludes that multimodal instruction paves the path for attaining soft skills, likewise, soft skills highly influence student outcomes such as employability, academic success, and personal growth. Moreover, it was found out that pre-service teachers prefer to use videos and animations, as their main multimodal instruction, to illustrate complex concepts visually. Next is incorporating visual diagrams, mind maps, or conceptual maps, and third but not least, applying hands-on activities and experiments for tactile learners.

Keywords: multimodal instruction, soft skills, pre-service teachers, transformative impact

About the presenter:

John Marvin D. Renacido is an undergraduate at the College of Teacher Education (CTE), Aklan State University (ASU), Banga, Aklan, pursuing a bachelor's degree in secondary education (BSED) specializing in English language. He currently works as a pre-service teacher at the ASU Laboratory High School (LHS). He serves as the Community Affairs Director of Ro Sueo Publication (RSP), the official publication of the CTE students, and a creative story writer of the Magistrate Art Organization (MAO), an independent organization for student-artists within the college. While he sits as the BSED Representative of the Young Educators' Society (YES), a leadership organization for the student body of the department, and Chair for Public Relations of the ASU Banga Athletic and Sports Association (ASAA), he also contributes as a staff writer under their media and documentation committees. Likewise, he is an Editorial Board Member of the IIARI ISSR, and a grand finalist of the 2024 International Luminary Award (ILA) and the 2024 International Research Congress (IRC).

Comparative study between Pomodoro and Flow method study techniques among college students

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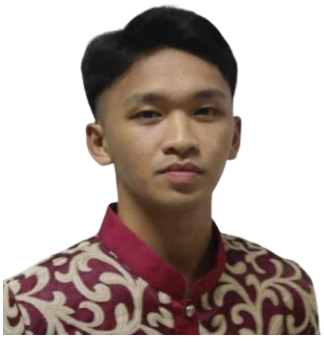
ABSTRACT

This quantitative comparative research aimed to compare the Pomodoro and the Flow Method as study techniques in terms of students' preferences and effectiveness by examining the strengths, weaknesses, and gaps of both methods related to application in academic tasks. Data were collected from 108 students representing various programs at a state university in northern Panay Island, Philippines using a survey questionnaire that covered demographics, preferences, perceived efficiency, and limitations of each technique. Findings showed that 55.6% of respondents preferred the Pomodoro technique for its structured intervals, stress-reducing breaks, and productivity tracking, although its rigid scheduling was noted as a limitation. Meanwhile, 44.4% favored the Flow Method for its immersive focus and task engagement, but it was less effective when motivation was low. Both techniques demonstrated strengths in enhancing focus and organization but showed unique limitations depending on user preferences and task complexity. The study's reliance on self-reported data from a single institution may limit the generalizability of the results. Future research could involve longitudinal studies and more diverse populations to validate the findings. These insights can help students choose study techniques that align with their needs and academic goals.

Keywords: Pomodoro technique, Flow method, academic tasks, student preferences, task complexity

About the presenter:

Emmanuel L. Mayordo is a third year undergraduate student under the College of Arts and Sciences (CAS) at the Aklan State University, Banga, Aklan, Philippines, pursuing Bachelor of Arts in Communication and currently part of the Blooms Publication - the official student publication of the CAS, a Media Liaison at Kasining Folkloric Troupe, and Chair for Planning and Logistics of the ASU Banga Athletic and Sports Association (ASAA).



Superbulary for Grade 3 English vocabulary skills enhancement

Anne Cristelle L. Villanueva, Leona R. Esguerra, Marvin Z. Francia, Angel Cristalyn C. Gabinete & Trisha Mae T. Ayala

Undergraduate Students at Laguna University

ABSTRACT

Despite the recognized importance of vocabulary development in grade 3 learners, there exists a significant gap in understanding the specific challenges these students face in enhancing their vocabulary skills. Limited empirical research has been conducted to identify the underlying reasons why grade 3 learners struggle with vocabulary acquisition and retention. Furthermore, there is a lack of research examining the effectiveness of multimedia tools, such as the Superbulary education video and education booklet, in addressing these challenges and improving vocabulary skills in this demographic. This study evaluated the impact of the Superbulary tool, comprising a self-made video and booklet, on enhancing English vocabulary skills among Grade 3 learners during the 2024-2025 school year. The study employed a quantitative approach, utilizing survey questionnaires, pre-tests, and post-tests to measure students' vocabulary proficiency before and after implementing the Superbulary tool. Findings revealed a significant improvement in learners' ability to understand, recall, and use new vocabulary words, as demonstrated by increased post-test scores compared to pre-test results. The statistical evidence underscores the Superbulary tool's effectiveness in improving vocabulary skills, which highlights its potential as a valuable resource for language learning. Therefore, it is recommended to incorporate interactive vocabulary games into the classroom routine to make learning enjoyable and engaging. Additionally, multimedia tools such as animated videos or apps can be utilized to create a dynamic learning experience. Encouraging group activities, such as peer discussions or word-building exercises, can also help reinforce vocabulary skills effectively.

Keywords: Superbulary tool, Self-made video, Booklet, English vocabulary skills, pre-test and post-test, quantitative approach

About the presenters:

Anne Cristelle L. Villanueva, Leona R. Esguerra, Marvin Z. Francia, Angel Cristalyn C. Gabinete, and **Trisha Mae T. Ayala** are 4th-year Bachelor of Elementary Education students and researchers at Laguna University. They share a commitment to advancing innovative teaching practices, which is exemplified in their research, "Superbulary for Grade 3 English Vocabulary Skills Enhancement."

Together, they developed the Superbulary tool, a multimedia-based learning resource comprising an educational video and booklet. This tool was specifically designed to address vocabulary acquisition challenges among Grade 3 learners, showcasing the authors' creativity and dedication to evidence-based approaches in education.

Their work underscores the importance of integrating multimedia tools into language learning to create engaging and effective classroom experiences. By employing modern methodologies and practical solutions, the researchers aim to

contribute meaningfully to the field of elementary education, inspiring both students and educators alike.

As aspiring teachers, the authors are dedicated to bridging gaps in language education and fostering inclusive, dynamic learning environments. The research reflects a shared vision of promoting innovative strategies that enhance teaching and learning, ultimately empowering young learners to succeed."

READIFY: Interactive e-story book to improve Grade 5 learner's English reading comprehension skill

Angelo B. Arellano, Mitchie Mae L. Barrios, Honey Mist A. Salvador, Romelyn D. Ramos & Rosemarie S. Badillo

Undergraduate Students, Laguna University

ABSTRACT

English reading comprehension is a core competency that underpins significant contribution to the advancement of academic skills in all subjects. This study determined the impact of interactive e-storybooks conceptualized as readily accessible digital stories to improve, foster, and yields reader's comprehension (READIFY) enhancing Grade 5 learners' English reading comprehension skills at Calumpang Elementary School SY 2024-2025. The specific objectives include evaluating students' English reading comprehension before and after implementing the READIFY, assessing the effectiveness of the program, and examining the difference in students' comprehension skill levels pre-test and post-test. The study utilized a quantitative approach, collecting data from survey questionnaires and pre-test and post-test assessments. The findings from this research provide valuable insights into the effectiveness of the READIFY in improving Grade 5 students' English comprehension skills. Statistical tools such as mean and standard deviation were used to determine the material's efficiency in improving the learners' English reading comprehension skills. A T-test was employed to determine if there is a significant difference between the students' level of English reading comprehension skills before and after the intervention. The following result was found: The READIFY intervention led to significantly enhanced reading comprehension skills among Grade 5 pupils. Pre-test scores (81.2%) indicated an instructional level, while post-test scores (64.7%) demonstrated an independent level, signifying a marked improvement in their ability to read and understand the material. The statistical evidence supports the program's efficacy and highlights its potential as a valuable tool for educators seeking to enhance language learning outcomes.

Keywords: interactive, e-storybooks, English reading, comprehension skills, enhance, grade 5 learners

About the presenters:

Angelo B. Arellano, Mitchie Mae L. Barrios, Honey Mist A. Salvador, Romelyn D. Ramos and **Rosemarie S. Badillo** are from the College of Education at Laguna University taking up Bachelor of Elementary Education (BEED 4th Year).

This study was conducted as part of the classroom-based action research aimed to address the challenges and opportunities brought by the current generation's learning environment. The study holds a pivotal role in the realm of education in this generation. READIFY is a platform bridging literacy gaps in the digital age considering that tons of students struggle in one of foundational skill for literacy such as reading comprehension. The integration of READIFY: Interactive E-storybooks addresses this gap by utilizing technology as a medium to captivate and engage the modern

learners. With varying literacy level, READIFY provides students a spiral reading materials which are to their reading pace and comprehension ability. Moreover, reading comprehension is not merely an academic skill; it is also a life skill that an individual can carry in application to daily lives. This action research cultivates lifelong reading and instill its utmost importance for lifelong learning and success. Lastly, READIFY are beneficial for educators, equipping with modern pedagogical tool, a strategy to meet the demands of 21st-century teaching and learning, an innovative resources fostering love of reading and cater individual needs for effective learning environment.

Utilizing flipped classroom in enhancing problem solving skills in numbers and number sense of student athletes in Pila Central Elementary School

Dawn Camille M. Dungo, Mariefe P. Lara, Lovelyn Ashley H. Olipano, Mere Sophia Angeline R. Reyes & Mary Grace V. Sanchez

Undergraduate Students at Laguna University

ABSTRACT

This study explores the effectiveness of a flipped classroom approach in enhancing problem-solving skills in numbers and number sense among student-athletes at Pila Elementary School. The flipped classroom model, which inverts traditional teaching methods by delivering instructional content outside of class and engaging students in interactive activities during class, was implemented to address the unique scheduling challenges faced by student-athletes. Pre-recorded video lessons and online resources were provided for out-of-class learning. At the same time, in-class sessions focused on collaborative problem-solving and practical applications of numeracy and number sense. The intervention aimed to improve students' analytical abilities, foster deeper understanding, and boost academic performance. Data were collected through pre-tests and post-tests. The results indicated significant improvements in problem-solving skills and overall engagement with numbers and number sense content among student-athletes. The study concludes that the flipped classroom model is an effective instructional strategy for enhancing the learning outcomes of student-athletes in elementary school settings. Data from pre-tests and post-tests showed significant improvements in students' problem-solving skills and engagement. Before the intervention, the mean score was 11.52 (38.40%), indicating "Below average" skills. After the intervention, the mean score rose to 26.81 (89.37%), indicating "Good" skills. The t-value of -27.22 confirmed significant improvement. The study concludes that the flipped classroom model effectively enhances student-athletes learning outcomes in elementary math.

Keywords: sampling, statistics, HUMSS, mathematics, learning guide

About the presenters:

Dawn Camille M. Dungo, Mariefe P. Lara, Lovelyn Ashley H. Olipano, Mere Sophia Angeline R. Reyes, and **Mary Grace V. Sanchez** are students from Laguna University, currently pursuing a degree in Education. As researchers, they are deeply committed to exploring innovative teaching strategies to address the unique needs of students. The thesis, titled "Utilizing Flipped Classroom in Enhancing Problem-Solving Skills in 'Numbers and Number Sense' of Student Athletes in Pila Central Elementary School," reflects their passion for finding effective ways to support both academic and athletic growth in young learners.

Through this research, they aim to assess the potential of the flipped classroom model to improve problem-solving skills in mathematics, particularly in the area of numbers and number sense. They believe that by engaging students in a more active and student-centered learning environment, they can help them develop stronger critical thinking and

problem-solving abilities. As future educators, they are determined to contribute to the development of practical teaching methods that promote inclusivity, enhance student engagement, and support the academic success of student-athletes.

APeriod Go: Educational board game for students' engagement in Araling Panlipunan 5

Ma. Lourdes M. Adizas, Michelle O. Coraza, Shayne A. dela Cruz, Anthonette Lyn C. Delicano & Dana Angela B. Javier

Undergraduate students, Laguna University

ABSTRACT

Recently, there has been a growing interest in utilizing game-based learning tools to enhance student engagement and educational outcomes. This study explores the use of APeriod Go, an educational board game, to enhance student engagement in Araling Panlipunan 5 at Pila Central Elementary School. The study aimed to determine if the game could improve student engagement and learning outcomes in a subject often perceived as uninteresting. A quantitative research design was employed, utilizing a Likert Scale-based survey to measure student engagement levels before and after implementing the board game. The sample consisted of fifty Grade 5 learners from two heterogeneous sections, representing a diverse range of academic abilities. The pre-survey showed moderate student engagement, while the post-survey increased, indicating consistent active participation in Araling Panlipunan. The difference between the pre-survey and post-survey was statistically significant, demonstrating the intervention's enhancement in the engagement of students towards Araling Panlipunan. Integration of innovative teaching aids like "APeriod Go" into the curriculum expands the integration of this educational board game into other grade levels and subjects leading towards the Student-Led Game Development. The research highlights the importance of creating engaging educational experiences to make learning more meaningful and enjoyable for students. Future research could explore the long-term effects of such interventions and their applicability across various educational contexts and subjects.

Keywords: APeriod Go, engagement level, game-based, gamification

About the presenters:

Ma. Lourdes M. Adizas, Michelle O. Coraza, Shayne A. dela Cruz, Anthonette Lyn C. Delicano, and **Dana Angela B. Javier** are 4th-year undergraduate students of the College of Education taking up the program of Bachelor of Elementary Education at Laguna University

They are thrilled to present the innovative study titled "APeriod Go: Educational Board Game for Students' Engagement in Araling Panlipunan 5." They explored how game-based learning can boost student engagement. The research at Pila Central Elementary School showed that the board game "APeriod Go" significantly enhances learning experiences for Grade 5 students, making lessons more interactive and enjoyable.

They believe that integrating such educational tools can revolutionize traditional teaching methods and inspire more engaging learning environments. The work underscores the vital role of innovative teaching aids in today's education system.

Exploring the influence of multiple intelligence on strand selection of graduating junior high school students

Jasmine Nimfa L. Lunar, Shanelle A. Anggong, Kerby Mae J. Calapati, Samantha Beatriz A. Esguerra, Gayle Jaira M. Guia, Calyx Orioste, Danerick Craig T. Pasco & Alijah Kristoff W. Pavino

Grade 11 students, San Pablo Colleges

ABSTRACT

This study explores the influence of multiple intelligences on strand selection among graduating junior high school students. Employing descriptive research design, survey results show that students exhibit diverse intelligences, with a notable prevalence of interpersonal and logical intelligences. Interpersonal intelligence, characterized by self-awareness and understanding of the human condition, emerges as the most common intelligence type among students, influencing their personal and career development. Additionally, the study identifies preferences for various SHS strands, with STEM emerging as the most favored choice, followed by HUMSS. Statistical analysis demonstrates a significant association between students' Multiple Intelligences and their preferred SHS strand selection, rejecting the null hypothesis. This highlights the impact of intelligences on educational decision-making and underscores the importance of personalized learning approaches aligned with cognitive science principles. These insights contribute to enhancing academic achievement and supporting students in making informed educational and career choices based on their individual intelligences and strengths.

Keywords: multiple intelligences, SHS track preference, strand selection, junior high school

About the presenter:

Jasmine Nimfa L. Lunar is a vibrant Grade 11 HUMSS student at San Pablo Colleges, known for her outstanding academic performance and creative talents. With a consistent track record as an honor student, Jasmine exemplifies diligence and passion in her studies. She thrives not only in academics but also as an active member of SATASIKA, the esteemed Theatre Group at her school. Outside of academics, Jasmine indulges in several hobbies that reflect her artistic spirit. She has a penchant for singing, dancing, and composing songs, demonstrating a deep connection to the performing arts.

Junior high school students' satisfaction and preferences on elective courses: Inputs to curriculum review

Joviene Ziela L. Lunar, Terrence Asher Baronia, Anne Felicity Cauyan, Ashanti Leigh Exconde, Pia Alexandra Xena Funtanilla, Angel Ann Garingan, Neiljosh Guevarra & Emmanuel Miguel Ysulan

Grade 11 students, San Pablo Colleges

ABSTRACT

This study investigates junior high school students' satisfaction with elective courses and their preferences, drawing on Self-Determination Theory (SDT) by Deci and Ryan (1985). Employing a descriptive research design, this quantitative research study involved a survey administered to 310 students selected through stratified random sampling. The findings reveal that students express high satisfaction with elective subjects such as Computer, Speech, Statistics, and Research, with Journalism receiving moderate satisfaction. Students perceive Computer, Speech, and Statistics as highly important, while Journalism and Research are considered moderately important in their academic journey. The top three preferred alternative elective subjects among students are Visual Arts, Foreign Languages, and Performing Arts. The conclusions drawn highlight the importance of offering diverse elective subjects that align with students' interests to enhance engagement and satisfaction with the curriculum. Integrating practical life skills into core academic subjects, fostering interdisciplinary connections, and expanding language offerings emerged as key curricular implications. Furthermore, emphasizing critical thinking, problem-solving, and social-emotional learning within elective courses supports holistic student development. This study contributes to educational policy and curriculum development by providing actionable insights into students' elective preferences and satisfaction levels, guiding efforts to enhance the junior high school curriculum.

Keywords: elective courses, curricular implications, junior high school, San Pablo Colleges

About the presenter:

Joviene Ziela L. Lunar is a dynamic Grade 11 student of San Pablo Colleges known for her exceptional academic achievements and athletic prowess. As a consistent honor student, she exemplifies dedication and excellence in her studies, particularly excelling in Mathematics and Science. Her academic success is matched by her passion for sports, as she contributes actively to her school's volleyball varsity team. Off the court and outside the classroom, she indulges in a variety of hobbies that showcase her diverse interests. She has a keen mind for puzzles and logic.

Translated impact on the integration of gamification to students' learning engagement

Shena Mae C. Alburo, Cyroz A. Montibon & Rhio Mae R. Petrasanta

Science, Technology, Engineering and Mathematics students, Sta. Catalina National High School- Senior High School Department, Candelaria Quezon, Philippines

ABSTRACT

This study explores the perceived impacts of integrating gamification into science education and examines how these impacts translate into and enhance student engagement and understanding of scientific concepts. Using a phenomenological approach, data were collected from 20 students through open-ended questionnaires to gain insights into their experiences with gamification. The study followed rigorous procedures, including question validation, securing school authority permissions, and systematic data analysis. Findings reveal that gamified elements, such as point scoring, significantly boost motivation and make learning more engaging. Gamification also fosters critical thinking by prompting students to analyze and apply complex scientific concepts, enhances problem-solving through strategic, competitive learning, and promotes collaboration by creating a community-driven educational experience. These perceived benefits lead to greater participation, interactive engagement, and student autonomy, cultivating intrinsic motivation and positive attitudes toward science learning. The study recommends future research on comparative gamification strategies and encourages educators to adopt these techniques to improve student engagement and academic outcomes.

Keywords: science, gamification, learning engagement, motivation

About the presenter:

Shena Mae C. Alburo is a dedicated Science, Technology, Engineering, and Mathematics (STEM) student at Sta. Catalina National High School in Candelaria, Quezon, Philippines. Driven by a passion for scientific discovery and innovation, they are particularly interested in the fields of physics, engineering, and technology. They are also actively involved in science and reading clubs, demonstrating a strong commitment to problem-solving, critical thinking, and independent reading. This eagerness drives them to explore the potential of their academic journey, and the experiences gained in the STEM track continue to contribute to a more sustainable future.

Exploring science mnemonics: Enhancing retention skills of Grade VI students

Andrei C. Andaya, Cherry Jean E. Dizon, Shella Mae G. Masugbod, Joana M. Olivete & Raiza L. Samorin

Undergraduate students, Laguna University

ABSTRACT

Mnemonic devices aid in retaining scientific knowledge by simplifying complex concepts, stimulating curiosity, and engaging students through question-based learning, thereby enhancing their overall learning experience. This study aimed to investigate the effectiveness of mnemonic techniques in improving Grade VI students' retention skills in science at Caesar Z. Lanuza Elementary School. The study involved 40 Grade VI students selected through convenience sampling. A quantitative design with pre-test and post-test assessments measured retention skills before and after utilizing mnemonic devices. Results showed significant improvement, with mean scores rising from 15.25 to 22.95. The t-value of 31.64 confirmed statistical significance, highlighting mnemonics' potential in science education. Based on the conclusions drawn from the data, the study suggests that school utilizes mnemonic devices in science classrooms so that the students can learn more about it and be more excited to know more about how they can use different mnemonic devices to chunk different science content that can help them to enhance their retention skills. Future researchers may also consider the use of mnemonic devices in other subjects.

Keywords: explore, enhance, mnemonics, retention skills, science, devices

About the presenters:

Andrei Andaya, Cherry Jean Dizon, Shella Mae Masugbod, Joana Olivete, and **Raiza Samorin** are fourth-year Bachelor of Elementary Education students from Laguna University.

The research focuses on determining the effectiveness of mnemonics in improving memory and retention skills among Grade VI students. Mnemonics are creative memory aids that use patterns, acronyms, or associations to make information easier to remember. By exploring this strategy, they aim to assess its impact on students' ability to retain and recall lessons in a classroom setting.

As future educators, they recognize the importance of employing innovative teaching methods to address the diverse needs of learners. They believe that integrating mnemonics into lesson delivery can foster better engagement and understanding, particularly for students who struggle with traditional memorization techniques.

Through this study, they hope to provide valuable insights and practical suggestions for teachers, contributing to the improvement of instructional strategies in elementary education. Ultimately, their goal is to support both educators and learners in achieving academic success through effective, student-centered approaches."

Humanities & Social Sciences Track

Goals-based assessment of Pantawid Pamilyang Pilipino Program (4PS) in municipality in Laguna: Inputs for program enhancement

[1]Joehan Lyell V. Collantes, [1]Jordan Gaurano, [1]Yrish Joi P. Lumangaya, [1]Neil Donald S. Vita & [2]Nestor Jr. D. Malatag

4th Year College Student - AB Political Science, San Pablo Colleges; Master of Arts in Educational Management, San Pablo Colleges, College Professor, nestor.malatag@sanpablocolleges.edu.ph

ABSTRACT

This research assessed the effectiveness of the Pantawid Pamilyang Pilipino Program (4Ps) in a municipality in Laguna, emphasizing its social assistance and developmental objectives. A descriptive-quantitative methodology was used, with data gathered from 160 recipients using validated questionnaires, surpassing the initial sample of 156 out of 261. The statistical methods used are frequency distribution, mean analysis, multiple regression, and one-sample t-test in comparing perceived effectiveness with expected results. Key findings are that most of the respondents are older adults with high unemployment rates, low educational attainment, and low household income, which puts them in economic vulnerability. The 4Ps program address essential needs, particularly in health, education, and household safety. However, this has no impact on the program's sustainable financial outcomes, such as savings and debt reduction. The demographic characteristics of age, education, income, family size, and employment do not influence the respondents' assessments of the program. Challenges such as the limited availability of technology prevent full educational change. The A.S.E.N.S.O.: Alay sa Serbisyo, Edukasyon, Negosyo, at Suporta sa Oportunidad initiative to provide beneficiaries with practical and industry-relevant skills to address unemployment, promote entrepreneurship, and foster sustainable economic opportunities.

Keywords: 4Ps, cash assistance, social assistance, social development, unemployment, livelihood programs

About the presenter:

Yrish Joi P. Lumangaya is a 21-year-old fourth-year college student coming from Liliw, Laguna, Philippines, with a Bachelor of Arts in Political Science degree at San Pablo Colleges. She is a consistent Dean's Lister in all her years in college, and thus, always committed to academic excellence.

Ms. Lumangaya is passionate in governance, public service, and social development. Her passion for academics and active involvement in student organizations and groups speaks much about her dedication to education, research, and leadership as a thrust to become a great influence in the community. Critical thinking and the ability to speak well on public affairs make her eager to participate in the processes of nation-building and advocate change towards a better society.

The narratives of nurse corps and challenges faced in providing nursing interventions during Marawi siege

[1]Edrich Kyle P. Sismundo & [2]Maurice Villafranca

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ABSTRACT

The narratives of military nurses during the Civil War in Marawi City are often overlooked. While the public hears tales of brave soldiers, they tend to forget the crucial role of medicine and first aid. This study highlights the experiences of deployed military nurses and the challenges they faced during the Marawi siege. Using a descriptive phenomenological approach, the researcher sought to understand participants' behaviors from their perspectives. The study received approval from the Research Ethics Committee and the Office of the Chief Nurse of the Armed Forces of the Philippines (AFP). Confidentiality and anonymity measures were adhered to. Four participants were selected through criterion sampling, and data were collected via semi-structured interviews. Narratives were transcribed verbatim and analyzed thematically using Braun and Clarke's steps. Four (4) dominant themes emerged: (1) The Interplay of Key Roles in Times of Conflict, (2) Triad of Tactical Nursing, (3) Overcoming the Barriers, and (4) Echoes of Valor. The study reveals that military nurses play a vital role in providing essential medical support to injured personnel but face challenges like emotional stress, logistical issues, and limited resources. Despite these obstacles, they remain dedicated to their duty and proud to serve their country. The study faced challenges including a lack of literature on deployed military nurses' intervention challenges, complicating the literature review. Finding suitable key informants was also difficult, as was ensuring stable internet connectivity during online data collection. Additionally, the recency of participant memories posed a potential obstacle to gathering accurate and detailed information.

Keywords: military nurse, military, nurse corps, nursing, Marawi siege, AFP

About the presenter:

Edrich Kyle P. Sismundo is a 4th-year Bachelor of Science in Nursing student at Calayan Educational Foundation, Inc., and a proud consistent Dean's Lister. His passion for learning and excellence has guided him throughout his academic journey. Currently, he serves as the President of the Lamp Bearers Organization, the official student organization of the nursing department, after having the honor of being its Vice President.

His interest in research began during Senior High School years, where he developed a particular love for qualitative research. This passion has only grown stronger over time, fueled by the guidance and inspiration of his mentor, Maurice Villafranca, whom he deeply admired and look up to.

Balancing his studies with leadership responsibilities has taught him the importance of dedication, teamwork, and adaptability. He is committed to fostering an environment that supports his peers' growth and development while striving to make a meaningful contribution to the nursing field. He believes that as future healthcare professionals, they have the power to create a positive impact, and he is determined to lead by example and continue pursuing excellence in everything he does.

How do health and education influence poverty in rural communities? Evidence from non-linear econometric design

[1]Leomark Kevin D. Baldoza, [1]Tracy Boholano & [2]Emmanuel A. Onsay

[1]Bachelor of Science in Secondary Education Major in Social Science, Social Science Department, College of Education, Partido State University; [2]Partido Institute of Economics, College of Business and Management, Partido State University, Goa, Camarines Sur, emmanuel.onsay@parsu.edu.ph

ABSTRACT

This study examines the nexus of health, education, and poverty in the 19 communities of Sagñay, Camarines Sur, Philippines, employing non-linear econometric techniques. Analyzing extensive data, including education levels, health indicators, and poverty measures, the research uncovers significant correlations between lower educational attainment, adverse health outcomes, and heightened poverty rates. Notably, findings demonstrate that each additional year of education reduces the likelihood of poverty, with a 1% increase in educational attainment leading to a 0.5% decrease in poverty incidence. Moreover, maternal mortality emerges as a critical determinant of poverty, underscoring the need for targeted healthcare interventions. The study advocates for comprehensive poverty reduction strategies that prioritize investments in education and healthcare infrastructure, emphasizing the importance of Community-Based Monitoring Systems (CBMS) to inform evidence-based policy formulation and implementation. Through integrated approaches, policymakers can address systemic inequalities and foster sustainable development pathways, ensuring improved livelihoods for marginalized communities.

Keywords: poverty, health, education, socioeconomic status, non-linear econometric design, community-based monitoring systems

About the presenter:

Leomark Kevin D. Baldoza is a 21-year-old student at Partido State University, Goa, Camarines Sur from San Francisco, Abuyog Leyte. He is currently pursuing a Bachelor of Secondary Education. His major is in Social Studies. He completed elementary education at San Francisco Elementary School. He graduated from both Junior and Senior High School at Abuyog Academy Inc. Leomark holds notable positions as the incumbent student regent of Partido State University. He is also president of the Federation of Student Councils of Partido State University. Additionally, he is the president of the College of Education Student Councils. His philosophy centers around the belief that education serves as the foundation of leadership. To him, effective leadership entails being a role model. Leading and serving beyond expectations by upholding integrity and compassion. Drawing from his experiences in the College of Education Student Council, he has cultivated adaptable leadership skills. These experiences have not only shaped him into a well-rounded individual but have also equipped him with the necessary tools. He can lead effectively in today's dynamic landscape. Committed to student-centric decision-making and fostering inclusive environments, he advocates for equity and fairness, aiming to inspire others through his dedication and vision.

Combining ethnography and econometrics to cultivate culture and promote economic development: A mixed method analysis of upland communities in Mt. Isarog, Philippines

[1]Kristine Joy A. Saboco, [1]Kynne Renz B. Brizuela, [1]Romerose Pillos, [1]Jenievi S. Asia & [2]Emmanuel A. Onsay

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ABSTRACT

This study explores the complex interrelationship between cultural practices and economic development in the upland communities of Mt. Isarog in Goa, Camarines Sur, Philippines. Using a mixed methods approach by integrating ethnography, and econometric models, the study reveals how traditions influence economic activities, alleviate poverty, and improve community well-being. It analyzed the key dimensions of culture such as language, rituals, arts, and socio-economic characteristics with multidimensional econometric indicators to determine poverty and promote economic development. Research findings show that cultural aspects, including oral traditions and systems of kinship, determine much of the economic outcome, but socio-economic factors, such as education and family structure, fundamentally influence the development of a community. This study contributes to the understanding of integrating cultural preservation into economic policies for sustainable development by mapping cultural features and assessing their effects on economic activities. It shall ultimately benefit policymakers and community leaders who are part of the development strategy proposed in this study.

Keywords: mixed method, ethnography, econometrics, culture and traditions, economic development, poverty, Philippines

About the presenter:

Romeroze Pasno Pillos was born on October 21, 2000, in a lovely place called Pugay, San Jose, Camarines Sur. She's the fifth of seven siblings and currently lives in Boclod, San Jose, Camarines Sur. Romeroze finished her early schooling at Obias (Pugay) Elementary School and then moved on to San Jose National High School in Boclod, where she also did Senior High School in the TVL Cookery program. Now, she's a fourth-year college student at Partido State University in Goa, Camarines Sur, studying for a Bachelor of Science in Economics. Romeroze is really good at Cultural Economics, Cultural Analytics, and Mixed Methods—fancy ways of understanding how culture and economy mix together. She's learning a lot and working hard to make the most of her studies.

Identifying gender stereotypes of LGBTQ students at Sta. Catalina National High School

[1]Aaron H. Seradoy, [1]Precious Rhaiza Vergara, [1]Mary Joy Villagonzalo & [2]Chrizza Kaye R. Sotomayor

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ABSTRACT

This study explores and identifies the prevalent gender stereotypes experienced by LGBTQ students at Sta. Catalina National High School; specifically examines how these stereotypes manifest in daily interactions and impact students' school experiences. The research aims to understand the implications of gender stereotypes on LGBTQ students' self-esteem, personal development, and peer relationships. Using a qualitative research approach, the study conducted one-on-one interviews with LGBTQ students. It utilized a structured and validated interview protocol to collect detailed insights into their experiences and the institution's efforts to address these challenges. The analysis revealed that gender stereotypes negatively influence LGBTQ students' self-perception and hinder personal growth. Although the school's policies to reduce discrimination and bullying were generally beneficial, their effectiveness differed across individuals. The study acknowledges its limitations, including the small sample size and the specific school context, which may not be generalizable. Future research should consider more extensive, diverse samples across different educational environments to enhance understanding and inform the development of more effective support systems and anti-discrimination initiatives.

Keywords: gender stereotypes, LGBTQ, policies, personal development

About the presenters:

Aaron H. Seradoy is a Humanities and Social Science student at Sta. Catalina National High School. He is an academic achiever, a dedicated man and always want to achieve what he wants to achieve despite having struggles.

Mary Joy L. Villagonzalo is a Humanities and Social Science student at Sta. Catalina National High School. She is an academic achiever, a dedicated woman who keep pursuing her dreams despite having a lot of struggles.

Precious Rhaiza L. Vergara is a Humanities and Social Science student at Sta. Catalina National High School. She is an academic achiever, a dedicated woman and she is good in art.

Watt a woman!: A narrative inquiry of women's experiences and challenges in electrical engineering course during internship program

Jan Lian Alimagno, Gieannena Mae Adap, Freidrich Myron Parfan, David Dean Cape & Patrick Kian Briñas

STEM Senior High School students, San Pablo City Science Integrated High School

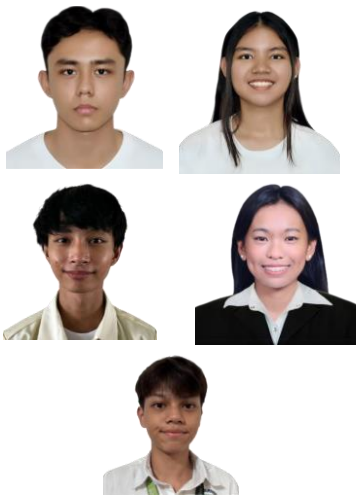
ABSTRACT

Gender bias and stereotypes remain prevalent in STEM, particularly in electrical engineering. This study used a narrative inquiry approach to examine the experiences of three female electrical engineering interns from San Pablo City, Laguna, Philippines, focusing on the challenges, opportunities, and coping strategies they encountered. By sharing their stories, the study highlighted the unique difficulties faced by these women and how they navigated professional environments, contributing to discussions on gender inequality in STEM. The findings revealed several challenges, including gender bias and heavy workloads. Nonetheless, the interns gained valuable skills, often supported by positive workplace environments and helpful supervisors. This contrasts with other studies suggesting that women leave engineering due to low pay or work-life balance issues; instead, participants here sought work-life balance and mentorship to manage challenges. Despite limited time and diverse experiences across different internships, the study provided insights into how women develop resilience and career growth within electrical engineering. These findings emphasize the need for inclusive practices and mentorship to support women in engineering, promoting a more equitable STEM field and advancing understanding of how women can thrive professionally despite structural barriers by societal norms.

Keywords: women, experiences, gender, bias, engineering, internship

About the presenters:

Jan Lian Alimagno, Gieannena Mae Adap, Freidrich Myron Parfan, David Dean Cape and **Patrick Kian Briñas** are Grade 12 senior high school students under Academic track, STEM strand, in San Pablo City Science Integrated High School.



Investigating the impact of social pension on the quality of life among senior citizens: Evidence from Randomized Control Trial (RTC) and Ordinal Regression Models

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ABSTRACT

This study investigates the impact of social pensions on the quality of life among senior citizens in San Jose (Partido), Camarines Sur, Philippines. Social Pension for Indigent Senior Citizens (SPISC) aims to mitigate poverty and inequality, as well as improve the well-being of the indigent senior citizens by providing financial assistance. However, challenges such as low benefit amounts, inflation, delays in payments, costly distribution methods, and errors in identifying eligible recipients might undermine the program's effectiveness. The study employed quantitative research design and gathered responses from 161 social pension beneficiaries and 161 non-beneficiaries. A modified WHOQOL-BREF survey questionnaire as well as a 5-point Likert scale was utilized, and the data were analyzed using descriptive statistics and ordinal logistic regression. Findings revealed that the senior citizens perceived their mental and emotional well-being, as well as their environmental well-being to be very high. Although, their satisfaction levels with physical well-being and financial circumstance were evaluated as moderate. Moreover, the ordinal regression analysis revealed that social pension has a positive impact on physical well-being as well as environmental well-being while negatively impacting mental well-being. Thus, it is recommended that the program adjusts the distribution schedule to monthly instead of quarterly, ensuring timely distribution through efficient methods, introducing complementary health programs, funds allocation to those who are waitlisted, and conducting regular evaluations of the program to satisfy the senior citizens' changing needs and improve their quality of life.

Keywords: social pension, senior citizens, quality of life, ordinal logistic regression, Philippines

About the presenter:

Nikko D. Pitallano, born on June 14, 2003, at Omeabel Memorial Medical Clinic in Goa, Camarines Sur, currently resides in Zone 5, Sitio Hicot, Cagaycay, Goa, Camarines Sur. He is an only child pursuing a Bachelor of Science in Economics at Partido State University in Goa, Camarines Sur. Nikko completed his secondary education at Goa National High School and his primary schooling at Cagaycay Elementary School. His diverse interests range from video games and drawing to grafting. Embracing the mantra, "No matter how hard or impossible it is, never lose sight of your goal," Nikko underscores the importance of perseverance in the face of challenges.

Knowledge and preventive measures towards leptospirosis among rice farmers in a selected barangay in Kalibo, Aklan

[1]Francine Marie O. Crisostomo, [1]Ma. Nicole M. Estrella, [1]Flos Carmeli R. Martinez, [1]Natalie Collins L. Melgarejo, [1]Ian Gillan A. Radislao & [2]Ma. Ellen C. Teston

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ABSTRACT

Leptospirosis, caused by Leptospira bacteria, remains a significant public health threat in disaster-prone areas like Aklan. This study assessed the level of knowledge and preventive measures toward leptospirosis among rice farmers in a barangay in Kalibo, Aklan. A quantitative correlational research design was employed, involving 185 registered rice farmers (80 males and 105 females). Data were collected through tests and structured survey questionnaires to evaluate farmers' knowledge and practices regarding leptospirosis transmission, symptoms, complications, risk factors, and prevention. Results revealed that respondents had a high level of knowledge about leptospirosis but showed gaps regarding its causative agent and associated complications. While adherence to preventive measures was generally high, areas for improvement included the consistent use of protective equipment and implementation of effective rodent control strategies. The study highlights the need for targeted interventions and public health strategies to address leptospirosis among vulnerable populations, such as rice farmers. Findings emphasized the importance of localized, evidence-based health education and preventive programs to improve knowledge dissemination and promote sustainable practices. Despite its scope limitations, the study provides insights to inform policies that enhance leptospirosis prevention in agricultural communities.

Keywords: leptospirosis, rice farmers, public health, preventive measures, knowledge assessment, Leptospira

About the presenter:

Ian Gillan A. Radislao is a dedicated fourth-year nursing student at Aklan State University (ASU) College of Nursing, renowned for his academic excellence, leadership, and service. A consistent honor student and Dean's Lister awardee, he was also recognized as a Finalist in the Ten Outstanding Students of Aklan State University (TOSA) Banga Main Campus A.Y 2023-2024. He balances rigorous academic pursuits with meaningful contributions as a student leader and joining volunteering activities all throughout his high school and college years. He also serves as an officer of the Student Nurses Organization (SNO) where he supports collaboration, professional development, and excellence while engaging actively in community outreach programs and health initiatives outside the university. Beyond the four corners of his classroom, he deeply values the Knowledge, Skills, and Attitude (KSA) every student nurse should embody, applying these core principles in real world settings through leadership, community service, and a steadfast commitment to excellence in both academic and clinical practice.

Exploring the benefits of Pantawid Pamilyang Pilipino Program (4PS) through the lens of criminology students in Davao Del Norte

[1]Aiman B. Cutin, [1]Laurence Joseph Geraldo, [1]Shekainah M. Papa, [1]Shiena Mae Lopez, [1]John Roi F. Basid & [2]Rommel Erwin Anca

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ABSTRACT

This study aims to explore the lived experiences of criminology students who are Pantawid Pamilyang Pilipino Program (4Ps) beneficiaries. It utilized a qualitative-phenomenological research design. With the help of an interview guide, the researcher gathered data from the purposively selected participants: seven for in-depth interviews and seven for focus group discussion. Using the thematic analysis, one category of the theme was generated: The lived experiences of 4P beneficiaries in Pantawid Pamilyang Pilipino Program: Enjoyed the educational assistance, sustained by the monetary aid, and left employment due to financial gains. Moreover, the insights drawn from the experiences of 4P beneficiaries are alleviate day-to-day needs; the need for budgeting is crucial; and ease process management. The research delves into the personal experiences of individuals and families who have been part of the program. The research also examines how the 4Ps have influenced their financial stability, educational opportunities, and overall quality of life. It also assesses the program's effectiveness in addressing poverty by analyzing the narratives of beneficiaries, the study provides insights into the strengths and experiences of the 4Ps, offering recommendations for enhancing the implementation and sustainability.

Keywords: 4Ps program, Pantawid Pamilyang Pilipino Program, poverty alleviation, law enforcement. community development, Davao del Norte, Region XI Philippines

About the presenter:

Bachelor of Science in Criminology student at ACES Polytechnic College, Inc. With a keen interest in law enforcement, she focuses on researching criminal justice systems and policing practices. This presentation reflects her dedication to advancing knowledge in the field of criminology.

The pursuit of logging: A logger's narrative

[1]Dave Marthy Cayod-ong, [2]Rommel Erwin Q. Anca, [1]Daven Ray Septimo, [1]Rhed Ryan Congzon, [1]Melvin Bersuela & [1]Reynaldo Matandac Jr.

[1]Student, BS in Criminology, ACES Polytechnic College, Inc.; PhD, Research Director, ACES Polytechnic College, Inc., rommelerwinanca@yahoo.com

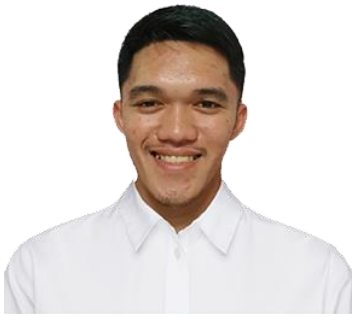
ABSTRACT

This study aimed to develop deeper understanding on the lived experience of Accredited loggers in Panabo City. Purposive sampling was used which included in-depth interview with seven Accredited loggers in Panabo City as participants. This study utilized qualitative research design through Interviews, Specifically, Phenomenological with the use of validated interview questionnaire. Using the thematic analysis, one category of the theme was generated: daunting task of loggers as characterized by the following experiences: dealing with price fluctuations, handling unpredictable customer demand and behavior and navigating a complicated regulatory process. The participant shared there challenges encountered as an accredited loggers in Panabo City such as follows: income instability, significant operational expenditures and supply-related log problems. Moreover, the insights drawn from coping mechanism of accredited loggers in Panabo City: Abide to Set Rules and Orders, Acclimate to Industry Norms and Rely on Divine Providence. To address these issues, experts recommend implementing forestry techniques, strengthening laws and enforcement, and encouraging community participation in decision-making.

Keywords: Pursuit of Logging, Logging Industry, Criminal Justice Education, Panabo City, Davao del Norte, Region 11 Philippines

About the presenter:

Daven Ray Septimo is a Bachelor of Science in Criminology student at ACES Polytechnic College, Inc. As a dedicated and motivated individual, he is committed to academic excellence and contributing meaningful insights to the field of criminology. With a strong foundation in research and a passion for advancing justice and public safety, he is actively involved in exploring criminological theories and community-based interventions.



Process and effectiveness of students counseling: A study in a higher education institute in Oman

Rayyan Musabah Khamis Al-Rushdi
Student, University of Technology and Applied Sciences – Shinas, Oman

ABSTRACT

This study aimed to evaluate the effectiveness of student counseling services at the University of Technology and Applied Sciences in Shinas, Oman, addressing challenges students face in personal, academic, social, psychological, and professional areas. The primary objective was to assess how well these services meet student needs. Specific objectives included determining the effectiveness of the counseling process, identifying challenges that prompt students to seek counseling, examining the necessity of these services, analyzing the results of the counseling program, exploring barriers preventing access, and suggesting measures to enhance the counseling department's effectiveness. A convenience sampling method was used, gathering data from 61 students across various academic levels and disciplines through a survey questionnaire. The questionnaire, distributed electronically via MS Forms, had two parts: one for demographic information and another for specific questions on counseling services, answered using a five-point Likert scale. Additionally, qualitative data were collected from interviews with 10 students who had received counseling and the head of the Counseling Department. The analysis revealed a positive link between the effectiveness of counseling services and students' academic, psychological, and personal development. Counseling services significantly impacted students' well-being and their ability to adapt to university life. Psychological guidance and academic support emerged as crucial for improving students' academic and social adjustment. The study concluded that student counseling services are essential for supporting students' personal and academic growth, helping them overcome challenges, and enhancing their success and overall well-being.

Keywords: student counseling, effectiveness, academic competence, guidance services, mental health, professional development

Science, Technology, Engineering & Mathematics Track

Factors influencing awareness of family caregivers on the potential health benefits of papaya (*Carica papaya, 1753*) leaves in dengue fever management

[1]Eddie Mhar Cacho, [1]Kit Patrick Lee A. Dela Cruz, [1]Jazmin Lorenz A. Resurreccion, [1]Daphne Lizet B. Tollos, [1]Llana Euriz I. Traje & [2]Ma. Ellen C. Teson

[1]Fourth Year Student, Bachelor of Science in Nursing, College of Nursing - Aklan State University Main Campus; [2]Master of Arts in Nursing, Clinical Instructor, College of Nursing - Aklan State University Main Campus, mecteston@asu.edu.ph

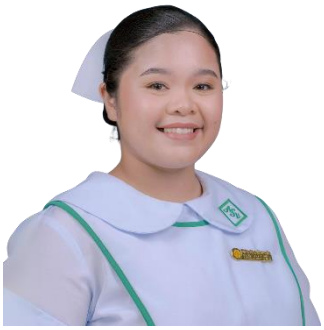
ABSTRACT

Dengue fever remains a major public health concern in the Philippines, particularly in endemic areas like Kalibo, Aklan. This study examines the factors influencing family caregivers' awareness of the potential health benefits of papaya (Carica papaya) leaves in managing dengue fever. Employing a quantitative, comparative-correlational research design, the study surveyed 349 family caregivers in a dengue hotspot barangay in Kalibo, Aklan, Philippines. Data were gathered using a validated, researcher-made questionnaire and analyzed through statistical tools, including descriptive statistics, Kruskal-Wallis test, Mann-Whitney U test, and Spearman's rho correlation coefficient. The findings revealed that socio-demographic variables such as age, gender, education, and income significantly influenced awareness levels. Older caregivers and those with higher education demonstrated greater awareness of papaya leaves' benefits, while economic constraints often directed families toward alternative remedies. Technological factors, including access to online resources, and cultural influences within kinship and social factors also significantly shaped caregivers' understanding. Statistical analysis revealed significant differences in awareness when grouped by socio-demographic characteristics and highlighted correlations between influencing factors and awareness levels. Papaya leaves were recognized by the respondents for their therapeutic benefits, particularly in alleviating thrombocytopenia and enhancing immune response in dengue fever management. The findings emphasized the need for integrated health education programs and community-driven campaigns to promote informed and safe use of herbal treatments. By bridging traditional knowledge with evidence-based practices, the study contributes to enhancing caregiving practices and health outcomes in underserved areas in the Philippines.

Keywords: papaya leaves, dengue fever, family caregivers, awareness, alternative medicine, health education

About the presenter:

Daphne Lizet B. Tollos is a fourth-year nursing student of Aklan State University Main Campus, graduated from Regional Science High School VI (RSHS VI). She maintained consistent academic excellence throughout schooling. Participated as a contestant in Science Investigatory Project competition, co-authored a research and development study on a mobile application for tracking and recording COVID-19 symptoms. Co-invented and co-authored the emergency rescue signal robot, which earned first runner-up recognition in a Nursing Informatics competition. She is also an active student leader and councilor of the Student Nurses Organization and recently awarded as a finalist in the Top Outstanding Students of Aklan State University (TOSA).



Efficacy of ligas (*Semecarpus cuneiformis Blanco*) ground leaves and virgin coconut oil (*Cocos nucifera L.*) as a topical remedy for eczema

Zhiena Jhoy D. Caldito, Agatha Faith U. Arvesu & Jan Shealtiel P. Besa

Grade 10 students, Plaridel Integrated National High School

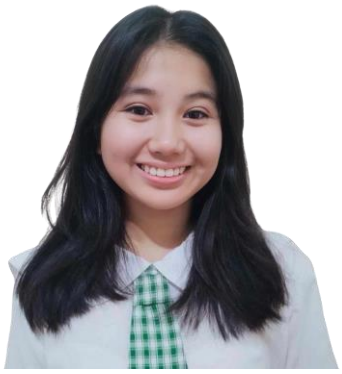
ABSTRACT

This study investigated the efficacy of a topical remedy formulated with *ligas* ground leaves and virgin coconut oil in managing eczema symptoms compared to a commercially available remedy containing topical steroids. A repeated measures design was employed, with five participants applying the *ligas* ground leaves and virgin coconut oil topical remedy to the affected area of their skin and the commercial treatment to a different affected area for five days. Participants completed a survey questionnaire for sensory evaluation of treatment in terms of safety and usability and provided photographs of their eczema symptoms for a visual assessment of improvement. They also recorded the number of days it took for their eczema to heal. Data were analyzed using t-tests, mean percentage, and standard deviation to determine the difference between the two treatments. The t-test results indicated that the calculated t-computed value accepted the null hypothesis (Ho) at the 0.05 significance level, suggesting no statistically significant difference between the *ligas* ground leaves and virgin coconut oil as a topical remedy and the commercial treatment in terms of healing progress in the surface area, the number of days it takes for the target condition to heal, safety, and usability of the product. Hence, the topical remedy made from *ligas* leaves and VGO has the same efficacy as the commercial remedy in treating eczema. Further studies of *ligas* leaves in the medical field are highly encouraged for future researchers to add to limited literature exploring the benefits of the said tree.

Keywords: eczema, topical remedy, ligas, virgin coconut oil,

About the presenter:

Zhiena Jhoy Caldito, a 16-year-old Grade 10 STE student, is currently studying at Plaridel Integrated National High School. She excels in research and is recognized as the best in her class. She participated in a division science and technology fair, where her research project earned second place, along with awards for best presenter and best poster. She has also participated in a Research-related event, showcasing her dedication to the field. Zhiena's achievements are a testament to her talent and hard work, and she is a shining example of the bright future of Research in the Philippines.



PurIrriGrow: An automatic desalination and irrigation system

Rain Aeriel S. Ventabal, Kristine Sarah P. Trinidad, Cyril Mea B. Segovia, Mary Vianney D. Figares & Jakkie P. Depalac

Senior High School students, City of San Jose Del Monte National Science High School

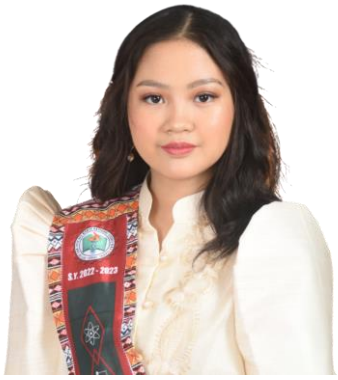
ABSTRACT

PurIrriGrow: An Automatic Desalination and Irrigation System was an innovation developed to address freshwater scarcity in the agricultural sector. The system utilized a parabolic trough and solar still to thermally desalinate the saline water, while an Arduino Uno R3 and different sensors were used to automate the irrigation. The researchers conducted six experimental tests to examine the functionality of the PurIrriGrow. Two of the tests were conducted to assess the thermal desalination components by circulating water through the system. The two tests proved that the overflow system and solar still performed their intended functions. The remaining four tests were conducted to assess the automatic irrigation components. The meter for water quality, ultrasonic sensor, soil moisture indicator, and LCD screen all proved to respond to their triggers without noticeable time delays. The results of these experimental procedures indicate the potential of PurIrriGrow in freshwater production and automated irrigation.

Keywords: desalination, automated irrigation, freshwater scarcity, agriculture, thermal desalination, Arduino

About the presenter:

Rain Aeriel Ventabal is a dedicated student researcher under the Senior High School-STEM strand. A natural leader and collaborator, Rain actively engages in her school's academic and extracurricular activities, inspiring her peers with her enthusiasm. As a proud representative of the City of San Jose del Monte National Science High School, Rain embodies the qualities of an innovator, committed to creating solutions for a better tomorrow.



An enhancement of the Eigenface algorithm using weber local descriptor applied in attendance management system

[1]Amyr Edmar L. Francisco, [1]Angelo Lance O. Seraspi, [2]Jamillah S. Guialil & [3]Khatalyn E. Mata

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ABSTRACT

The presented study proposes an enhancement to the Eigenface algorithm used in face recognition tasks, specifically an attendance management system. Traditional implementations of the algorithm rely on the computation of Eigenfaces derived from an image dataset; however, a critical limitation arises due to the requirement that the face images within the dataset and unseen faces must be captured under uniform lighting conditions. Variations in lighting between a person's dataset images and unseen faces significantly impact the algorithm's accuracy, thereby limiting its practical applicability. To address this limitation, the Weber Local Descriptor (WLD) is introduced as a local descriptor employed during the algorithm's training and recognition phase. The application of WLD facilitates the normalization of light levels across images, effectively mitigating the adverse effects of varying lighting conditions on the performance of the Eigenface algorithm. The extended Yale B dataset, which has 2,414 images with varying lighting conditions, is used to test the algorithm's accuracy. Using stratified k-fold cross-validation with 10 splits, the original algorithm achieved 77.84% accuracy, while the enhanced Eigenface algorithm achieved 99.79% accuracy. This enhancement significantly improved the Eigenface algorithm's ability to recognize faces under varying lighting conditions, making it more practical in an attendance management system.

Keywords: Eigenface algorithm, image processing, facial recognition, local descriptor, weber local descriptor

About the presenter:

Amyr Francisco is a 4th year Bachelor of Science in Computer Science student at Pamantasan ng Lungsod ng Maynila. He previously served as the Mobile Development Lead and Chief Technology Officer of the Google Developer Student Clubs at PLM. Since beginning his programming journey in 2020, he has actively participated in hackathons, achieving recognition as a winner in three competitions to date. With a strong passion for software development, he is currently focusing on advancing his knowledge in data science and machine learning.

Enhancement of Convolutional Neural Networks (CNNs) algorithm for application form using GlobalMaxPooling in document verification system

[1]Fabien Georgette M. Lapuz, [2]Michael D. Carlos, [3]Khatalyn E. Mata & [4]Mark Anthony S. Mercado

[1]4th Year Bachelor of Science of Computer Science student, Pamantasan ng Lungsod ng Maynila; [2]Acting Dean, College of Information Systems and Technology Management, Pamantasan ng Lungsod ng Maynila, kemata@plm.edu.ph; [3]Faculty, College of Information Systems and Technology Management, Pamantasan ng Lungsod ng Maynila, masmercado@plm.edu.ph

ABSTRACT

This study focuses on improving Convolutional Neural Networks (CNNs) to automate document verification system by utilizing CNN's memory and computational complexity with adapting its structures to the specific characteristics of image data. Moreover, pooling is a crucial process for reducing the dimensionality of extracted features, a known key component of CNN Architecture. Thus, choosing the most appropriate pooling method is crucial across numerous computer vision architectures. Conventional pooling techniques like max pooling and average pooling have been extensively utilized for dimensionality reduction. However, both technique presents its own set of limitations such as loss of important details that are essential for tasks demanding high precision, while also diminishing the significance of key features by distributing attention across all values. This study presents the alternative pooling method of GlobalMaxPooling, aimed at capturing the most significant patterns and emphasizing critical patterns pertinent to document verification tasks. Using a dataset of 750 application forms, our results demonstrated an increase of significant improvement in detection accuracy, with the enhanced model achieving an accuracy of 77.2% compared to the existing model's initial 20% accuracy. Furthermore, these findings emphasize the importance of effective pooling methods thereby strengthening the model's capability for document verification, paving the way broader applications in automated systems requiring high precision and scalability.

Keywords: automation, document verification, Convolutional Neural Networks (CNN), pooling method, GlobalMaxPooling

About the presenter:

Fabien Georgette M. Lapuz is currently a fourth year Bachelor of Science in Computer Science student at Pamantasan ng Lungsod ng Maynila. She is dedicated to improving their academic and technological skills through rigorous study and practical applications, aiming to deliver substantial solutions to real-world problems. Lastly, her education at PLM has equipped them with a strong foundation in software development, data analysis, and inventive problem-solving techniques.

The effectiveness of malunggay (*Moringa oleifera*) branch cellulose for sustainable bio-seedling pot production

Christian G. Requinto & Jay Lord L. Elsisura

Grade 10 students, City of San Jose del Monte National Science High school

ABSTRACT

Plastic seedling trays are widely used in agriculture and are vital for plant growth. However, improper disposal of these trays has become a significant concern, contributing to the growing issue of plastic pollution. With the increasing awareness of plastic waste and the environmental impact of conventional plastic trays, eco-friendly alternatives are in high demand. This study investigates the viability of Malunggay as a cellulose source to produce cellulose-based bio-seedling pots. Samples of bio-seedling pots were created, containing similar chemicals but with varying cellulose concentrations (5wt%, 10wt%, 15wt%). Each cellulose concentration was replicated three times and cross-linked with different citric acid concentrations (40wt%, 45wt%,50wt%). The tensile strength (TS), compressive strength (CS), water solubility, and biodegradability of all samples were tested, revealing improved performance with higher component concentration. The sample with the highest component ratio exhibited promising durability (TS: 42N; CS:295N), biodegradability rate (12.5%/day), and water solubility rate (25%/day), supporting healthy plant growth and demonstrating significant performance under varying production conditions. The results conclude that cellulose from Malunggay branches has the potential to be an effective, sustainable material for bio-seedling pot production. This contributes to more environmentally friendly agricultural practices and offers insights into eco-friendly innovations in agriculture.

Keywords: cellulose-based biopolymer, biodegradable seedling pot, malunggay (Moringa oleifera) cellulose, citric acid crosslinking, cellulose extraction

About the presenters:

Christian G. Requinto is a 15-year-old student born on March 11, 2009, in San Jose Del Monte, Bulacan. Currently enrolled at the City of San Jose Del Monte National Science High School. He has actively participated in multiple research competitions like the Samsung "Solve for Tomorrow 2024" Research Competition and the World Innovative Science Project Olympiad (WISPO) and has been a two-time semi-finalist in the Climate Science Olympiad, showcasing his commitment to academic excellence and environmental awareness.

Jay Lord L. Elsisura is a 16-year-old student born on November 20, 2008, and is residing at San Jose del Monte Bulacan. He is currently enrolled in City of San Jose del Monte National Science High School (CSanSci). He was actively engaged in various research competitions including Samsung Solve for Tomorrow 2024, and a semi-finalist in Climate Science Olympiad 2023. He also exhibits his analytical ability by participating in several math competions. His involvement in these activities demonstrates his passion for excellence and innovation to seek creative solution.

Enhancement of K-Means algorithm for analyzing earthquake occurrence pattern in the Philippines

[1]Sean Marie B. Bayono, [1]Ronanne Jcher D. Bulaon, [2]Richard C. Regala, [3]Vivien A. Agustin & [4]Khatalyn E. Mata

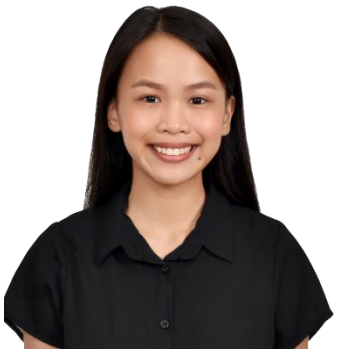
[1]Student, Pamantasan ng Lungsod ng Maynila; [2]Computer Laboratory Administrator, Diploma in Information Communication Technology, Pamantasan ng Lungsod ng Maynila, rcregala@plm.edu.ph; [3]Master in Information Technology, Associate Dean/Assistant Professor III, College of Information Systems and Technology Management - Pamantasan ng Lungsod ng Maynila, vaagustin@plm.edu.ph; [4]Doctor in Information Technology, Dean of College of Information Systems and Technology Management - Pamantasan ng Lungsod ng Maynila, kemata@plm.edu.ph

ABSTRACT

This study aims to enhance the K-Means clustering algorithm to improve the analysis of earthquake occurrence patterns in the Philippines. Traditional K-Means, while effective, suffers from limitations such as random initialization and slow convergence. To address these issues, we propose an improved K-Means algorithm that strategically selects initial centroids based on a distance-weighted probability distribution to enhance accuracy and processes data in smaller batches to reduce computation time, thereby improving scalability and convergence speed. Using earthquake data from the Philippine Institute of Volcanology and Seismology (PHIVOLCS), we evaluate the performance of the enhanced algorithm using metrics such as Silhouette Score and Time Complexity. Results demonstrate that the proposed modifications significantly enhance clustering accuracy, computational efficiency, and scalability, leading to more precise identification of high-risk seismic areas. By providing a more accurate and efficient framework for seismic data analysis, this research contributes to disaster preparedness, risk mitigation, and informed decision-making in urban planning and disaster management.

Keywords: K-Means Algorithm; Mini-batch processing; Disaster Preparedness; Seismic data analysis

About the presenter:



Sean Marie Bayono is a 4th-year Bachelor of Science in Computer Science student at Pamantasan ng Lungsod ng Maynila. As she gained experiences from her internships as a mobile developer intern, her interests grew in development and designing. But she remains passionate about exploring and learning across diverse areas within and beyond computer science, including data analytics and cybersecurity.

In addition to this, she has actively participated as a former UI/UX volunteer and Internal Relations Officer of Google Developer Students Club - PLM and competitions such as Umak I.T. Skills Olympics 2022 & 2024 and DICT HackforGov Capture the Flag (CTF) 2023. She has continuously enjoyed joining and meet peers with the same interest.

Through this presentation, she aims to share insights on the Enhancement of K-Means Algorithm for Analyzing Earthquake Occurrence Pattern in the Philippines that will give a significant impact to the disaster preparedness, risk mitigation, and informed decision-making in urban planning and disaster management. Moreover, contribute to global conversation and gain diverse perspectives from an international audience.

Enhancement of seam carving algorithm for optimized content-aware image resizing application

[1]Eliza Joyce B. Lim, [1]Louweesiana M. Buscas, [2]Vivien A. Agustin & [3]Khatalyn E. Mata

[1]4th Year Bachelor of Science in Computer Science, Pamantasan ng Lungsod ng Maynila; [2]Master in Information Technology, Professor, Pamantasan ng Lungsod ng Maynila, College of Information Systems and Technology Management, vaagustin@plm.edu.ph; [3]Doctor in Information Technology, Dean, Pamantasan ng Lungsod ng Maynila, College of Information Systems and Technology Management, kemata@plm.edu.ph

ABSTRACT

Seam carving is a popular method of resizing an image while maintaining important content by adding or removing seams. The key to this approach is the importance map, distinguishing seams of the least visual significance. Nevertheless, traditional approaches struggle to preserve local and global image characteristics, causing visible artifacts that can significantly diminish visual fidelity. This study presents a new importance map combining Bubble Entropy, a Euclidean distance saliency map, and Haar wavelets for edge detection. Bubble Entropy is excellent at finding regularity and structural continuity across pixel neighborhoods, tracing significant seams. The saliency map's perceptually uniform property enhances color variation assessment, improving the detection of salient regions and textures. Additionally, Haar wavelet transforms enhance edge detection by maintaining structural transitions while resizing. By calculating the combined importance map, the proposed approach settles at the optimal balance between local and global characteristics of an image. The proposed algorithm outperforms previous seam carving algorithms in terms of perceptual quality metrics: HyperIQA and TOPIQ with the RetargetMe dataset. Execution time was also significantly reduced using the Numba package. Experimental results show image content preservation while improving visual quality and presenting a stronger approach for content-aware image resizing.

Keywords: seam carving, entropy, bubble entropy, saliency map, haar, wavelet filter

About the presenter:

Eliza Joyce B. Lim is a fourth-year student pursuing a Bachelor of Science in Computer Science at Pamantasan ng Lungsod ng Maynila. She graduated with honors in high school and has consistently maintained academic excellence as a Dean's Lister in college. She is also a proud recipient of the DOST-JLSS scholarship, which supports outstanding students in science and technology fields. She also enjoys competing in hackathons and actively volunteers at her school organizations, such as the Computer Science Society under the externals committee and the Google Developer Student Club's UI/UX department.

Innovative Mobile Evaporative Cooling System for Agricultural Crops (IMECSAC)

Charles Benedict V. Fernandez, Dexter H. Gilles & Antonette Jade B. Sancio

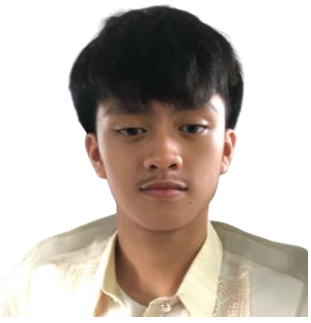
Grade 10 students, City of San Jose Del Monte National Science High School

ABSTRACT

Agricultural spoilage significantly contributes to global hunger and economic challenges, particularly in the Philippines. Inadequate food storage systems lead to major losses affecting food safety and farmers' livelihoods. Researchers have developed Zero Energy Cooling Chambers (ZECCs) to tackle this issue, though these designs have multiple disadvantages. IMECSAC aims to enhance these chambers by improving their design and utilizing lighter, more mobile materials, increasing farmers' efficiency. To test this approach, researchers prepared a Borax-Boric Acid Treatment Solution with a 10% concentration (6% Borax and 4% Boric Acid) in a 140-liter drum, allowing bamboo to soak for five days. A smaller-scale chamber was constructed according to the blueprint. e chamber's performance in lowering temperatures and preserving food samples was evaluated for 5 days. Using tomatoes, okra, and eggplants as harvested crops. The data showed a %12.92 difference in the temperature inside the chamber and its surroundings, while %54.95 for its humidity. The charts have proven that the chamber can lengthen the shelf life of the harvested crop by at most 2 days. This study highlights the potential of locally sourced materials like bamboo and rice husk as better alternatives to conventional materials used in traditional ZECCs.

Keywords: Zero Energy Cooling Chamber (ZECCs), IMECSAC, bamboo, rice husk, agricultural spoilage

About the presenter:



Dexter H. Gilles is known for his creativity and helpfulness in community and professional settings. He is an innovative thinker, consistently demonstrating originality in problem-solving and brainstorming sessions, generating unique ideas that significantly contribute to various projects. His creativity is showcased through artistic expression in mediums such as visual arts, digital media, or performing arts, with a diverse portfolio that reflects their passion for creative endeavors.

Dexter, known for his supportive attitude, is a true team player, often going above and beyond to assist others. Dexter actively listens to others' needs and provides valuable guidance and resources to help them succeed. His community involvement is notable, as he dedicates time and skills to various causes but is more focused on making new products that can help people worldwide.

Robotic fall prevention and mobility assistance system

Sage Raijin E. Cañizares

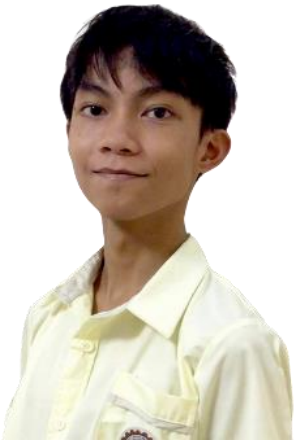
Grade 10 student, City of San Jose Del Monte National Science High School

ABSTRACT

The study aimed to develop a sustainable and innovative system with the purpose of improving mobility assistance, quality of life, and preventing falls for individuals with limited mobility. Specifically, it aimed to solve the challenges faced by users in navigating uneven surfaces and performing daily tasks, relying heavily on caregivers and therefore losing independence. The investigation involved drafting blueprints, prototyping, and iterative design refinement, integrating advanced features such as solar panels for sustainable power, robotic arms for enhanced task support, and shock-absorbent components to improve stability. The Robotic Fall Prevention and Mobility Assistance System then had its stability, surface adaptability, task assistance, and battery efficiency tested and evaluated through standardized tests. Results and data gathered indicated that the RoboTech Chair performed optimally on flat surfaces and showed strong functionality on uneven terrain, achieving an average mobility efficiency of over 90% across varied tests. However, challenges in battery longevity and terrain adaptability emerged as it struggled to perform when the battery had dropped below 80%, highlighting areas for future improvement. Data obtained from the study demonstrate the Robotic Fall Prevention and Mobility Assistance System's potential as a viable alternative for assistive mobility solutions, combining functionality with sustainability. Further research could enhance the system's efficiency in real-world scenarios, particularly in extending battery life, optimizing performance on rugged surfaces, and using the data to translate into a full-scale robot.

Keywords: mobility assistance, fall prevention, robotic chair, independence, stability, assistive technology

About the presenter:



Sage Raijin E. Cañizares is a driven and ambitious student with a passion for law, robotics, sustainable energy, and literature. Sage dedicates time to projects and initiatives that reflect creativity, leadership, and problem-solving. Notable projects include the RoboTech Chair, a robotic mobility device designed to assist users in daily tasks and navigate difficult terrain, and Project C.R.E.S.T., an innovative system that integrates energy harvesting, water purification, and sustainable agriculture to address climate-related challenges.

From a young age, Sage has developed a strong foundation in public speaking, starting at the age of five, and has been creating speeches for years. This early experience has fostered confidence and eloquence, contributing to Sage's leadership roles and participation in various competitions.

Sage has participated in a variety of competitions, including the International Climate Science Olympiad for two consecutive years, demonstrating a deep interest in addressing global environmental challenges. In the realm of science and innovation, Sage secured 3rd place in the Division Science Fair and submitted Project C.R.E.S.T. to Samsung's research competition, highlighting a commitment to sustainable technology and innovative solutions. Writing has also been a key focus, with Sage competing in numerous writing contests, further developing skills in storytelling and critical analysis.

SAWDCOCOHUSKS: Innovative thermal efficiency and practical feasibility of sawdust-coconut husks (*Cocos Nucifera*) wall tiles as advanced thermal insulators

Sophia Marie I. Jaguio
Grade 10 student, City of San Jose Del Monte National Science High School

ABSTRACT

The rising of yearly temperature anomalies creates the stress of finding the right thermal insulator that ensures durability and efficiency while also being thoughtful about the financial feasibility of thermal insulators. This study analyzes the viability of employing sawdust-coconut husk composite wall tiles as sustainable thermal insulators for architectural applications and bio-friendly thermal insulators. The research focuses on repurposing agricultural waste to boost thermal insulation efficiency and promote environmental sustainability in construction. Methodologically, sawdust and coconut husk composites are made with resin, and changes in thickness and size are tuned to match real-world building conditions. Thermal performance is tested using temperature differential measurements utilizing thermal imaging techniques. Economic analysis examines the cost-effectiveness and potential financial benefits of using certain materials. The study informs and interprets its methodologies to provide our novel conclusion utilizing data from the body of prior literature and related research. By measurements of 30 x 20.5 x 5, with the Thermal R-value of 0.615 w/mK rises, succeeding in innovating a thermal insulator with High R-value and low T-value that contributes to the upper hand of control over the conductibility of these thermal insulators. Additionally, the SAWDCOCOHUSKS provided noise-canceling variable advantages, calculations displayed a peak sound reduction coefficient of 0.5 at 8 kHz and efficiently reduced noise across the 5.5 – 8 kHz frequency range. Limitations include resource limits such as infrastructure, financial assistance, and material availability for thorough testing. By tackling these difficulties, the research seeks to contribute to the improvement of sustainable building materials and guide future practices in environmentally conscious construction.

Keywords: sawdust, coconut husks, thermal insulation, efficiency and feasibility, innovation, innovative

About the presenter:

Sophia Marie I. Jaguio, an aspiring 16 years old, is a Grade 10 student from the City of San Jose Del Monte National Science High School. The importance of excellency towards contributing to the societal matters has always been seen and heard by her. She personally enjoys achieving goals she set, and also relish in the value of inspiring others with her leadership skills, allowing them to achieve dreams of their own. She is currently the President in one of the school organizations and an active guidance coordinator for co-students both in academics and leadership-related skills. She believes that to aspire change is to inspire development and innovation.

Farm to Flame (F2F): Enhancing biogas production from cow manure using rice husks and corn husks as accelerants

Dennona Ambher Marcaida, Hallyneehra Bartolome & Cleantha Arguelles

High School students, City of San Jose del Monte National Science High School

ABSTRACT

The reduction of fossil fuel use has driven researchers to develop biogas digesters as alternative energy sources. However, many digesters take too long to produce biogas, are not accessible in a short timeframe, and are difficult to replicate on a smaller scale—especially for rural households. This study addresses these issues through the use of familiar farm wastes: cow dung, rice husk, and corn husk, creating the Farm to Flame (F2F) Biogas by combining pre-treated, high-carbon husks, it aims to accelerate anaerobic digestion in biogas production. The researchers developed a 20-liter biodigester with digestate storage, pipe and valve connections, and a biogas collector. Feedstock was pre-treated with sodium hydroxide to reduce lignocellulosic content, aiding faster microbial digestion. Cow dung, feedstock, and water were mixed in a 2:3:5 ratio, with 2.9 kilograms, 5 kilograms, and 9-liter respectively, and a 3-liter allowance for gas accumulation. After 10 to 14 days, the floater was measured to estimate biogas yield, producing approximately 0.00227 cubic meters or 2.27 liters. The resulting biogas, with a bluish-orange flame, burned for around 35 minutes. The F2F Biogas showed a faster production rate compared to other studies using cow dung with rice or corn husk alone or with fruit/vegetable wastes, highlighting its potential as a viable, quicker alternative for biogas generation.

Keywords: anaerobic digestion, biogas production, farm waste, pretreatment, sodium hydroxide

About the presenter:

Dennona Ambher Marcaida is a dedicated student and budding researcher with an impressive track record in academic and science-related competitions. She competed in school-based research competitions and advanced to the Division Science and Technology Fair, where she qualified for the Regional Science and Technology Fair. Her passion for environmental science led her to become a semi-finalist in the prestigious Climate Science Olympiad.

Dennona is also a qualifier in other notable research fairs, showcasing her innovative thinking and problem-solving skills. A consistent achiever, she earned High Honor academic awards throughout her four years of high school, exemplifying her commitment to excellence in both academics and scientific pursuits.

LEMMOR: Lemongrass (*Cymbopogon citratus*) and malunggay (*Moringa oleifera*) as an insecticide spray against yellow fever mosquito (*Aedes aegypti*)

Ranna Noreen J. Olacao, Aliyah Mae R. Borcena & Ashley Nicole B. Tayag

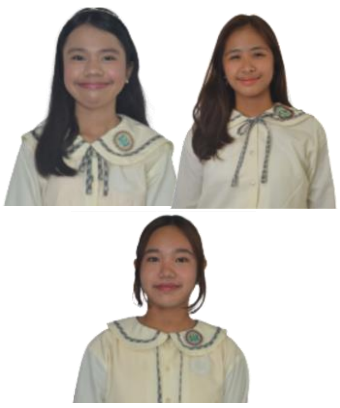
Grade 10 students, City of San Jose del Monte National Science High School

ABSTRACT

Dengue fever, spread by Aedes aegypti mosquitoes, presents major health dangers, particularly in tropical areas such as the Philippines, where more than 195,000 cases were documented by December 2023. This research examines the effectiveness of natural insecticide formulas made from lemongrass (*Cymbopogon citratus*) and malunggay (*Moringa oleifera*) extracts, studying their possible use as a safer option for artificial insecticides. The study aims to investigate the optimal ratios of these extracts (50:50, 75:25, and 25:75) and the influence of different spray frequencies (once, twice, thrice) on mosquito death rates. Employing a Completely Randomized Design (CRD), the research utilized the three spray trials (spray once, twice, thrice) to assess the efficiency of the three formulations in killing insects. Findings showed that there were no notable variations in effectiveness between the different treatments ($p > 0.05$), but treatment 3 (25:75 ratio) consistently displayed the fastest mortality rates, with an average time of 44.33 seconds to eradicate mosquitoes. On the other hand, treatment 2 showed the highest mean duration (66.66 seconds) with more fluctuations, suggesting inconsistency in its efficacy. This study emphasizes the possibility of utilizing lemongrass and malunggay as natural insecticides, providing communities and households with an eco-friendly way to fight dengue and reducing the dependence on dangerous chemicals. Further investigation is encouraged to explore more deeply the combined effects of these plants and how they can be practically used in pest management strategies.

Keywords: lemongrass, malunggay, organic insecticide, Aedes aegypti

About the presenters:



Ranna Noreen J. Olacao, Aliyah Mae R. Borcena, and **Ashley Nicole B. Tayag** have consistently achieved academic excellence, maintaining the title of with high honors and with honors from elementary school to present. This study was initially conducted as a requirement for their research subject and more importantly, as part of their vision to develop an organic mosquito-repelling product by combining two plants commonly found in their neighborhood: lemongrass and malunggay.

In addition to their academic achievements, the researchers have excelled in various extracurricular activities, including journalism, athletics, and music. As students enrolled in the Science, Technology, and Engineering (STE) curriculum of their city's Science High School, they are required to maintain grades above 85 or even 90. Their enthusiasm for science drives their commitment to continuous learning and their aspiration to contribute to creating innovative solutions for a better quality of life."

Bitrosecide: Bitter gourd seeds (*Momordica charantia*), rosemary leaves (*Rosmarinus officinalis L.*), saba (*Musa balbisiana colla*) and señorita (*Musa acuminata señorita*) banana peels as an organic insecticide against American cockroach (*Periplaneta americana*)

Jacob I. Baluyut, Marc Clifford T. Someros, Princess Candize & Norille C. Delmendo

Grade 10 students, City of San Jose del Monte National Science High School

ABSTRACT

This study tackles the efficacy of bitter gourd seeds (*Momordica charantia*), rosemary leaves (*Rosmarinus officinalis L.)* extract as organic cockroach insecticide, including Saba (*Musa balbisiana colla*) and señorita (*Musa acuminata señorita*) banana peel ashes acting as the insecticide's pH level stabilizer. The bitter gourd seeds were macerated in an n-hexane solvent and kept in dark-glass flasks where it was stirred twice a week. The extracts were filtered and concentrated using a rotary evaporator. Rosemary leaves were grounded using a mortar and pestle then transferred in a large Erlinmeyer flask. It was soaked in n-hexane solvent for several hours, followed by filtration. It then was also filtered and concentrated using a rotary evaporator. The banana peels were cut and sun-dried for 3 days, then burnt in a furnace, resulting in ash. The ash was mixed with 150 ml of water then strained using a sift strainer. After straining, it was boiled for 30 minutes wherein vegetable oil and borax were added into it. It was cooled down and separated into 3 mixtures. The oil extracts were added in each mixture with varying ratios via measuring cup. Each mixture underwent 3 different trials. Results indicated that all concentrations achieved 100% mortality rate, however C2 was the fastest in eradicating the American cockroaches where it achieved an average time of 5 minutes and 20 seconds. The results from conducting this study reveal areas for improvement, therefore the researchers suggest gathering more test subjects to further test the spray's efficacy.

Keywords: bitter gourd seeds, rosemary leaves, banana peels, cockroach

About the presenters:

Jacob I. Baluyut, Marc Clifford T. Someros and Princess Candize Norille C. Delmendo are grade 10 students from the City of San Jose del Monte National Science High School who are dedicated and innovative researchers that excel in their respective fields. Known for their analytical thinking, creativity, and teamwork, they bring a unique blend of skills to every project they undertake.

They recently showcased their expertise and collaborative spirit by participating in various research competitions such as the Division Science and Technology Fair and the World Innovative Science Project Olympiad, where they earned a bronze medal for their outstanding research project. They possess various skills such as advanced problem-solving, critical analysis, effective communication, and a strong aptitude for science and technology. With a passion for discovery and a commitment to excellence, Jacob, Clifford, and Candize continue to contribute to the research community.

Eradequine: Atis (*Annona squamosa*) leaves and coconut milk against human head lice (*Pediculus humanus capitis*)

Fritzie Lorraine D. Mapang & Mariane Miles M. Basangal

Grade 10 students, City of San Jose del Monte National Science High School

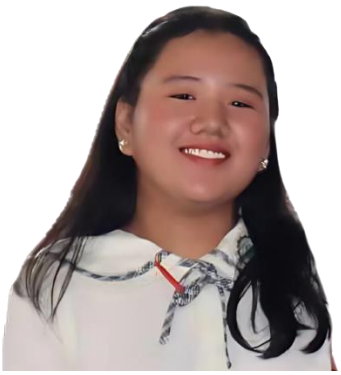
ABSTRACT

Head lice, or pediculosis, is a global health problem affecting people of all age groups worldwide. It poses a significant concern for the health of individuals, particularly children, as well as their social interactions with their peers. This study investigated the pediculicidal abilities of coconut milk and macerated atis leaves in three concentrations, namely, 50:50, 75:25, and 25:75. The study used a true experimental design. It was done in triplicate via in vitro experimentation. 3 head lice per ratio and the control group were placed in a plastic container with filter paper treated with the solutions at the bottom. The researchers derived from the average time-to-reach mortality rate that a 25:75 ratio of coconut milk and atis leaves yields the fastest pediculicidal effect. An independent t-test showed a non-significant p-value between Eradequine and the Kwell (a commercial pediculicide). Pearson r results also revealed a positive correlation between Eradequine and the death of the lice.

Keywords: head lice, atis, custard apple, coconut milk, pediculosis, pediculicide

About the presenter:

Fritzie Lorraine D. Mapang is a 10th grade student of City of San Jose del Monte National Science High School



R.A.N.G.E.R: Rescue and Navigation Ground Exploration Robot for Post-earthquake Operations

Muhammad Assad Ullah R. Bhatti, Melvin Rhey R. Casupanan, Kristelvine B. De los Santos, Elmer Jhon P. Espejo & Georgina M. Temblique

Senior High School students, City of San Jose Del Monte National Science High School

ABSTRACT

Located within the Pacific Ring of Fire, the Philippines faces frequent and severe earthquakes, showing the critical need for a search and rescue (SAR) technology to protect both victims and rescuers. Traditional SAR operations often put rescuers' lives at risk, especially in dangerous post-earthquake environments. The R.A.N.G.E.R. (Rescue and Navigation Ground Exploration Robot) was developed to support these operations in post-earthquake environments. This study evaluated the robot's performance, focusing on video transmission, communication reliability, battery life, and traversal capabilities. The research involved assembling a tank chassis with an ESP32 camera, two-way radio, motors, and batteries, protected by 3D-printed waterproof cases. Components like motor drivers and regulators were integrated, with control via a smartphone access point and software developed in Arduino IDE to manage operations. After the robot underwent various tests including a simulated field test, its performance was evaluated. The compact (26 x 23.5 x 15 cm) and lightweight (1.8 kg) robot demonstrated efficient navigation through debris-filled terrains. Communication tests showed "high effectiveness" scores of 95%–100%, while two-way radio communication remained clear up to 1.3 kilometers. The robot's battery life averaged 4.26 hours, slightly below the theoretical 5.47 hours, and its traversal performance showed consistent results across various operator distances (p-value = 0.0637). These findings highlight R.A.N.G.E.R.'s reliability and adaptability, making it a valuable asset for SAR operations, with recommendations for improvements in video quality and battery optimization.

Keywords: search and rescue, post-earthquake operations, disaster response, robotics

About the presenters:

Muhammad Assad Ullah R. Bhatti, Melvin Rhey R. Casupanan, Kristelvine B. De los Santos, Elmer Jhon P. Espejo, and **Georgina M. Temblique** are senior high school students in the final year at the City of San Jose del Monte National Science High School.

As a team, they are hardworking and passionate about exploring new ideas and solving real-world problems through research. Three of them have participated in robotics competitions, with one even representing the school internationally. These experiences have helped them develop creativity and the ability to handle challenges effectively.

The other two members of the group are skilled campus journalists and writers who contribute strong creativity and writing skills to our projects. Together, they form a well-rounded team that blends technical expertise with writing skills to create meaningful and impactful work.

Through their teamwork and dedication, they have learned to use their unique talents to tackle challenges and achieve their goals.

Business, Management & Accounting Track

Popularity of internet advertising on business operations among selected convenience stores

Jessica M. De Dios, Mae Lhorry Bhie M. Cordeta & Mikaela Juliana S. Manapat

Students, St. Vincent College of Cabuyao

ABSTRACT

The study aimed to evaluate the popularity level of internet advertising on 7-Eleven and Alfamart convenience stores in Brgy, Bigaa City of Cabuyao, Laguna. It examines the performance of various advertising tactics, potential advantages, and challenges amid evolving digital marketing and customer behavior trends. The research explores customer perceptions of internet advertising popularity, business operations, and their correlation. Data from 127 respondents across two convenience store chains were analyzed using statistical techniques such as weighted mean, Analysis of Variance (ANOVA), and Pearson correlation. Findings reveal positive customer awareness and knowledge of internet advertising, as well as strong agreement on the effectiveness of business operations in terms of product, price, place, and promotion. The study provides valuable insights for convenience store executives, managers, and staff to enhance business performance through strategic internet advertising that enhances brand visibility, customer engagement, and profitability. Recommendations are offered for effectively utilizing internet advertising within the convenience store sector.

Keywords: advertising tactics, customer perceptions, digital marketing and 4P's of marketing

About the presenters:

Mae Lhorry Bhie M. Cordeta is a dedicated student pursuing Bachelor of Science in Business Administration, majoring in Marketing Management. She is knowledgeable in digital marketing and has consistently demonstrated excellence as an academic achiever. A former student council member, she has shown strong leadership skills and a commitment to serving her peers. She actively attends seminars to enhance her expertise and is a member of the Philippine Junior Marketing Association, reflecting her passion for continuous learning and professional growth in the field of marketing.

Jessica M. De Dios is a dedicated academic achiever with a strong passion for learning and personal development. She consistently strives for excellence in her studies, aiming to not only meet but also exceed academic expectations. She is open-minded and highly adaptable, always seeking new strategies, skills, and opportunities that contribute to her growth as an individual. She is committed to improving both her knowledge and abilities. With a disciplined work ethic and a proactive approach to challenges, she remains focused on achieving her goals. Her commitment to lifelong learning ensures that she is always evolving, both academically and personally.

Mikaela Juliana S. Manapat is a hardworking student with an excellent academic background who achieves in both her schoolwork and extracurricular activities. She continually exhibits a love of learning and a dedication to greatness, garnering accolades for her accomplishments in a variety of subjects. She is especially interested in specific fields of study, such as sciences, arts, or leadership, which she actively pursues via academic projects and community participation. Her focused work ethic and curiosity make her a well-rounded and promising student throughout her academic career.

Lived experiences of buffet administrators amidst commodity price volatility in Davao Region

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ABSTRACT

This study explored the lived experiences of buffet administrators amidst commodity price volatility in the Davao region. It utilized a qualitative-phenomenological research design. With the help of interview guide questions, the researchers gathered data through purposive sampling and generated responses from nine participants through in-depth interviews and focus group discussions. Using Thematic Analysis, the study revealed the following experiences: compelled reluctance, disheartenment due to market instability, and constraints in offering standard menus. Participants also shared coping mechanisms such as developing flexibility, enforcing a no-leftovers policy, and exploring alternative options. Additionally, the study uncovered insights drawn from these experiences, including an appreciation for strategic planning, consideration of work schedule modifications, and anticipation of business fluctuations to maintain operations despite the challenges posed by price volatility and anticipating uncertainty as a norm in the business environment enables buffet administrators to achieve a competitive advantage and thrive in dynamic market conditions. The challenges faced by buffet administrators in navigating commodity price volatility are multifaceted, ranging from operational constraints to customer satisfaction and financial management. By addressing these challenges directly and adopting proactive approaches, buffet administrators can foster resilience and ensure long-term success in the hospitality industry.

Keywords: buffet administrators, business management, hospitality industry, commodity price volatility, Davao Region, Philippines

About the presenter:

Mhele Toyongan is a dedicated college student at ACES Polytechnic College, Inc., consistently recognized as a star honor recipient for academic excellence. With a strong commitment to research and innovation, Mhele specializes in Business and Hospitality Management.

Mhele's recent research endeavors aim to contribute to the advancement of sustainable practices and understanding of hospitality trends.

Institutional Partners & Members

Universiti Teknologi Mara is the largest public university in Malaysia with more than 200 thousand students all over the country. It has branches in all 14 the states and each state has multiple city campuses. Programs offered are in all area from Diploma to PhD. The areas are accountancy, administration & law, business & management, architecture, engineering, science & technology, computer science, hotel & catering, geomatic & planning, mathematic & actuarial science, office management and TESL. The latest programs are pharmacy and medical programs.

The **College of Teacher Education (CTE) of the Aklan State University** strives to lead in the transformation of future educators imbued with positive values for the global village. It is guided by the four T's mantra – "Training Tomorrow's Teachers Today!" It offers accredited doctorate, masters, and baccalaureate programs in an encouraging environment steered by faculty researchers in highly specialized areas. Its evolution from a mere field of specialization in agriculture in 1975 to be a full degree program in 1987, and ultimately as a leading college in 2006, has carved a niche of graduates with sterling performances in the regional and international arena. Today, CTE is the preferred source of skilled and competent educationists for the basic, technical, and higher education institutions in and outside of the province.

The **College of ICT & Engineering of Western Leyte College** aims to provide quality education and latest developments in computing solutions to meet the demands of the society and industry. The goal is to produce competent professionals in the fields of specialization through programs and trainings responsive to industry; supportive and qualified faculty; appropriate facilities; molding the students with the trinity of virtues, wisdom, leadership and commitment; as well as equally opportunity for all. It offers Bachelor of Science in Computer Engineering, Bachelor of Science in Computer Science, Bachelor of Science in Information Technology and 2 Years Associate in Computer Technology.

Northwestern University is dedicated to develop individuals, to become Highly Competent, Socially Responsible and Ethically Upright Leaders. It is one of the BIGGEST Private Higher Education Institutions in Northern Philippines! With ISO 9001:2015 Certification, CHED Deregulated Status and PACUCOA Accreditations, NWU guarantees quality education that prepares you to become a global professional. It's where champions are made.

Pamantasan ng Lungsod ng San Pablo is deeply committed towards the integral formation of the human person, with a profound faith in God, in his fellow men and himself by providing its students the full development of their physical, intellectual, social and cultural endowment for effective participation in various professions and industrial occupations and to enable them to enjoy reasonable quality of life to be able to contribute to the upliftment of the human society.

Santo Tomas College of Agriculture Sciences and Technology (STCAST) is a locally governed college. An institution being run and managed by the Local Government Unit. The college is a Commission on Higher Education Institutionally Recognized and eligible for the benefits of Republic Act 10931 otherwise known as the Universal Access to Quality Tertiary Education Act. Today, STCAST is now living on its belief that education must be in the state of internationalization and borderless in nature.

The **San Pablo Colleges** is an educational institution with a Christian outlook committed to the complete development of global Filipino learners for the service of God, country and fellowmen. It envisions itself as a leading educational institution nurtures relevant responsive and value-laden lifelong learning. It is committed to uphold the holistic development of learners making them globally competitive through outcomes-based and technology-driven instruction, quality research and proactive community engagement, thereby creating sustainability for all.

The **Northwestern Visayan Colleges (NVC)** is a school conceived in freedom and democracy, dedicated to the ideals of love, which affirms its commitment to the cause of truth, and imparts the arts of the sciences, culture, and all related studies. This non-sectarian institution of higher learning is guided by its purpose of contributing to the formation of a progressive and humane society, as well as responsible citizenry.

Founded in 1993 as the Southern Mindanao Institute of Technology (SMIT), **Aces Colleges System** has grown from offering short-term technical courses to becoming a prominent educational institution with multiple campuses. Initially focusing on computer science, hotel and restaurant management, office management, and seaman courses, SMIT was renamed Aces Polytechnic College, Inc. in 2006, expanding to degree programs. The system includes Aces Tagum College and ACES Polytechnic College, Inc. in Panabo City, each recognized for their entrepreneurial-focused curricula and strong industry linkages. With modern facilities, including interactive speech labs and incubation centers, Aces Colleges maintain their commitment to quality education, adapting to the evolving needs of the academe and industries.

Dr. Carlos S. Lanting College (DCLC) was established in 1979 by Dr. Romeo B. Casaul and Dr. Ruby Lanting-Casaul, starting as a small Lying-in Clinic along Quirino Highway. In 1983, it expanded into a paramedical school, and by 1984, it produced its first Midwifery graduates. Over the years, DCLC has grown into a reputable institution offering a variety of programs, including Nursing, Radiologic Technology, Medical Laboratory Science, and Physical Therapy. It has consistently produced topnotchers in board exams, establishing its academic excellence. The school has also broadened its reach by introducing programs in Business Administration, Education, Psychology, Hospitality Management, and more, while complying with international standards as an ISO 9001:2015 certified institution. DCLC has further gained recognition with several programs accredited by PACUCOA. Committed to quality education, DCLC continuously enhances its facilities and curriculum, ensuring a holistic and transformative learning experience for its students. The institution remains a beacon of excellence, fostering academic and professional growth.

Training Partners

The CPD Certification Service
London, United Kingdom

The CPD Certification Service was established in 1996 as the leading independent CPD accreditation institution operating across industry sectors to complement the Continuing Professional Development policies of professional institutes and academic bodies. The CPD Certification Service provides support, advice and recognised independent CPD accreditation compatible with global CPD principles.
Our unique experience and history working with training providers, professional bodies, academic institutions and corporate organisations enables us to support organisations seeking authoritative CPD certification for their further learning activities. Thousands of CPD training courses, events, e-learning programs, conferences, workshops and seminars are formally certified by us every year adding significant value for audiences and providers alike.

Kidsland Learning and Development Center of Manila
Manila, Philippines

Kidsland is a DepEd recognized learning center that caters preschoolers to actively engage in teaching and learning activities and prepare them for the next level of their educational journey. It offers nursery, kinder 1 and 2. Its pre-school program has been recognized by the government in 2009 with recognition n. P-016 S. 2010. It believes the child's attitudinal development of his acquisition of knowledge, skills, and values and his uniqueness to perceive and understand the outside world is different from that of the adult. It is committed to provide students with basic knowledge, skills and competencies to improve their cognitive, affective, and motor skills in a loving, safe and positive learning environment. It aims to develop learner's multiple intelligences using various instructional materials suited for children to prepare them in a complex world of learning in intermediate level.