



INNOVATION THROUGH RESEARCH  
TOWARDS SOCIAL TRANSFORMATION  
2nd DLSU SENIOR HIGH SCHOOL RESEARCH CONGRESS

---

# Book of Abstracts

## MESSAGE

**Br. Raymundo B. Suplido FSC**  
**De La Salle University President**

Esteemed faculty and fellow administrators, students, and all Lasallians present, welcome to the 2<sup>nd</sup> Senior High School Research Congress and a pleasant day to all of you.

De La Salle University has endeavored to become a leading, learner-centered and research university as a resource for our Church and nation.

This commitment has become ever more relevant amid the Fourth Industrial Revolution, as we strive to keep up with the growing technological innovations in various fields. As we speak, governments with the participation of private enterprises are looking to re-establish the exploration and exploitation of the Moon, even considering it a launching point to the colonization of Mars. While these technologies make our day-to-day living more convenient and comfortable, they also raise other issues and questions. The Internet-of-Things and the ubiquitous presence of sensors around us are making possible smart houses, cars and cities. But they also pose a threat to our personal privacy and freedom. Such developments, considered science fiction not too long ago, are now actually transforming our reality. Some implications of these inventions (e.g. gene manipulation or cloning) also pose a test to our values and moral principles. In the context of all these global changes, DLSU strives to engage young people in the challenging world of research.

Dear young researchers: we encourage you, as early as now, to contribute to knowledge generation. The DLSU Senior High School Research Congress is your initial platform to present the fruits of your studies and investigations, and contribute to our University's research culture.

This year you center your Research Congress on the theme, "Innovation through Research towards Social Transformation". It is very much in keeping with our ideals and values as an institution. Our Founder, St. John Baptist de La Salle, introduced many innovations in education, transforming lives and the French society in the 18<sup>th</sup> century. Today, 21<sup>st</sup> century Lasallian education is transforming lives across the globe. May your spirit of creativity and innovation also bring about genuine change and spiritual upliftment of society.

May this event be an opportunity to share knowledge, deepen our humanitarian commitments, celebrate creativity, and harness your passion and ingenuity.

I hope your participation in this Congress will increase your "ANIMO" - to explore, create, and pioneer ideas, methodologies, and technologies guided by our Lasallian values and help redefine the way we move, build, and live.

**ANIMO LA SALLE!**

# **2nd DLSU SENIOR HIGH SCHOOL RESEARCH CONGRESS**

---

## THE 2ND DE LA SALLE UNIVERSITY SENIOR HIGH SCHOOL (DLSU SHS) RESEARCH CONGRESS

The DLSU SHS Research Congress is an annual gathering of senior high school students as they bring together research-based ideas, concepts, products, and art performances & exhibitions, from their own capstone projects. It is a vision conceived by DLSU SHS' commitment to making a dent in society by involving the students in knowledge creation. In line with the University's vision-mission of bridging faith and scholarship, the Congress highlights the essential role of nurturing a culture of research through the production and dissemination of innovative knowledge for human development and social transformation.

With the theme, "Convergence of Research Diversity," the 1st DLSU SHS Research Congress featured 58 paper and poster presentations, 15 business concepts, and five creative exhibits and performances out of more than three hundred submitted proposals. Despite the rigorous and highly selective review of papers, the 1st DLSU SHS Research Congress was able to gather around 2 000 student researchers, teachers, and school administrators from 36 schools across the country to participate in the recognition and convergence of research diversity. Aside from research presentations, the event also included a plenary talk on the importance of research for Senior High School, strand-specific parallel talks, and a teachers' training session.

The rise of Internet of Things, Virtual Reality, and Artificial Intelligence ushered in an era that revolutionized how men think and respond to their environment. Technological advancements have unveiled yet another stage in human history where conventional work is given to machines, and men participate in the information market. This year's theme, "Innovation through Research towards Social Transformation," is anchored on the behest of the current Fourth Industrial Revolution. Through this Congress, young researchers, scientists, artists, and entrepreneurs, converge ideas from different fields of discipline in responding to various issues, challenges, and changes that pervade the ethos, one of the most important factors in the era of digital technology and information.

# THE CONGRESS EVENTS

---

## The Congress Events

### **A. Paper Presentation**

This congress event will showcase research concepts, collaborations, innovations, and products of various strands and tracks through an interactive oral presentation.

### **B. Poster Presentation**

This congress event is an exhibition of research concepts, collaborations, innovations, and products of various strands and tracks through a display of research posters. This exhibit will particularly show the relevance and contribution of the presenters' research work in their chosen discipline.

### **C. Business Concept Bazaar**

This congress event will provide an opportunity for presenters to demonstrate their entrepreneurial skills and showcase their innovative products. The business plans are supported by a sound business plan that promotes product sustainability and social responsibility.

### **D. Art Performances and Exhibitions**

This congress event will showcase research-integrated creative outputs of young artists. These art performances and exhibitions reflect insightful messages through various art expressions that are creative, innovative and socially relevant.

### **E. Teacher Training**

This teaching development program is where teachers will get an opportunity to immerse into a pedagogical improvement discourse.

# **PAPER PRESENTATION**

---



## **PAPER PRESENTATION**

---

# **21<sup>st</sup> Century Learning and Innovations (CLI)**

## Simulating Culture in Manila during the 19th Century through Virtual Reality 360 for Grade 7 Students

Chandler Dominic P. Guzman<sup>1</sup>, Clyla A. Rafanan<sup>1</sup>, Peter Bryan Jose S. Sy<sup>1</sup>  
and Angel Lou F. Yabut<sup>1</sup>  
Mr. Terrence Esguerra<sup>2</sup>, Research Adviser

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Software Technology Department, College of Computer Studies,  
De La Salle University-Manila

**Abstract:** Teaching history and its culture currently rely on heavy content information wherein students receive information from the educator. Consequently, this kind of teaching method lacks the learning within the context, leading to unmotivated students which discourages the growth of 21st century skills such as critical thinking and cultural awareness. Affective learning focuses on the emotional part of learning where learners exhibit an emotional response towards a topic that allows students to integrate the values learned during the learning experience. On the other hand, virtual reality (VR) is a known tool to motivate and be used for teaching or learning process. This research aims to use Virtual Reality (VR) 360, with the use of colors to aid students to be motivated and feel the environment or surroundings, as a tool to recreate the culture in the lifestyle of the Filipinos in Intramuros during the 19th Century. This study will examine the effects of Virtual Reality (VR) 360 in teaching Philippine culture during the 19th century to Grade 7 students. Through Krathwohl's Affective Learning Taxonomy, the research aims to tackle how the students would respond once exposed to the simulated environment considering that it is of a different time. This would be achieved through the use of self-report questionnaires and interviews to gather data regarding the behavior and motivation of students in learning the culture of the historical scene with the intervention of VR 360 as learning material. In conclusion, the VR was able to motivate the students although some improvements were mentioned such as detail explanation, realistic art style, and dizziness while using VR.

**Key Words:** Education; Virtual Reality 360; Culture; History; Affective Learning

**ChemRun: Developing a Visual Interactive Laboratory Simulation to be Used as a Supplementary Teaching Tool by Chemistry Teachers in De La Salle University Laguna Campus**

Kaizen Armada, Nathan Andrei Asnan, Kay Eliana Juson,  
and Kyle Ray Ramos  
Myrla Torres, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** Chemistry education comprises of two parts, the theoretical and the practical parts. The practical part of chemistry education is solely dependent on the skills of the students since they are the ones who will manipulate the experiments, however some students find difficulty in conducting the said experiments. With this problem, the researchers aimed to create an application that could help enhance the laboratory skills of the students and for them to be prepared prior to the actual laboratory work. The researchers created a prototype laboratory simulation application that can be used by teachers as a supplementary teaching tool. Since the application is only a prototype, only one experiment from the syllabus of General Chemistry in Senior High School was used. The researchers made use of the waterfall flowchart in organizing the step-by-step procedures in developing the application. Game tests were conducted among different Grade 12 students from the STEM track in DLSU-Laguna campus. After the game test, online surveys were given out to the respondents. Both domains, usability and player experience, garnered statistical scores equivalent to the “Agree” option which denotes good usability and positive player experience. The application has been reviewed positively by the respondents, however there is still room for improvement in terms of aesthetics, user error protection, challenge, fun, and perceived learning.

**Key Words:** chemistry education; experiments; application development; laboratory simulation; supplementary teaching tool

## **PAPER PRESENTATION**

---

### **Computer and Software Technology, and Robotics (CSR)**

## Developing an Assistive Device for the Visually Impaired Using Ultrasonic Sensors for Distance and Solidity Determination

Erin Faith C. Bermudo<sup>1</sup>, Paul Andrew D. Nahiwan<sup>1</sup>,  
Bryan Ernest Jon S. Redoble<sup>1</sup>, Baltazar Carlos Jose M. Reyes<sup>1</sup>,  
Juan Paulo Y. Singzon<sup>1</sup>, and Hiroki M. Asaba<sup>1</sup>  
Clement Y. Ong

<sup>1</sup> *De La Salle University Integrated School (Manila)*

<sup>2</sup> *Computer Technology Department, College of Computer Studies,  
De La Salle University-Manila*

**Abstract:** In the Philippines, there are approximately 340,000 visually impaired Filipinos. Today, the white cane is the most commonly used to aid the blind in navigating their surroundings; however, it allows a range of visualization limited by the length of the stick, while surfaces at closer range are better served by and sensed by hand. This paper presents the development of an assistive device that utilizes ultrasonic sensors to provide both distance and a measure of the density of the surface in the immediate surrounding environment of the user. By providing this information pair, the user may better understand their immediate surrounding environment, navigating it safely and quickly. A prototype was designed and built for the participants to use in navigating an indoor-outdoor course. Trials of the prototype showed that it had a comparable performance with a walking stick with a slightly quicker course navigation time.

**Key Words:** ultrasonic sensor; electronic travel aid; obstacle avoidance; obstacle detection; assistive device

## Viability of Flex and Fabric Sensors for an Assistive Glove for Non-Hearing Employees of Elait Shop in the Philippines

Klariza P. Leander<sup>1</sup>, Shaina Danielle D. Liwanag<sup>1</sup>, Bianca Linette A. Tiu<sup>1</sup>,  
and Shereen Kar Meng C. Tung<sup>1</sup>  
Catherine Manuela L. Ramos<sup>2</sup>, Research Adviser  
Michael V. Manguerra<sup>2</sup>, Co-adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Manufacturing Engineering and Management Department, Gokongwei College of Engineering,  
De La Salle University-Manila*

**Abstract:** Communication is a fundamental part of a person's social interaction. Speaking and listening help hearing people comprehend one another; the Deaf community uses sign language as their shared language. However, not everyone can understand and use sign language. This issue causes a communication gap between Deaf employees and hearing customers, thereby making it difficult to confirm client orders. As an attempt to bridge the gap, the present study aims to characterize the flex and fabric sensors to be used in developing a special assistive glove, similar to other previous projects, but customized for Elait Ice Cream Shop, which hires Deaf people. The employee taking the order will wear the glove, usually, the one operating the cash register, and it will translate a particular statement in sign language into text using a microcontroller, flex sensors, conductive fabrics, and a monitor. The glove helps the customer verify whether the order placed is accurate or not. This study includes a comparison between the two sensors, to determine which is more viable. The conductive fabrics exhibited lower resistance, 15.3 ohms on the average, while the flex sensor in the ring finger had higher resistance of about 82.5 kilo-ohms. Thus, the readout voltages were higher for the flex sensors. Flex sensors produce more defined resistance and voltage values, showing the clear gap between the values for each letter; whereas the pliability of conductive fabrics causes it to fully envelop the bending of fingers and read values with better accuracy.

**Key Words:** glove; Deaf employees; sign language into text

## Project NEON: A Neonatal Transport Incubator

Kate Justine U. Ermitaño<sup>1</sup>, Gwyneth Lee D. Lanuza<sup>1</sup>,  
Francesca Julianne P. Marquez<sup>1</sup>, Alyssandrea M. Rigor<sup>1</sup>,  
and Alyssa Joie F. Tablada<sup>1</sup>  
Michael V. Manguerra<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Manufacturing Engineering and Management Department, Gokongwei College of Engineering,  
De La Salle University-Manila*

**Abstract:** Infants born before 37 weeks of the gestation period are known as preterm or premature babies. Preterm babies require surroundings similar to that of the womb to cope with the external environment. Every hour, numerous babies suffer from a series of complications due to prenatal birth. Several factors could hinder the neonate from getting the medical attention they need immediately, such as distance from the nearest hospital and accessibility of incubators. To address the lack of available incubators, an inexpensive alternative transport incubator will be designed that utilizes locally-available products as its components that will monitor the neonate's vital body functions and will reduce the vibrations that will be received by the neonate at a low cost. This study is limited to the usage of a scale figure of a baby for testing and will only be focused on three components: temperature regulation, humidity control, and vibration reduction. These parts will be tested using a thermostat, hygrometer, and an accelerometer application called VibSensor, respectively. The results after a series of tests are almost close to that of the standard parameters used for neonatal incubators.

**Keywords:** Transport Incubator, Premature baby, Neonate, Neonatal Intensive Care Unit

## **A Grocery Pushcart for the Visually Impaired RFID-Based Micro Navigation System**

Adrienne Arevalo<sup>1</sup>, Lorenzo Miguel Go<sup>1</sup>, Jannah Cornelia Mooring<sup>1</sup>  
and Derick Pan<sup>1</sup>  
Dr. Robert Kerwin D. Billones<sup>2</sup>

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Manufacturing Engineering and Management Department, Gokongwei College of Engineering,  
De La Salle University-Manila*

**Abstract:** Visual impairment is the gradual or sudden inability to see temporarily or permanently because of injury, disease, or a congenital condition. It is a type of sensory visibility that globally affects approximately 1.3 billion people. Due to the limitations that come with the disability, the visually impaired have trouble doing certain tasks. Assistive devices are currently being developed to provide support for those with the condition. These would enable the user to be more independent, improving their ability to do specific tasks to facilitate participation and improve overall well-being. However, such devices have certain limitations and are not readily accessible to the public. In this study, a scale model of an assistive cart will be created using Radio-frequency Identification (RFID) which will be tested on a setting that simulates a grocery. Unlike conventional navigation methods such as Global Positioning System (GPS), RFID can be used for indoor navigation. With that, the visually impaired will be able to shop for groceries more independently. This scale model will be tested using three aisles in a supermarket, assuming the user already has the cart in hand. The study may also contribute to future research regarding assistive devices, allowing assistive devices to be more accessible to the population.

**Key Words:** Visually impaired; Micro navigation; Radio-frequency Identification



## Investigating a Deep-Learning Based Fake Face Identification System

Dan Alden Baterisna<sup>1</sup>, Mon Jericho Sy<sup>1</sup>, Dan Vincent Ong<sup>1</sup>,  
and Justin Naguit<sup>1</sup>,  
Macario Cordel II<sup>2</sup>

<sup>1</sup> *De La Salle University Integrated School (Manila)*

<sup>2</sup> *Computer Technology Department, College of Computer Studies,  
De La Salle University-Manila*

**Abstract:** As technology evolves towards developing more sophisticated means for identity authentication, technology hackers are continuously looking for security weaknesses to exploit. One of the sophisticated approaches in digital security is through biometrics. Biometrics leverage the unique biological traits of every person to control access to a certain system such as mobile devices, online banking, and even own house. A popular feature to use in biometric security systems is the face, due to its uniqueness and ubiquity. However, most facial recognition-based security systems are prone to face spoofing attacks. While there are anti-face spoofing attacks available, these systems are trained on a group of people with specific facial features and thus, suffer high misdetection and false positives. This work investigates on expanding the training set for a counter face spoofing attacks computational model. The model uses a convolutional neural network (CNN), to perform face detection and fake-face recognition. Training and finetuning of the model were performed using publicly available databases and our collected database containing faces from Manila locals, respectively. Results show that the model performs well on the data collected, but symptoms of overfitting are also present.

**Key Words:** face recognition; machine learning; biometrics; digital security; convolutional neural network

## Exploring the Potential Use of Woebot to Alleviate Stress Among the SHS Students of De La Salle University

Johan Oswin C. De Nieva, Jose Andres M. Joaquin, Chaste Bernard O. Tan<sup>1</sup>  
and Ruzel Khyvin Marc J. Te<sup>1</sup>  
Dr. Ethel Chua Joy Ong<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Software Technology Department, College of Computer Studies,  
De La Salle University-Manila*

**ABSTRACT:** The overwhelming amount of academic workload in schools causes students to experience stress and become more susceptible to mental health problems. However, because of the fear of the societal stigma, students may find it more difficult to approach others about the stress they experience. One of the possible solutions to this is through the use of chatbots. Using chatbots, students can freely share the stressful situations they are experiencing without the fear of social stigma or privacy issues. In this study, we investigated the effectiveness of chatbots, specifically Woebot, in alleviating stress among the SHS students of DLSU. To achieve this, 18 respondents had participated and completed the study. Results show that the stress levels of the students were reduced after using Woebot with a level of significance of 0.05. Woebot's likeness to a human was also given a mean score of 5.56 out of 8. Lastly, the ability of Woebot to understand the feelings of the respondents and empathize with them had a mean score of 5.61 out of 8. Based on the chat logs, Woebot was also able to help make the respondent feel better with lessons and stories in many cases, however, it is important to note that there have been cases where Woebot responded inappropriately to the subjects. Our findings showed chatbots are becoming more recognized as a way of helping the general student population cope with stress.

**Key Words:** Stress; Mental Health; Chatbot; Woebot; Cognitive Behavioural Therapy

## Virtual Dungeon Master: Redesigning the Character Models and Game Mechanics in Dungeons & Dragons 5th Edition

Dominic Angulo<sup>1</sup>, Jeremiah Juan Tong<sup>1</sup>, Erin La'O<sup>1</sup> and Denzel Yongco<sup>1</sup>  
Ethel Ong<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Software Technology Department, College of Computer Studies,  
De La Salle University-Manila*

**Abstract:** Video games are a mode of storytelling that uses Human-Computer Interaction to control multiple aspects of the game. Choice-based games are interactive stories that have varying outcomes depending on the player's decisions. The Virtual Dungeon Master (VDM), an interactive story generation software for Dungeons & Dragons (D&D), was developed by Austria, Dungan, Regalado, Unabia, and Ong to take on the role of a human Dungeon Master. It existed as a base for campaigns and did not incorporate many elements of D&D. This study redesigned the Virtual Dungeon Master using the rules of D&D 5th edition by populating the knowledge base and rebuilding the user interface (UI). Using a revised questionnaire by Belen, De Leon, Ibrahim, Uy, and Ong, user satisfaction of 2 non-players and 2 players of D&D with the modified VDM was evaluated. The software was executed in a local server using personal computers, where it could be used by a single person. Their responses were used as preliminary results. They found the UI to be of excellent quality but did not enjoy the generated narratives despite the software already having more in-game elements. Perhaps the way the VDM describes the scenario should be altered since the player's experience relies on how the VDM communicates with him/her.

**Key Words:** Human-Computer Interaction; interactive story; Dungeons & Dragons

## Developing Interfaces for Fake News Detection in the Filipino Corpus

Tricia Dana Y. Acosta<sup>1</sup>, Ira Third L. Burgos<sup>1</sup>, Jose Kristian K. Resabal<sup>1</sup>,  
Cheryl Patricia C. Uy<sup>1</sup>  
Dr. Charibeth Cheng<sup>2</sup>, Research Adviser

<sup>1</sup> *De La Salle University Integrated School (Manila)*

<sup>2</sup> *Software Technology Department, College of Computer Studies,  
De La Salle University-Manila*

**Abstract:** On the internet, fake news is rampant and continues to affect numerous sectors of human life, most notably politics. To combat the problem, one cannot simply rely on human verification as it is tedious and difficult to manage. In this study, the proponents developed Fake Check, a software with 3 interfaces that allow users to quickly detect fake news on social media through the application of a pre-trained detection model. It is also supplemented by a database of real and fake online Filipino news articles that have been collated and verified by a team of administrators. Results show that out of the 3 interfaces, users preferred the browser extension the most in terms of accessibility, ease of use, and aesthetics.

**Key Words:** Fake News Detection; Social Media

## **PAPER PRESENTATION**

---

# **Entrepreneurship, Business Management, and the Organization (EBO)**

## **#PANSAMANTALA : UNVEILING THE LIVED EXPERIENCES OF CONTRACTUAL WORKERS WORKING UNDER SIX MONTHS CONTRACT IN LEGAZPI CITY, ALBAY**

Neil Sheldon Loreto, Javina Lianel Real and Catherine Sus  
Christian Semeniano, Research Adviser

*St. Agnes Academy*

**Abstract:** Using qualitative research, specifically a descriptive case study, the researchers were able to determine the lived experiences of three contractual workers working under six months contract in both private and government institutions in Legazpi City, Albay. Thematic Analysis (Braun & Clarke, 2006) was used to analyze the themes that emerged from the face-to-face interview. Results showed that the challenges faced by the contractual workers are: *struggling with insufficient benefits, experiencing incongruence with educational background and work, having insufficient savings, and experiencing conflict in the workplace*. Despite the challenges that the contractual workers have encountered, *accepting the situation as a contractual, perceiving organizational support, motivating oneself and having daily mindsets, and handling personal life and treating oneself* are the adjustments of the contractual workers. Moreover, *envisioning the future with hope* is how they view their future life as a person. On the other hand, this study revealed a gap between efforts exerted by contractual workers with the amount of benefit and salary they have received. Therefore, the researchers conclude that as globalization increases, the Philippine employment system is also at stake of increasing more job opportunities; however, the risk of increasing unemployment is at risk as well.

**Key Words:** contractual workers; six months contract; contractualization

## The Consumer Behavior and Online Gaming Activity of Senior High School Students (SHS) in Philippine Cultural College – Manila (PCC)

Lanz Maui Z. Chua  
Oscar Deo L. Dacuba, Research Adviser

*Philippine Cultural College – Manila*

**Abstract:** The digital age calls the need for innovation that would adjust to the changing demands of society. While earning \$135 billion worldwide, the mobile gaming industry participates in the rise of the 4th Industrial Revolution by capitalizing on freemium games in which gameplay is enhanced by additional costs. This business model allows gamers to pay for in-game items known as microtransactions which encourage entertainment, social interaction and gaming performance. With the 21st century youth's inclination to technology covering 2.2 billion active players internationally, the study aims to check their exposure to the revenue strategies of game developers and raise their awareness in cautious online shopping. The study adopts the Theory of Reasoned Action, which aids in understanding the consumer dynamics of gamers. The examination of the significant relationship between gaming activity and consumer behavior towards in-game purchases (IGP), which includes the amount of money spent, usage frequency, spending frequency and satisfaction level is done among PCC SHS students as young mobile gamers through Pearson's R. This is followed by the mediation analysis of their perceptions towards game-experience which had a low impact. Although neutral, results indicate that perceived enjoyment and trust impact their purchase intentions for IGP while credit card confidence, time consumption, peer pressure and parental approval yielded lower scores. The data collected from surveys suggest a weak positive correlation between the two main variables highlighting respondents' less vulnerability to availing IGP. Nevertheless, the study fulfills its purpose to educate game consumers about wise expenditure management and responsible consumerism.

**Key Words:** consumer behavior; expenditure management; gaming activity; in-game purchases; mobile gaming;

## **Pushcart or Add to Cart: A Study on the Preference of Millennial Consumers on Shopping Methods**

Juan Carlos Cuaderno, Alliah Pauline Dolor, Hazel Ann Estoy,  
Jessica Paula Manlosa, and Irish Paul Andre Refugido  
Samuel E. Alfon

*San Sebastian College - Recoletos Manila*

**Abstract:** Today, online and traditional shopping are both relevant to consumers, as both shopping methods are convenient in their own ways. Online shopping has evolved in the 1990s up to the present, as it's popularized by its ability to make consumers' lives easier. Traditional shopping is still being practiced in today's age, however, it's gained major competition once online shopping rose in popularity. The focus of this paper is to determine the preference of consumers on different shopping methods. The research is limited to discovering the preferred shopping method among millennial consumers born within the years 1981-1996. One-on-one interviews with validated researcher-made questions were conducted with the respondents. Two theories are used in this study: Veblen's theory of Conspicuous Consumption and Howard and Seth's Model of Consumer Behavior. Respondents reported that online shopping brings convenience in terms of efficiency in product canvassing, purchasing, and delivery. Meanwhile, traditional shoppers highlighted the assurance rate of traditional shopping as the products are inspected upfront before they are bought. These millennial consumers had split opinions on which mode of shopping is superior to the other. Efficiency, convenience, cost, and line of merchandise are all factors that affected the perspective on choosing their method of shopping. The researchers discovered that most millennial consumers favor online shopping as opposed to traditional shopping due to the convenience and efficiency that it brings. However, further research should be done on this topic to discover and emphasize more in-depth and detailed reasons behind the preference of millennial consumers.

**Keywords:** Online shopping; Traditional shopping; Millennials; Preference; Consumers



## Fishermen's Challenges and Meeting the Demand of the Community

Carmela Bautista, Abigail Crisostomo, Jillian Fortier, Sebastian Rama,  
and Jennifer Sevilla  
Dr. Joseline Santos, Research Adviser

*Bulacan State University*

**Abstract:** The Philippines is an archipelago surrounded by different bodies of water; the fish industry has been a popular source of income. Since this kind of business is known in different parts of the Philippines, especially at places where there are surrounded bodies of water like Hagonoy, Bulakan, and Paombong in Bulacan, their economy circulates in the industry of fishing which serves as the locale of the study. In this kind of activity, several challenges can be encountered by fishermen. This study aims to find out if there is a correlation between the fishermen's challenges and the demand of the community and how the different programs of the government can be properly communicated with them. A researcher-made questionnaire validated by the experts was used to measure how challenging the problems that the fishermen encounter and the satisfaction of consumers, retailers, and traders in different aspects. The study utilized a quantitative research method with a correlational approach. The findings of the study show that fishermen are somewhat challenged in their sole proprietorship, environment, and socioeconomic. The community such as the traders, retailers, and consumers, are somewhat satisfied with the services provided by the fishermen. The result reveals that there is a significant negative low correlation between the challenges encountered by the fishermen and the demand of the community. Therefore, the challenges of the fishermen affect the demand of the community in the area.

**Key Words:** community; demand; fisheries; fishermen; fishermen's challenge; supply

## The Influence of Marketing Strategies of Milktea Shops on the Preference of the Consumers

Mira Jirah C. De Guzman, Larisse Ma. Jenaila P. Deramas,  
Justin Rev C. Faustino, Nheil Samoel R. Lopez, Lanz Anjo C. Lorenzo  
Joseline M. Santos, PhD, Research Adviser

*Bulacan State University - Laboratory High School*

**Abstract:** Milk tea business is affluent in the town specifically in Malolos. As this business booms in the market, one problem that owners may encounter is the multiplying number of competitors. Setting up a strong trademark based on the target market supports the longevity of the business. Varieties of gimmick also help the business to be more favored by the people. The study aims to find out the marketing strategies and which of these strategies influence the preference of the consumers. A quantitative research method with a descriptive approach was utilized in the study. In-depth analysis was employed to identify which of the marketing strategies influence the preference of the consumer. The respondents of the study are 10 milk tea shops along Malolos and 100 customers randomly selected from the milk tea shops. The instruments used in the study were researcher-made questionnaires validated by experts. For the managers, it is a four-item questionnaire with multiple response questions to determine the marketing strategies that their milk tea shop use. While the checklist for the consumers is composed of sixteen questions that are answerable through the Likert Scale. The findings show that the consumers consider the location, price and marketing strategies of a milk tea shop. As a conclusion, both respondents find branding the most appealing marketing strategy.

**Key Words:** milk tea; marketing strategy; print media advertisement; internet media advertisement; branding

## **Implications of Pricing Strategies, Product Quality and Socio-Economic Status on Purchasing Private Label and National Brand**

Paul A. Fontanilla, Marcella Dulce, Kelly Dolores, Alyssa Elizan  
and Mary Christine Espiritu Santo  
April Joyce C. Umali, Research Adviser

*University of Perpetual Help - Molino*

**Abstract:** In the present marketing scenario, the study on consumer behavior has become essential. The impetus of this study came from the fact that all the business activities are concerned with consumers and customer satisfaction. Thus, this study aims to identify different perceptions that could guide future consumer research. Anchored on Madhavan and Chandrasekar (2015) Consumer Behavior Model, the study yields both primary and secondary data. A 5- point Likert scale questionnaire was administered to 268 randomly respondents who have visited the public market and supermarket of Imus City, Cavite. The results ascertained that the majority of the respondents perceive that pricing, product quality, and socio-economic status has influenced their purchasing decision when it comes to choosing between private label and national brands. Respondents primarily go for the individual label products that almost have the same equivalent and have a lower price, rather than a national brand, which has higher quality and does require a premium price. The results also revealed that most of the respondents prefer a generic product. On the other hand, some respondents prefer to buy national brands for its sharp brand image and quality assurance. The study provided a marketing implication that is bad news for manufacturers and good news for retailers.

**Key Words:** Consumer Preference; Retailers and Manufacturers; Marketability and Profitability

## **PAPER PRESENTATION**

---

### **Food, Nutrition, and Health (FNH)**

## **A Comparative Study on the Effects of Size and Sources or Traceability on the Price of Identified Fish Species Sold at Muñoz Market, Quezon City**

Raphael Iñaki S. Valenzuela<sup>1</sup>, Jehn Katrice G. Veluz<sup>1</sup>,  
Ian Raphael F. Villanueva<sup>1</sup>, Kenn Michael C. Villarama<sup>1</sup>  
Dr. Allan N. Soriano<sup>2</sup> and Dr. Mudjekeewis D. Santos<sup>3</sup>, Research Advisers

<sup>1</sup> *De La Salle University Integrated School (Manila)*

<sup>2</sup> *Chemical Engineering Department, Gokongwei College of Engineering, De La Salle University*

<sup>3</sup> *National Fisheries Research and Development Institute, Bureau of Fisheries and Aquatic Resources, Department of Agriculture*

**Abstract:** Evaluation for fish species continues to become important in monitoring the supply of fish in the market. This is because issues like aquatic pollution, habitat degradation, and other socio-economic factors significantly impact the species of fish being sold. In addition to this, fish products have become a major source of essential nutrients for the body like protein and polyunsaturated fatty acids. The study serves to understand the essence of the market where fish products are currently being sold by knowing the relations between specific factors. Through the assistance of the National Fisheries Research and Development Institute, the researchers successfully identified the species of fish and their respective sizes. Fish vendors were formally interviewed in order to find out the fish's traceability and price. The study only covered fishes being sold in the Muñoz market for September 2019 to January 2020. After gathering all necessary data, a total of 66 different species were identified. Their sizes ranged from 25 to 563 mm while the prices ranged from 80 to 500 Php/kg. The relation between the average size per species and cost per species exhibited a somewhat direct relationship. However, the prices of fishes did not reflect upon its traceability based on their correlation value. The essence of this study was to properly understand and analyze different factors contributing to a fish market's behavior. All gathered data would also reflect upon the current situation of aquaculture in the country.

**Key Words:** Aquaculture; Fish Species; Omega-3 polyunsaturated fatty acids; Biodiversity; Traceability; Correlation

## Self-Medication Behavior among Adolescent University Students: An Application of the Theory of Planned Behavior

Francesca Leila M. Atienza<sup>1</sup>, Marc Chester Diesta<sup>1</sup>, and Daniel Salazar<sup>1</sup>  
Mr. Wilfred Luis L. Clamor<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Behavioral Science Department, College of Liberal Arts, De La Salle University-Manila*

**Abstract:** “The majority of childhood illnesses [in the Philippines] are treated without consulting a doctor” (Hardon, 1987, p. 280). Self-medication is a common behavior among adolescents whether they reside with their parents or not. The Theory of Planned Behavior is effective in predicting the intentions to perform a variety of health-related behaviors such as self-medication (Pineles & Parente, 2013). This study describes the level of self-medication behavior among university students in Metro Manila using the Theory of Planned Behavior. It is a quantitative research and the sample used is composed of 138 adolescents whose age is within 18-24 years old. Moreover, for this survey, a Likert scale was used. Results have shown that attitudes, norms, and behavioral controls do in fact have a significant correlation towards intention to self-medicate, with attitude and subjective norms having a strong correlation and perceived behavioral control having a moderate correlation. There is also a significant correlation between intention and using conventional medicines in self-medication; however, it is seen as a very weak correlation. This implies that some university students will self-medicate with conventional medicine; however, it cannot be generalized to all of the population due to a weak correlation as seen in the results.

**Keywords:** Self-Medication; adolescents; Theory of Planned Behavior; medicine; over-the-counter medicine; traditional medicine; conventional medicine; herbal medicine; university students

## Assessment of Anthropometric Measurements for the Health Risk Status of the Filipino Cohort Population

Jessica Abacan<sup>1</sup>, Tiffany Chua<sup>1</sup>, Alliah Dela Cruz<sup>1</sup> and Isaiah Yarre<sup>1</sup>  
Dr. Zeba F. Alam<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Biology Department, College of Science, De La Salle University - Manila*

**Abstract:** Diabetes mellitus is a cardiometabolic disease that affects a large amount of the Philippine population. In order to promote early prevention of this disease, anthropometric measurements, which take the physical characteristics of an individual, can be utilized. This paper aims to compare the anthropometric measurements of two groups, those with diabetes and those without, in order to predict the health risk status of the Filipino adult population aged 30-70. It also aims to discover whether the available cutoffs can be used for Filipinos. In this study, five anthropometric were measured, namely body mass index (BMI), waist circumference, waist-to-height ratio (WHR), skinfold thickness, and mid-upper arm circumference (MUAC). The study involves three stages: 1) acquiring participant's general personal information, 2) acquiring participant's anthropometric measurements; and 3) post-survey analysis through t-test, individual statistical analysis, chi-square test, and logistic regression. To conclude, the BMI, waist circumference, and WHR of females proved to be the most accurate in predicting DM risk while the BMI, MUAC, and waist circumference can be variables in the logistic regression model. The BMI and waist circumference Asian cutoffs are also said to be applicable to the Filipino population.

**Key Words:** diabetes mellitus; anthropometric measurements; Filipino; BMI

## **Assessment of Health Literacy and Determination of its Covariates: A Study on Grade 11 Students of De La Salle University Integrated School Manila**

Michael Vincent C. Cortez<sup>1</sup>, Clarence R. Millares<sup>1</sup>,  
Steven Michael G. Segubre<sup>1</sup>, and Philip Andrew A. Valdez<sup>1</sup>  
Karl Man S. Collado<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School – Manila*

<sup>2</sup>*Mathematics and Statistics Department, College of Science,  
De La Salle University - Manila*

**Abstract:** Creation and implementation of better healthcare programs in the country can be achieved through identifying the level of health literacy of the population. However, there is a lack information regarding this topic, making it a hindrance in achieving the said goal. This reinforces the need to investigate further the health literacy levels among Filipinos. In this study, the researchers assessed the health literacy levels of grade 11 students of De La Salle University Integrated School Manila using the Health Literacy Measure for Adolescents (HELMA). The study used a descriptive-multivariate type of quantitative research design. Of the 131 respondents 50.38% have either sufficient or excellent health literacy. Logistic regression was then utilized to determine the significant covariates associated with health literacy. It was found that the individual's knowledge on recent health issues ( $p=0.0387$ ), interest on health issues and concepts ( $p=0.0588$ ), number of languages proficient at ( $p=0.0048$ ) and numeracy skills ( $p=0.0826$ ) are positively associated with the health literacy level.

**Key Words:** Health Literacy; HELMA; Health Literacy Covariates; Logistic Regression



## Method Optimization for Quantification of Antioxidant Compound from *Antidesma bunius* Leaves

Katrina Rose R. Loreto<sup>1</sup>, Hans Nicolson C. Cu<sup>1</sup>, Ryan Dominic L. Lin<sup>1</sup>  
and Sean Lloyd T. Lim<sup>1</sup>  
Phoebe Z. Trio, PhD<sup>2</sup>, Research Adviser

<sup>1</sup> *De La Salle University Integrated School (Manila)*

<sup>2</sup> *Chemistry Department, College of Science, De La Salle University - Manila*

**Abstract:** Natural antioxidants found in plants have numerous biological effects and are used in various application (e.g. medicine, food, and livestock feed additives). *Antidesma bunius*, commonly known as bignay, have been found to be rich in phenolic content. Thus, this quantitative and true experimental study was conducted to quantify the antioxidant capacity and to optimize a chromatographic method for the quantification of antioxidant compound in bignay leaves. Antioxidative capacity was determined by 2,2'-Diphenyl-1-picrylhydrazyl hydrate (DPPH) assay, while anthocyanin was quantified using ultrahigh performance liquid chromatography (UPLC). Results of DPPH assay showed that bignay has an IC<sub>50</sub> value at 140.02 mmol and a % scavenging inhibition ranging from 26.96 ± 1.37% - 59.98 ± 1.33%. In addition, results from the UPLC analysis showed that the amount of antioxidant, in terms of cyanidin 3O -glucoside (C3G), in the samples was 3.62 mg/100 g dry weight following the optimized method, which is gradient elution mode using 1% trifluoroacetic acid and acetonitrile mobile phase with flowrate of 0.5 mL/min flowrate and injection volume of 0.1 mL. The retention time, tailing factor, and resolution were found to be 2.523 ± 0.015 min (RSD = 0.59%), 1.479 ± 0.019 (RSD = 1.28%), and 5.416 ± 0.096, respectively. This suggesting that the method passed the systems suitability test criteria limit. Thus, this optimized method is suggested to also be used to determine the amount of C3G in other sample material.

**Key Words:** antioxidants; anthocyanins; bignay; DPPH; UPLC

## Antimitotic, Antioxidant and Genotoxic Properties of *Voacanga globosa* (Bayag-usa) Leaf Extracts: An In Vitro Anticancer Assessment

Janelle Audre C. Chiu<sup>1</sup>, Verine Y. de Jesus<sup>1</sup>, and Diana Rose C. Rada<sup>1</sup>  
Dr. Hilbert Magpantay<sup>2</sup>, Research Adviser

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Chemistry Department, College of Science, De La Salle University - Manila

**Abstract:** *Voacanga globosa* (Blanco) Merr. , a tree endemic to the Philippines, is used in Bataan as folk medicine to treat ulcers, wounds, and tumors. In this study, the antimitotic and genotoxic properties of *V. globosa* ethanol, ethyl acetate, and hexane crude extracts each of 1500 µg/mL, 1000 µg/mL, 500 µg/mL concentrations with distilled water as the negative control and acetaminophen 800 µg/mL as the positive control, were assessed on onion root meristematic cells using the root elongation assay and *Allium cepa* assay. Results show that *V. globosa* crude extracts exhibited antimitotic properties with the hexane extract showcasing the highest genotoxicity and antimitotic activity, having a percent mitotic index (%MI) of 1.04% and is comparable to that of acetaminophen. Cells showcasing aberrations and cell death including sticky metaphase, anaphasic bridges, irregular anaphase, and ghost cells were observed which indicates high cellular toxicity. Free radical scavenging assay was also done to determine the antioxidant activity of *V. globosa* ethanol and ethyl acetate extracts on 2,2-diphenyl-1-picrylhydrazyl (DPPH) radical. This yielded an IC<sub>50</sub> value of 143.00 ±12.14 and 171.28 ±24.42 for ethanol and ethyl acetate respectively. The results highly imply that *V. globosa* is a promising source for chemotherapeutic drugs due to its high anticancer and antioxidant activity.

**Key Words:** Genotoxicity; *Allium cepa* Assay; DPPH Assay; *Voacanga globosa*

## Kiss Cancer Goodbye: The Anticancer Potential of Watercress and Kale

Marguerita Gabrielle Cabisudo<sup>1</sup>, Johnica Chua<sup>1</sup>, Lorenzo Gabriel Janairo<sup>1</sup>,  
and Mikaela Beatrice Sy<sup>1</sup>  
Raymond S. Malabed<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Chemistry Department, College of Science, De La Salle University - Manila*

**Abstract:** Glucosinolates are naturally occurring compounds usually found in cruciferous vegetables belonging to the family Brassicaceae. Studies have shown that glucosinolates could be converted to their corresponding hydrolysis products, including isothiocyanates, via the action of myrosinase. In this study, the amount of glucosinolates in watercress (*Nasturtium officinale*) and kale (*Brassica oleracea L. var. sabellica*) was quantified using high-performance liquid chromatography (HPLC). Furthermore, the biological activity of the extracts derived from the plants was determined using standard assay methods. HPLC analysis revealed that watercress and kale contain 584.65  $\mu\text{mol/g}$  and 177.35  $\mu\text{mol/g}$  of total glucosinolates, respectively. PrestoBlue™ assay was performed to assess the ability of the aqueous extracts to target cancer cells. Watercress showed anticancer potential towards breast adenocarcinoma (MCF-7, IC50 = 17.67  $\mu\text{g/mL}$ ), pancreatic adenocarcinoma (BxPC-3, with IC50 = 19.74  $\mu\text{g/mL}$ ), and hepatocellular adenocarcinoma (HepG2, IC50 = 14.53  $\mu\text{g/mL}$ ). On the other hand, kale showed anticancer potential towards small lung cancer cell (H69PR, with IC50 = 19.35  $\mu\text{g/mL}$ ) and colon cancer cell (HT-29, IC50 = 18.32  $\mu\text{g/mL}$ ). Moreover, the extracts were found to be noncytotoxic to normal cells (HDFn, human dermal fibroblast neonatal), which indicates that the extracts are selective towards targeting cancer cells. The vegetable samples were also found to exhibit antioxidant properties as assessed by their ability to scavenge the free radical, DPPH.

**Key Words:** Watercress; kale; glucosinolates; anticancer

## **Antimitotic Activity of Tagulinaw (*Emilia sonchifolia*) and Neem (*Azadirichta indica*) Leaves Extract**

Andeo, Lovely  
Gacutan, Almira, Research Adviser

*Treston International College*

**Abstract:** Cancer is one of the most extremely terrifying diseases and is on the lead as the top cause of death worldwide. It is the rapid growth of abnormal cells that causes destruction on the adjacent organs in the body. Although there are several treatments proposed and is available, none of them actually guarantee to cure the disease. Prices of these treatments may also be too expensive for most patients. Having said that, this study aims to evaluate the antimitotic activity of Tagulinaw (*Emilia sonchifolia*) and Neem (*Azadirichta indica*) plants through an Onion Tip Assay. This will help the medical sector in identifying the potential of these plants as anticancer agents. From the results of this study, both plants showed a significant antimitotic activity as they both decreased the root number, root length, and the mitotic index of the samples in comparison to the water control. Aside from that, Tagulinaw (*Emilia sonchifolia*), particularly the third variation, performed closely (with 34.13% mitotic index) to the positive control Methotrexate (with 36.06% mitotic index). Therefore, based on the analysis of variance ( $F > F_{crit}$ ), both plants have an antimitotic ability; thus, also have the potential to be anticancer agents.

**Key Words:** Antimitotic, Cancer, Tagulinaw plant, Neem plant, Onion Tip Assay

## Colorimetric Analysis of Diphenhydramine-Infused Alcoholic Beverages Using Marquis Reagent

Jana Karissa O. Arive, Audrey Marie R. Dayao , Renee Margarete F. Grapilon,  
and Margaritta Rebecca A. Pua  
Leah Madrazo, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Laguna)*

**Abstract:** Date-rape drug is one of the instruments that is being used for rape, especially in cases involving women. The researchers aim to analyze the reaction of diphenhydramine-infused alcoholic beverages through a colorimetric process using Marquis reagent which can identify the presence of drug in a beverage. Increasing amounts of diphenhydramine pills were mixed into beer, gin and vodka. The color test procedure was done through a test tube reaction by mixing the reagent and the beverage. The intensity of the color reactions were then determined using HEX values through the software Adobe Photoshop. A persistent chocolate brown color was observed indicating a positive result in accordance to previous researches. It is also evident that as the amount of diphenhydramine in beer and vodka increases, the intensity of color also increases. Such result can provide baseline information in developing more advanced process and equipment that can detect the presence of date-rape drugs.

**Key Words:** date-rape drugs; diphenhydramine; alcoholic beverages; Marquis reagent; colorimetric reaction

## Use of Sensory Analysis in the Taste Masking of *Andrographis paniculata* (Andrographis) by *Stevia rebaudiana* (Stevia) to Formulate an Anti-Diabetic Solution

Aleighta Daquinag<sup>1</sup>, Adelle Concordia Gingoyon<sup>1</sup>, and Adrienne Ong<sup>1</sup>  
Dr. Jaime Raul O. Janairo<sup>2</sup>, Research Adviser

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Chemistry Department, College of Science, De La Salle University - Manila

**Abstract:** Drug palatability, particularly in bitter-tasting drugs, is a crucial factor affecting medication adherence. As it plays a greater role in patient compliance, the need to be able to produce palatable, natural-based, and cost-effective alternatives to regular available pharmaceutical drugs persists. With previous studies and procedures affirming the anti-diabetic properties of *Stevia rebaudiana* (Stevia) and *Andrographis paniculata* (Andrographis), the researchers formulated an anti-diabetic solution from the combination of the aforementioned flora with the primary aim to mask the bitter taste of Andrographis through Stevia, a natural sweetening agent. In order to validate the flavor profile of the resulting solution, sensory analysis tests such as the 9-Point Hedonic Rating Scale and Preference Ranking were administered to panelists from De La Salle University-Manila. Sensory analysis tests of Andrographis-Stevia mixtures by a trained panel of late adolescents to young adults show that the bitterness of Andrographis can be effectively masked by Stevia at a ratio of 1:13 (i.e. the highest tolerable concentration). Data acquired from the sensory evaluation was analyzed through One-way ANOVA and Friedman Test.

**Key Words:** *Stevia rebaudiana*; *Andrographis paniculata*; Taste masking; Sensory Analysis

## In Vitro Assessment of Antioxidant Activity using DPPH Radical Scavenging of *Musa sapientum* L. (Lakatan Banana) Peels and *Musa acuminata* × *M. balbisiana* (AAB Group) (Latundan Banana) Peels

Seth Anthony N. Dideles<sup>1</sup>, Regina Rya Fe R. Peralta<sup>1</sup>,  
and Kathryn Antoinette E. Tan<sup>1,\*</sup>,  
Mr. James Christopher Chua<sup>2</sup>

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Biology Department, College of Science, De La Salle University - Manila

**Abstract:** Antioxidants, also known as free radical scavengers, are chemicals that have the ability to prevent cell damage. Vitamins C and E, selenium, and carotenoids are among those abundant in antioxidants. The Philippines is among the top five exporters of bananas in the world. In this study, the researchers focused on evaluating the antioxidant activity of *Musa sapientum* L. (Lakatan banana) and *Musa acuminata* × *M. balbisiana* (AAB Group) (Latundan) peels. The DPPH Radical Scavenging method was utilized in order to determine the antioxidant potential of both banana peels. Both *Musa sapientum* L. and *Musa acuminata* × *M. balbisiana* (AAB Group) extracts also underwent phytochemical screening to determine the presence of antioxidant compounds. After the gathered data were analyzed, the researchers then discovered that both *Musa sapientum* L. (Lakatan) and *Musa acuminata* × *M. balbisiana* (AAB Group) (Latundan) have bioactive phytochemicals such as phenolic compounds, flavonoids, and glycosides. It was also discovered that *Musa sapientum* L. (Lakatan) peels exhibited better antioxidant activity than *Musa acuminata* × *M. balbisiana* (AAB Group) (Latundan) peels in this study's DPPH Radical Scavenging Activity. After applying statistical treatment, one-way analysis of variance and comparison of inhibition by Test (Bonferroni) it was found that there was no significant difference among all percentage inhibition.

**Key Words:** antioxidants; banana peels; DPPH Radical Scavenging; phytochemicals

## Characterization of African Baobab (*Adansonia digitata L.*) Fruit Pulp as Pharmaceutical Excipient in Drug Delivery Systems

Hans Emmanuel Gamido<sup>1</sup>, Frances Kayle Fabian<sup>1</sup>, Uriel Anne Bumanlag<sup>1</sup>  
and Ysabelle Francine Siao<sup>1</sup>  
Dr. Jose Isagani Janairo<sup>2</sup>, Research Adviser

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Biology Department, College of Science, De La Salle University - Manila

**Abstract:** The African baobab (*Adansonia digitata L.*) is a massive deciduous fruit tree that is widely regarded for its high nutritional value and income generation in the regions of Africa. One of the factors stimulating interest in the baobab is the hydrophilic nature of its fruit pulp which can be considered in developing new pharmaceuticals. Related researches focus on generating new and effective excipient designs which can efficiently allow controlled release of modern drugs in the body. This study characterized the baobab fruit pulp through a series of phytochemical analyses. The following machines were used to characterize the endocarp of the baobab: Scanning Electron Microscope (SEM), Gas Chromatograph – Mass Spectrometer (GCMS), Fourier-Transform Infrared Spectrometer (FTIR), and UltravioletVisible Light Spectrophotometer (UV-Vis). The SEM revealed the topography of the endocarp, showing the presence of pores indicating great surface area for water to penetrate into. GCMS analysis showed the 5-Hydroxymethylfurfural, 2,6-Di-tert-butyl-4-methylphenol, and n-Nonadecanol-1 as the primary volatile compounds of the baobab fruit pulp which were determined chemically inert. FTIR analysis determined the functional groups of the analyte through the KBr pellet method. Carboxymethyl cellulose (CMC) was the identified compound with -OH, -COO, and -CH<sub>2</sub> groups, making the baobab fruit pulp highly water-soluble. Lastly, UV-Vis analysis showed insignificant data regarding the absorbance of the solution. Analysis of the results suggests that the baobab fruit pulp can be characterized as an excipient in drug delivery systems due to its water-soluble properties, proven through its porous topography and non-reactivity through its inert functional and volatile chemical groups.

**Key Words:** baobab; excipient; Carboxymethyl cellulose; phytochemical analysis; volatile compounds



## Comparative Analysis of *Brassica oleracea* var. *Alboglabra* in Soil-based and SNAP Hydroponics Cultures

Erika D. Descallar<sup>1</sup>, Althea P. Llorca<sup>1</sup>, Karl M. Nicodemus<sup>1</sup>, Margaret T. Papag<sup>1</sup>  
Engr. Amando Perfecto d.I.C. Molin, Dr. Jessica D. Rey<sup>2</sup>, Research Advisers

<sup>1</sup> South Hill School Incorporated, Los Baños, Laguna

<sup>2</sup> Institute of Biology, University of the Philippines - Diliman

**Abstract:** Acknowledging the issue of imbalance in production and consumption and the problem in the transportation of crops in the Philippines, hydroponics is a probable solution to these problems. This study aims to compare the morphological characteristics and the nutrient content of *Brassica oleracea* var. *Alboglabra*, commonly known as Chinese Kale, grown in soil-based and hydroponic set-ups with different nutrients concentrations. The experiment was laid out in Randomized Complete Block Design having 2 set-ups, soil-based and SNAP hydroponics, each having 3 replications. The hydroponic set-up had 3 treatments, Treatment 1 (75% solution), Hydroponic Standard Treatment (100% solution), and Treatment 2 (125% solution) to determine the optimum concentration of the Simple Nutrition Addition Program (SNAP) solution. The plant height and leaf count were measured after the SNAP solution concentrations were modified. The leaf diameters (mm), chlorophyll concentration (nmol/cm<sup>2</sup>), and biomass (g) were recorded at the harvest date. Plant samples underwent a nutrient content analysis. The results showed that the hydroponic setup is more efficient than soil-based farming in terms of morphological characteristics. It was observed that the hydroponic set-up had a higher survival rate by 77.77% and with significantly higher plant height, broader leaf diameters, and greater biomass. Results also showed that Treatment 2 was the optimum concentration of SNAP solution. The organoleptic test showed that the plant samples from the Hydroponic Standard Treatment were the most bitter, and that there is no significant difference in the crispiness among the different treatments.

**Keywords:** Hydroponics; SNAP solution; Kale; Agriculture; Organoleptic

## Anti-angiogenic Activity of Biosynthesized Silver Nanoparticles of Bignay (*Antidesma bunius* (L). Spreng) Stem Extract on Chorioallantoic Membrane of Chick (*Gallus gallus domesticus*) Embryo

Justine Dela Cruz<sup>1</sup>, Veronica Ponce<sup>1</sup>, Janniel Andrei De Jesus<sup>1</sup>,  
Carmela de Regla<sup>1</sup>, Katleen Cantos<sup>1</sup>, Donna Cielo Caluag<sup>1</sup>,  
Charles Rainier Montano<sup>1</sup>,  
Ronilo P. Antonio, MS, LPT2

<sup>1</sup>Senior High School, Laboratory High School, College of Education,  
Bulacan State University, City of Malolos, Bulacan, Philippines

<sup>2</sup>College of Education, Bulacan State University. City of Malolos, Bulacan, Philippines

**Abstract:** Angiogenesis is the formation and growth of vascular network, which is crucial in the proliferation of cancer cells. Thus, the inhibition of angiogenesis is an effective mechanism of slowing down tumor growth and malignancies. This experimental study explored the anti-angiogenic activity of the biosynthesized silver nanoparticles (AgNPs) of bignay ( *Antidesma bunius* (L). Spreng) stem extract using the in ovo chick ( *Gallus gallus domesticus* ) chorioallantoic membrane (CAM) assay. Eighteen six-day fertilized chicken eggs in triplicates were prepared and grouped into four experimental and two control groups. The four experimental groups were exposed to the synthesized silver nanoparticle of *A. bunius* stem extract with varying concentrations (T1=50ppm, T2=100ppm, T3=200ppm and T4=300ppm). The fifth control group served as the positive control (Celecoxib) while the sixth group served as the negative control (distilled water). After the injection, the eggs were incubated for 48 hours and were then placed in a petri dish for observation. The antiangiogenic effect was examined by taking the average number of branch points using the ImageJ Analysis software. Descriptive and inferential statistics, mainly non-parametric Kruskal-Wallis test, were utilized to determine significant differences. Results showed that the 300 ppm concentration had the greatest anti-angiogenic activity considering its lowest mean rank of 7.50. This implies that it recorded the lowest number of branches compared to other treatments. Moreover, statistical results revealed no significant differences in comparison to Celecoxib, suggesting no remarkable difference between the blood vessels of the different treatments and the positive control. Phytochemical analysis showed the presence of saponins and sterols, which may attributed to the anti-angiogenic property of the plant.

**Key Words:** anti-angiogenesis; chorioallantoic membrane assay; bignay; blood vessels

## Angiogenesis Inhibitory Activity of Green Synthesized Silver Nanoparticles of Sinta (*Andrographis paniculata*) Crude Leaves Extract on Chorioallantoic Membrane of Duck (*Anas platyrhynchos*) Embryo

Nash Carlo J. Resurreccion<sup>1</sup>, Jan Loren G. Tugay<sup>1</sup>, Lyka Lorraine P. Alcantara<sup>1</sup>,  
Gabrielle B. Bulaong<sup>1</sup>, Reese Chloe M. Marcelo<sup>1</sup>,  
Aldous Hector S.M. Mundo<sup>1</sup>, Angelo S. Sanvictores<sup>1</sup>,  
Ronilo P. Antonio, MS, LPT<sup>2</sup>

<sup>1</sup>Senior High School, Laboratory High School, College of Education,  
Bulacan State University, City of Malolos, Bulacan, Philippines

<sup>2</sup>College of Education, Bulacan State University. City of Malolos, Bulacan, Philippines

**Abstract:** Angiogenesis, a key player in the proliferation of cancer cells, is the excessive growth of blood vessels from existing vasculatures. This study aimed at generating information on the potential of Sinta (*Andrographis paniculata*) crude leaves extract in green synthesizing silver nanoparticles and its efficacy in inhibiting angiogenesis through the chorioallantoic membrane (CAM) assay using duck (*Anas platyrhynchos*) embryo. Specifically, three experimental and two control groups with three replicates of six-day old fertilized duck eggs were prepared. Three experimental groups were treated with the synthesized silver nanoparticles of Sinta (*A. paniculata*) leaves crude extract with varying concentrations (T1=100ppm, T2=500ppm, and T3=700ppm). The fourth group served as the positive control (Celecoxib) while the fifth group was the untreated or the environmental control. After exposure to the extract, the eggs were incubated and were then placed in a petri dish for observation. The angiogenic inhibiting activity was examined by recording the average number of branch points using the ImageJ Analysis software, specifically the Human Umbilical Vein Endothelial cells (HUVEC) phase contrast analyzer. Descriptive and inferential statistics, mainly non-parametric Kruskal-Wallis test, were used to determine significant differences among the treatments. Based on the results, a calculated chi-square value of .805 is less than the critical chi-square value of 5.9915. The generated asymptotic significance or p-value of .938 is greater than the set alpha level of .05. These findings imply that there were no significant differences in the effectiveness of green synthesized silver nanoparticles of Sinta (*A. paniculata*) leaves extract in comparison to positive and negative controls. Further, phytochemical analysis showed the presence of carbohydrates, reducing sugars, and phytosterols, which might be the bioactive compounds essential in the inhibition of angiogenesis.

**Keywords:** angiogenesis, CAM Assay, silver nanoparticles, cancer, Sinta (*Andrographis paniculata*)

## **Larvicidal Activity of *Cyperus rotundus* leaf extract against *Aedes aegypti* larvae**

Jan Patrick A. Alonzo<sup>1</sup>, Gishelle Anne C. Blanco<sup>1</sup>, Luzila Pauline A. Hipolito<sup>1</sup>,  
Julia Marie Y. Robles<sup>1</sup>  
Ms. Marigold Uba<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Biology Department, College of Science, De La Salle University - Manila*

**Abstract:** *Aedes aegypti* is known for its rapid life cycle, as well as, for its capability to carry diseases such as dengue, chikungunya, and zika virus. Investment in control and prevention is a must to sustain a healthy community. The Philippines has a favorable climate for plants to grow. These plants can be the source for oils. These oils have different chemical compositions that can carry natural larvicide. *Cyperus rotundus*, also known as nut grass, is considered parasitic by local farmers. Though it is considered as the world's worst weed, its small tubers has a potential to be an alternative for insect repellents. *C. rotundus* leaves and nuts are rich in volatile oils that can help alleviate problems in the digestive system, stimulates appetite, and can act as an expectorant. The oils from *C. rotundus* has antibacterial and anti-mutagenic activities. In this study, the researchers utilized the leaves of *C. rotundus* which were gathered from the Science City of Munoz, Nueva Ecija with 70% ethanol. A quantitative analysis was used for the concentration of the extract, and for the analysis of the mortality rate of the *Ae. Aegypti* third instar larvae. The *Ae. Aegypti* were obtained from the Department of Parasitology of the University of the Philippines – Manila. This study hopes to give an organic alternative from commercial larvicides that can be harmful for the environment.

**Key Words:** *Aedes aegypti*; *Cyperus rotundus*; ethanol; larvicide; mosquito

## **PAPER PRESENTATION**

---

### **Family Relations and Structure (FRS)**

## **Shadow Mothers in the Philippines - Associations of Attachment Between Children Left Behind by OFW parents with their Executive Functionality, Psycho-emotional Condition, and Academic Performance**

Gia T. Abella<sup>1</sup>, Crystal Jane F. Calimlim<sup>1</sup> and Andrea Yzabelle Suarez<sup>1</sup>  
Myla M. Arcinas<sup>2</sup>

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Behavioral Science Department, College of Liberal Arts, De La Salle University-Manila*

**Abstract:** This descriptive-quantitative study aims to determine the associations of attachment between children of OFW parents and their nannies with their executive functionality, psycho-emotional condition, and academic performance. This study used a structured online survey as its data collection technique. Sixty children left behind of OFW parents were purposively selected based on following these criteria: that both of their parents work as OFWs for at least six months, that their age range falls between 18-24 years old, and that they had or currently have a nanny. Profile of the respondents shows that the majority (34, 56.7%) are males, and most of them (41, 85.4%) came from high monthly income families as their parents work as OFW. Findings show a moderate level of attachment (2.95) between the children left-behind and their nannies. Outcome variables, which include psycho-emotional condition (3.32), executive functionality (3.30), and academic performance (3.07), likewise showed to be at a moderate level. Their level of attachment shows a significant positive association with their psycho-emotional condition ( $r = 0.272$ ,  $p = 0.036$ ) and academic performance ( $r = 0.276$ ,  $p = 0.033$ ). The presence of a nanny being the substitute mother; therefore, can provide the psycho-emotional support that the respondents need. They also constantly remind them to accomplish their academic requirements. On the contrary, no significant association was found between their level of attachment and their level of executive functionality ( $r = 0.082$ ,  $p = 0.535$ ) Thus, being young adults, they are no longer dependent on their nannies to do their day to day needs.

**Key Words:** children left-behind of OFWs; nannies; executive functionality; psycho-emotional condition; academic performance

## **PAPER PRESENTATION**

---

# **Gender, Human Development and the Individual (GHI)**

## Gender Equality in Classroom based on the Perception and Experiences of Gender Equality of Physical Education Teachers

Kristine Livelò, Michael Louis Luyun<sup>1</sup>, Rondisney Maligmat<sup>1</sup>, and Ziara Mae Rosales<sup>1</sup>  
Dr. Crisanto Q. Regadio, Jr.<sup>2</sup>, Research Adviser

<sup>1</sup> *De La Salle University Integrated School (Manila)*

<sup>2</sup> *Behavioral Science Department, College of Liberal Arts, De La Salle University - Manila*

**Abstract:** The classroom is a space that can be utilized by the teacher to nurture gender equality. In a Physical Education (PE) classroom, however, gender inequality is more pronounced as teachers are found to treat their students differently based on their gender which could negatively affect the student participation, motivation, and performance. The objective of this study is to investigate the promotion of gender equality in the PE classrooms among selected Senior High School and undergraduate PE Teachers. The major findings of the study are divided into four major categories. In gender equality experience, two (2) major themes were generated that oddness invites social judgement and professional success averts gender discrimination. In the perception of gender equality, three (3) major themes were generated: that there's an absence of discrimination, marginalization, and freedom of gender expression. In the classroom, three (3) main themes related to gender equality were generated: the classroom is a space owned by the teacher, a safe inclusive space for students (men, women, LGBTQ), and a space to the gender equality paradigm among the students. In the promotion of gender equality in the classroom, inclusion requires political literacy, flexibility, personal advocacy, and decisive action.

**Key Words:** gender equality; physical education; classroom; gender equality experiences; gender equality promotion



## **Factors that Affect The Psychological Health of STEM 118 Students of De La Salle University Integrated School, Taft Campus and their Relationship to Academic Performance**

Alyana Bondoc<sup>1</sup>, James Cubito<sup>1</sup>, Daphne Javellana<sup>1</sup>,  
Danielle Sobremonte<sup>1</sup>, and Jose Tan<sup>1</sup>  
Regina M. Tresvalles<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*  
<sup>2</sup>*Mathematics and Statistics Department, College of Science,  
De La Salle University-Manila*

**Abstract:** Psychological health is the state of wellbeing where one recognizes their capabilities, copes with daily stressors, and makes societal contribution. This is necessary for all individuals to perform tasks productively. In the case of students, psychological health may affect their school performance. The study aims to determine which demographic characteristics may be considered as factors affecting the psychological health of STEM 118 De La Salle University Integrated School-Taft Campus students and whether they affect their academic performance. The variables collected are the respondents' demographic characteristics (age, number of siblings, and sex); psychological health dimensions (PHDs; anxiety, loss of confidence, and social dysfunction), measured using the General Health Questionnaire (GHQ-12) scores; and academic performance represented by their General Weighted Average (GWA). From a student population of 220, a sample of 102 students was utilized. Tests between age and each of the PHDs show no correlation between them. A significant difference in the anxiety score and social dysfunction score was found between the number of siblings with the use of one-way ANOVA. Additionally, no mean difference between the PHDs of male and female respondents was found. However, a significant difference in the GWA between each sex was found. Tests between the GWA to the number of siblings and to age showed no significant correlation. The test relating the three PHDs to the students' GWA yielded results showing no correlation. The findings of the study show that the students' academic performances are not affected by psychological health dimensions.

**Key Words:** psychological health; psychology; GHQ-12; students;

## **An Evaluation of the Political Participation of Women in the 2019-2020 Student Government of the Senior High School Department of San Beda College Alabang**

Marl Abreu, Ma. Eunique Cea, Mary Martha Manaligod and Caliph Puno  
Catherine T. Basinillo, Research Adviser<sup>1</sup>

*San Beda College Alabang*

**Abstract:** In historical times, women have been known to hold roles based on their gender such as engaging in household and childcare, eventually having limited opportunities in leading. This discriminatory and selective approach has been glued to the mindsets of numerous generations, and the question of whether this has influenced the 21st century remains. By examining the political participation of women in the Senior High School Student Government of San Beda College Alabang, conclusions and suggestions could be drawn out with the use of a quantitative and descriptive design if the said phenomenon is indeed present there. This assessment was made possible through online surveys with ethical standards and distributing such through judgmental sampling as the respondents specified were women student-leaders of the aforementioned educational institution's Senior High School. Descriptive Statistics was chosen as the best method in determining their political performance since it is literally used to describe data. Upon accomplishing the data gathering procedures, the researchers found out that even though these leaders' knowledge, skills, and abilities are satisfactory, their participation is still affected by stereotypical standards and barriers. With this in mind, an action to involve the Administration, Student Government, Student Body, and Women-Leaders to take initiative in recognizing gender equality concerns through committees and research bodies, supporting political women in the field, and promoting solidarity among the gender is recommended and humbly sought in ensuring that females would be encouraged to maximize their potentials and that people in general would be informed of such circumstances without bias.

**Key Words:** political participation; women; leaders; student government; evaluation

## **Wave...Pogi...Wampipti : Impacts of Online Sexual Harassment on the Emotional Response of Male Teenagers in San Sebastian College-Recoletos Manila**

Jermaine Joie B. Gamil, Jose Maria U. Lopez  
Mr. Samuel Alfon, Research Adviser

*San Sebastian College – Recoletos Manila*

**Abstract:** According to ChildNet (2019), sexual harassment produces disproportionately negative outcomes and experiences for women and girls. Indeed, girls are more likely to be targeted with online sexual harassment than boys, but in this study, the perspective of men being harassed with the same sex are being studied. The Politeness Theory of Penelope Brown and Stephen Levinson (1987) is anchored to this study wherein a person depicts his/her two kinds of politeness that are distinguished between negative and positive politeness strategies. Negative refers to strategies that are performed to avoid offense through deference while positive refers to strategies that are performed to avoid offense by emphasizing friendliness. The scope of this study are the male students of San Sebastian College-Recoletos Manila who are ages 16-21 years old. The selected male students should have experienced online sexual harassment, may it be from different social media applications, from the same sex older than them. Thematic analysis is used in this study to evidently analyze the outcome. The results of this study show that the male victims are mostly disturbed and offended of the sexual requests they receive online and it somehow affects their self-esteem as a person in a negative way. Despite the discomfort they felt, a part in them still perceives it as a compliment. In line with this, the researchers recommend organizing more relevant programs and seminar that would tackle the branches of sexual harassment for the public to be more aware and knowledgeable.

**Keywords:** sexual harassment, online, social media, sexual desire, male teenagers

## Dimensions of Psychological Well-being as Predictors of Sleep Quality

Mariz Sambrana, Edriane Cruz, Acharel Bacani, Axel Garcia,  
Patricia Galindez and Hahyun Jang  
Mr. Alfonso B. Astudillo, Research Adviser

*Berkeley School*

**Abstract:** Sleep has been an important component of a person's body. Not only does it give energy to a person, but it can also give health benefits, physically and mentally. This quantitative research was conceptualized to analyze the relationship between the different dimensions of psychological well-being as a predictor of sleep quality. The research is limited only to 350 senior high school students in Baguio City and Municipality of La Trinidad. Its main objective is to discover the relationship between psychological well-being while identifying which dimension of psychological well-being is strongly influenced by sleep quality. The six-factor model of psychological well-being developed by Carol Ryff was used to determine the quality of life of senior high school students while the standard hours of sleep were used to measure sleep quality. Multiple correlations and standard multiple regression analysis were used in the study to verify the relationship between sleep and psychological well-being. Findings revealed that the psychological well-being dimensions Autonomy and Environmental Mastery have a weak relationship with the sleep quality of senior high school students during accomplishing school-related requirements. Despite having a weak relationship, findings revealed significant prediction. Therefore, the dimensions of psychological well-being strongly predict sleep quality among senior high school students. However, not all dimensions influence psychological well-being. The study shows that only Environmental Mastery, Autonomy, Self-acceptance, and Positive Relationships are linked to sleep quality.

**Key Words:** sleep quality; psychological well-being; dimension

## A Case Study on the Perceptions on Masculinity in Filipino Romance Films

Julia Tatjana R. Aycocho and Julianne Erness B. Pua Levie May Leyva

<sup>1</sup>*South Hill School, Inc*

**Abstract:** This study analyzes how the Filipino audience responds to the portrayal of masculinity in Filipino romance films and how it affects them. Focusing on two different sexes and age groups, this research aims to gather perceptions on masculinity and its portrayals in romance movies in the Philippines, traditional or modern in nature; learn needed changes in the depiction of masculinity in films according to the public; and learn the difference of perception between men and women. With this case study, the perceptions of Filipinos are explored in its relation with portrayals of masculinity in Filipino romance films. The data gathered through interview was coded thematically and analyzed using the Male Role Norms Inventory to identify whether perceptions were traditional or modern in nature. According to the results, most men and women, as well as adults and adolescents described the portrayals to have more traditional traits than modern in Filipino romance films and agreed that there were needed changes in these depictions. Both male and female respondents also defined masculinity in a more modern manner. These findings present the more progressive thinking of the Filipino and the prominence of stereotype of masculinity in portrayals within Filipino romance films.

**Key Words:** masculinity; Filipino romance films; portrayals of masculinity; traditional masculinity; modern masculinity

## **Analysis of Individual OCEAN Personality Traits as Predictor of Relationship Satisfaction Among Senior High School Students in DLSU Laguna Campus**

Alfonso Carcereny, Samantha Kurosawa and Catherine Sy  
Ms. Anna San Juan Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** Romantic relationships are highly involved in an adolescent's life even from just as small as talking about it in everyday conversations, or as big as participating in one. There is importance in analyzing adolescent relationship, for it shapes how an individual will perceive future romance in adulthood, such as marriage. In this study, adolescent relationships will be taken into consideration as relationship satisfaction among adolescents will be observed in correlation to their self-assessed OCEAN personality scores. The OCEAN personality model was selected as it has been claimed to be the most widely accepted model used in determining personality. The researchers used a sample of 50 senior high school students from the DLSU Laguna Campus with 25 females and 25 males who are currently involved in a romantic relationship. However, the results of this study showed that OCEAN personality traits are not reliable in predicting relationship satisfaction among adolescents. The relationships between each of the OCEAN personality scores and relationship satisfaction scores ended up weak, very weak, and none at all, with Extraversion among males resulting as the highest predictor of relationship satisfaction, but the likelihood of this relationship is still low. Other studies have found correlation between the two variables when the OCEAN personality traits were partner-reported. However, these findings are based on self-assessed OCEAN personality traits and relationship satisfaction.

**Key Words:** OCEAN Personality; relationship satisfaction; adolescents; romantic relationships

## **PAPER PRESENTATION**

---

# **Living Culture and Contemporary Societies (LCS)**

## Finding Solace in Pain: The Practice of Self-flagellation of the Hugas Dugo in Pakil, Laguna

Natasha Camille M. Hernandez  
Mr. Javier Rugeria, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** During the Holy Week ( Semana Santa ), Filipino Catholics perform several self-mortification acts in commemoration of the passion and death of Jesus Christ. One of which is the self-flagellation practice that has been a tradition in some Philippines towns, where flagellants use whips, rods, and sticks, as instruments of punishment and of voluntary penance. While previous studies by Bräunlein and Zialcita focused mainly on the self-flagellation practices in Pampanga, Bulacan, and Kalayaan, Laguna, the present study focuses on the lived experiences of the flagellants from Pakil, Laguna, the *Hugas Dugo*. In what follows, I discuss the *Hugas Dugo* as a civic organization, its history and by-laws. I also examine their rites, practices, and processes, particularly how they conduct self-flagellation. Second, I explain the motivations behind the continued practice of self-flagellation among the members of *Hugas Dugo*. Through the ethnographic methods of non-participant observation and key informant interviews, I analyze the frequently recurring themes in their responses. These recurring themes include the exchange of favors between God and a flagellant, pag-ako sa pamilya, and healing.

**Key Words:** Self-flagellation; flagellant; Hugas Dugo; Holy Week; Pakil



## **Pansit Hab-hab: A Local Pansit Variety as the Cultural Heritage of Lucban, Quezon**

Ernn Keith D. Elarco  
Gerald L. Latayan, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** Lucban is the first town in the province of Quezon coming from Laguna. It is bordered with other provinces including *Mauban and Tayabas*. Lucban is also known for its famous Pansit Hab-Hab, which is placed on a banana leaf that is traditionally eaten through one's mouth. To determine if Pansit Hab-hab is truly a cultural heritage in Lucban, this study aims to identify the common practices of cooking style and flavors of Pansit Hab-hab, the relationships between the eater and the noodle dish, and the factors for considering Pansit Hab-hab a local food in Lucban. Using ethnography, I conducted my interview with the restaurant owners, vendors, and locals. I also observed the restaurants, miki Lucban factories, and marketplace. Triangulation was used to categorize themes and to analyze the data. Results show that Pansit Hab-hab variants have similarities, since locals use common ingredients and follow the common cooking practice of stir-frying the dish. Generally, Pansit Hab-hab is a friendly food, especially in the streets, since it is affordable and can be eaten in any mealtime. Pansit Hab-hab can be truly considered as a cultural heritage in Lucban, not only because locals still acknowledge the presence of Pansit Hab-hab around the community by conserving its social values, cooking traditions, and eating practice, but also the great contribution that has emerged in the gastronomic culture and food tourism of Lucban.

**Key Words:** Pansit Hab-hab; Lucban; Cultural Heritage; Local Food; ethnography

## The Perception of Filipinos to the Importance of Preserving Heritage Sites: The Case of San Agustin Church in Intramuros, Manila

Joseph Beltrano<sup>1</sup>, Mary Carpio<sup>1</sup>, Patricia Maxine Dela Cruz<sup>1</sup>,  
and Mykaela Marsigan<sup>1</sup>  
Ms. Omega Diadem T. Danganan<sup>2</sup>, Research Adviser

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Behavioral Science Department, College of Liberal Arts, De La Salle University - Manila

**Abstract:** The San Agustin Church in Intramuros is a renowned World Heritage Site, National Historical Landmark and a National Cultural Treasure. Along with modernization and progressive developments, people no longer perceive cultural heritage as a vital instrument for the development of Philippine culture and society. Due to a significant lack of research that tackles the importance of heritage sites of a country, there are currently no concrete policies or secured protection plans in effect that uses perceptions as their focus. Through this research, the role of perceptions in the preservation of heritage sites can be analyzed. The perceptions will be analyzed through the use of two theories: Place Attachment Theory and Social Identity Theory. Data was gathered from the San Agustin Church, different government offices, and residents living within the vicinity of the church. After data collection and data analysis, the researchers coded and summarized the data into six themes that would reflect on all of the responses given by the informants, namely: Significance, Identity, Awareness, Preservation, and Perception. With this study the researchers hope to aid in the recognition and acknowledgement of issues regarding the preservation of heritage sites in a country, specifically in the Philippines.

**Key Words:** San Agustin Church, Perceptions, Heritage Sites, Preservation

## Community Formation and Integration: The Experience of Cordillerans in Barangay Kalusugan, Quezon City

Kiarra Ritz C. Caballero<sup>1</sup>, Sophia Hermione Andrea Nicole T. Fernandez<sup>1</sup>,  
Achaiah Deanne S. Sayson<sup>1</sup> and Bianca Beatriz E. Sevidal<sup>1</sup>  
Dr. Crisanto Q. Regadio, Jr.<sup>2</sup>, Research Adviser

<sup>1</sup> *De La Salle University Integrated School (Manila)*

<sup>2</sup> *Behavioral Science Department, College of Liberal Arts, De La Salle University - Manila*

**Abstract:** This study investigates the process of community formation and the integration of Cordilleran migrants in Barangay Kalusugan, Quezon City. The expansion of the Episcopal Church in the Philippines (ECP) led the emergence of a distinct Cordilleran community in the barangay, following the Church's concentration policy among the Igorots since 1901. Religious leaders and faithful servants of the Church migrated to Metro Manila to establish churches and religious formation schools and eventually, a residential community in Quezon City. The reception of the non-Cordillerans was primarily influenced by the appointment of an Igorot as the first barangay captain and the capacity of the ECP to provide health, education, and religious services. The Cordillerans' dependency on the assistance offered by the Church enabled them to create a "self-content community", which has gradually translated into a heightened division between the two groups. Their acknowledgement as members of the barangay and their conformity to the urban lifestyle were instrumental in their integration; yet, the relationship between the host and the migrant communities merely exists to fulfill their geo-political needs. The self-representation, self-understanding, and lifestyle of the Cordillerans in Barangay Kalusugan have been shaped by their residence in an urban setting. As such, they have become less distinct and odd from the other members of the barangay. However, their distinct Episcopalian religious identity and ethnic identity as a Cordilleran are both an underlying circumstance either towards the path of integration or further division.

**Key Words:** internal migration; Cordillerans; tokenism; socio-territorial belonging; geo-political community

## The Filipino “Stan” Phenomenon as Participatory Culture: The Case of Generations X and Z

Rhicki Bermudez<sup>1\*</sup>, Kimberly Cham<sup>1\*</sup>, Leila Galido<sup>1\*</sup>, and Karen Tagacay<sup>1\*</sup>  
Wilfred Luis Clamor<sup>2</sup>, Research Adviser

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Behavioral Science Department, College of Liberal Arts, De La Salle University - Manila

**Abstract:** In recent years, the online world is soaked in ‘stan culture’, where fandoms, collaboratively express their idolization for a certain artist, group, other famous personalities or crafted content. The study focuses on the Stan Phenomenon as a Participatory Culture, a concept created by Henry Jenkins and his colleagues, within Generation X and Generation Z of Filipino stans only. Participatory Culture (2007) is a concept where various people share ideas, creations, expressions and information within a community through means of socialization in various mediums available. Participatory Culture is also used as the conceptual framework of this study and is comprised of four functions, namely fan affiliations, expressions of fandom, collaborative problem solving, and network circulations. The data gathering was conducted through one-on-one interviews with 10 Generation X participants and another 10 for Generation Z and the study utilized Braun and Clarke’s Thematic Analysis (2006) in order to examine and dissect the recurring patterns from the data gathered. In conclusion, though the term ‘stan culture’ is relatively new, it has been steadily occurring with the aid of technology and its advancements throughout the years (i.e. Social Networking Sites). Stan Culture has been manifested differently per generation, specifically in Generation X and Generation Z in accordance to the scope of this study, a big factor of which being the availability of mediums and the personal preferences of who or what they idolized, their expression in idolization, and the collaboration within their own communities, which settles the difference in manifestations of this phenomenon.

**Key Words:** fandoms; stan culture; participatory culture; generation x; generation z

## Experiences of Defensive Behavior on Conflict Resolution Among People in Romantic Relationships

Julianna Abelong<sup>1\*</sup>, Oxana Hernandez<sup>1</sup>, Janah Kalalo<sup>1</sup>, and Angel Serrano<sup>1</sup>  
Dr. Diana Therese Veloso<sup>2</sup>, Research Adviser

<sup>1</sup> *De La Salle University Integrated School (Manila)*

<sup>2</sup> *Behavioral Science Department, College of Liberal Arts, De La Salle University - Manila*

**Abstract:** This study aims to determine the experiences of defensive behavior in romantic relationships, in relation to the couple's conflict resolution approaches, and their attitudes toward relationships. The researchers interviewed 12 unmarried couples, including six opposite-sex and six same-sex couples, who had been together for at least three years, whose ages ranged from 20 to 39 years old, and who were residing in Metro Manila. Based on the data gathered from the couples, defensive behavior was often manifested by anxious partners who have the fear of rejection and abandonment. Couples in both opposite sex and same sex relationships exhibited defensiveness that commonly arose during conflicts. Couples of the opposite sex were more likely to resolve their issues immediately as they were more open in communicating with their partners. Same-sex couples, however, tended to take time to resolve their conflicts or drop their arguments completely due to the avoidant approach that these couples commonly possessed. The researchers found that defensive behavior could actually affect romantic relationships, particularly in delaying conflict resolution. However, it does not hinder nor weaken these relationships. Rather, it promotes acceptance from both parties and helps the couple to work with their differences and adjust their responses to their partners' defensive behavior.

**Key Words:** defensive behavior; romantic relationships; conflict resolution; relationship attitudes; relationship characteristics

## **Virtual Po at Opo: The Level of Awareness of Sebastinian Students Towards Facebook Netiquette**

Ivhone V. Balasbas, Jazel Mae M. Justo, and Renee Zhakira M. Mailom  
Paul Racel M. Placer, Research Adviser

*San Sebastian College – Recoletos de Manila*

**Abstract:** As the online community in the Philippines grows, especially through social media like Facebook, issues regarding proper online interaction begin to rise. The study aimed to determine the level of awareness towards Facebook netiquette of the senior high school students from the STEM and ABM strands of San Sebastian College – Recoletos de Manila. The study was anchored on the Social Learning Theory introduced by Albert Bandura in 1977, since people nowadays bandwagon on what they observe in their online surroundings. In addition, the behaviors exhibited by people are rooted in their own intentions; which is also stated in the Theory of Reasoned-Action that was developed by Martin Fishbein and Icek Ajzen in 1980. The researchers used the quantitative method; descriptive design of research, purposive sampling technique, and a Likert scale type questionnaire in order to measure the respondents' level of awareness regarding Facebook netiquette. The results found that the respondents have a high level of Facebook netiquette awareness. The study provides further insight on netiquette awareness in students who are Facebook users.

**Key Words:** Facebook; netiquette; social media; Social Learning Theory; Theory of Reasoned Action

## Snail Mail, Email, Text, Chat: Baby Boomers' Coping Mechanism in Crossing the Boundaries of Communication

Mary Emilene De Vela<sup>1</sup>, Ranzelle Bayani<sup>2</sup>, Regina Villamor<sup>3</sup>,  
and Frank Segura<sup>4</sup>  
Mr. Paul Racel M. Placer, Research Adviser

<sup>1</sup> *San Sebastian College – Recoletos de Manila*

**Abstract:** According to studies, boomers are no less enthusiastic about modern technologies, but now are as likely to learn about technologies from their children who are part of the youth as they are from peers, who themselves are recent converts and are most likely to adapt in the modern use of technology as well as the communication system. The researchers used Social Cognitive theory to understand the environmental influence of their coping mechanism upon crossing the boundaries of communication. The study focuses on the respondents from the NCR Region who considered themselves as baby boomers through a phenomenological approach of the study. The interviews were semi-structured. A list of questions to be discussed was prepared prior to the interview. The researchers found that the participants were greatly influenced by their family members upon using email and online messaging applications. They needed it mostly for work, in order to have an easier way of reaching out to communicate with relatives overseas and for the establishment of good social relationships. Considering that they have experienced a variety of old ways in communicating, they learned on how to cross those boundaries through the help of their children and grandchildren, being part of the youth who are more knowledgeable about the ways and uses of the modern communication system today.

**Key Words:** baby boomers; modern communication; snail mail; technological advancement; social cognitive theory

## **Finger-Based Counting and Real Objects: A Comparative Study on Learning Single Digits of Bihog Tribe (Aeta)**

Christine Joy Aureus, Kyle Marwin Renes, Jimmy Fabito Jr.,  
Emart Garrido, Joshua Lerios, Rodel Papiona,  
Reyven Villafuerte Samboy Niala, Research Adviser

*Tagkawayan National High School*

**Abstract:** The study focused on the effective teaching strategies and performance of Bihog tribe (Aeta) in counting single digits. Moreover, it also aimed to find out the significant differences in teaching single digits using finger-based counting and real objects. The researchers used quantitative research through quasi-experimental. Pre-test and post-test were used to identify the performance of Bihog tribe (Aeta) in counting single digits. Moreover, the qualitative ethno-mathematics approach was used for teaching real objects. The researchers used real objects that can be found in their land. The respondents were consisted of 15 young Bihog tribe (Aeta) members that were purposively selected. However, the researchers cannot identify the ages of the respondents because of the undocumented records, thus, the researchers chose the respondents that were probably in the ages of three to seventeen years old. The study was conducted in Sitio Mapatong Tagkawayan, Quezon. The researchers walked for almost three hours to reach the community. Pre-test revealed that the Bihog Tribe (Aeta) has a low level of performance in counting single digits. The respondents got a 0.13 mean in the pre-test of finger-based counting and a mean of 0.4 in counting real objects. The Aeta community had a poor performance in pre-test. Post-test revealed that the most effective strategy in teaching single digits was teaching through real objects or ethno mathematical approach. Finger-based Counting got an 8.33 average mean and 8.73 mean in counting through real objects out of 9.00. The respondents performed excellent in the post test in both finger-based counting and real objects.

**Key Words:** Aeta; Bihog tribe; counting single digit number; ethno mathematics; post-test; pre-test; real objects



## Statistical Modeling of Academic Performance of ID 118 Senior High Students of De La Salle University coming from Chinese Schools and Non-Chinese Schools

Jean Andrea Nicola T. Banzon<sup>1</sup>, Lance Christian S. Guiling<sup>1</sup>,  
Richard Steven G. Lee<sup>1</sup>, Kenji D'Angelo C. Lim<sup>1</sup>, and Elijah Manuelle S. Yulde<sup>1</sup>  
Angelo M. Alberto<sup>2</sup>, Research Adviser

<sup>1</sup> *De La Salle University Integrated School (Manila)*

<sup>2</sup> *Mathematics and Statistics Department, College of Science,  
De La Salle University-Manila*

**Abstract:** There is a stigma in this generation that students who come from Chinese schools are better in academics compared to students who come from non-Chinese schools. This study focuses on statistical modeling of the academic performance of ID 118 Senior High School students in De La Salle University-Manila (DLSU SHS) who finished Junior High School from Chinese Schools versus those from non-Chinese Schools. The study also aims to identify the significant factors that explain a student's grades. A pre-survey was conducted to stratify the ID 118 population into the two types of schools. From each, a random sample was taken, and the main survey administered. Spearman Test, Gamma Test, and Mann-Whitney-U Test were used to identify variables that are individually related to academic performance among Chinese school students, non-Chinese school students, and both of them combined. From these, statistical models were made using Ordinal Multinomial Regression and Logistic Regression, to show how specifically the variables explain academic performance. After backward elimination, both modeling procedures arrived at sex and whether or not a student is running for honors as significant predictors of academic performance. All other variables - including type of school - were found to be insignificant in explaining academic performance.

**Key Words:** academic performance; logistic regression; ordinal multinomial regression; statistical modeling; Chinese students

## **A Study on the Views of Women Working in Blue-and-White-Collared Professions in Metro Manila on President Rodrigo R. Duterte's Misogynistic Remarks**

Rowena Teresa V. Antenoracruz<sup>1</sup>, Christianne Marie F. Calimbahin<sup>1</sup>  
and Patricia Eunice A. Panga<sup>1</sup>  
Dr. Diana Therese M. Veloso<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Behavioral Science Department, College of Liberal Arts, De La Salle University-Manila*

**Abstract:** This study was aimed to identify the views of women working in blue-and-white collared professions in Metro Manila towards President Rodrigo R. Duterte's misogynistic remarks. It determined the views of women in relation to their socio-demographic characteristics, which include their ages, educational backgrounds, religions, and civil statuses. Informants' views were also primarily influenced by their work-related characteristics such as their monthly incomes and working environments. Additionally, collar colors were a major factor affecting their perception of President Duterte's misogynistic remarks. This study found out that women from the blue-collared professions were likely to be unaware of the misogynistic remarks made by President Duterte. They believed that there are men who are naturally ill-mannered with tendencies to sexualize women. In contrast, the white-collared professions were more familiar with the President's misogynistic remarks. They deemed these to be foul and offensive. Furthermore, the informants, regardless of their sociodemographic and work-related characteristics, established that these misogynistic remarks by President Duterte may be a factor in the normalization of sexual harassment and may also lead to the further prevalence of sexual objectification in the Philippines. Hence, the study intends to raise awareness regarding the possibility of objectification and repression towards women due to the influential and predominant role of President Rodrigo R. Duterte in the Philippines.

**Key Words:** women; blue-collared professions; white-collared professions; misogyny; sexual harassment

## **St. Benedict Medal: Religious Sacramental or Anting-Anting? A Case Study on the Syncretic Beliefs and Practices in Philippine Catholicism**

Paula Nicole Alano  
Sir Javier Rugeria

*De La Salle University Integrated School (Laguna)*

**Abstract:** The arrival of the Spaniards in the Philippines brought changes to the culture of the Filipinos, specifically in the aspect of religion. The existing pre-colonial religions of the Filipinos have been influenced with the elements of Catholicism and resulted to folk Catholicism, which simply refers to the localized form of Catholicism. The St. Benedict Medal is the finest example of a Catholic object that has been localized by some Catholic devotees. In this research, I first discuss the functions of the St. Benedict Medal as a sacramental according to the teachings of the Catholic Church. Next, I discuss the functions of the St. Benedict Medal according to the beliefs of the antingeros in Quiapo, Manila. Lastly, I compare and contrast the two perspectives and analyze the convergences and divergences therein. In answering these questions, I conducted on-site and one-on-one interviews revolving around the practices and beliefs on the St. Benedict Medal. Throughout my research, I have illustrated convergences and divergences from the beliefs on the medal that may be controversial, but hold reasons why some Filipinos perceive the St. Benedict Medal in a manner they want. The results of this paper affirm that the Filipino culture can still be preserved despite a colonization with the St. Benedict Medal as an example.

**Key Words:** Catholicism; sacramental; anting-anting; St. Benedict Medal; localization

## **PAPER PRESENTATION**

---

### **Materials Engineering (MEN)**

## Mechanical Properties and Durability of Mortar with Rice Husk Ash Produced from Steam Generation Plant

Francis Donald P. Alfonso<sup>1</sup>, John Nathanael C. Cadiente<sup>1\*</sup>,  
Gabrielle Nicole T. Laudencia<sup>1</sup>, and Isabela Angela A. Raval<sup>1</sup>  
Engr. Joenel G. Galupino<sup>2</sup>, Research Adviser

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Civil Engineering Department, Gokongwei College of Engineering,  
De La Salle University-Manila

**Abstract:** Rice husk is a byproduct of rice production widely used as a biomass fuel by generation plants. The burning of rice husk yields to another waste called rice husk ash which is often disposed improperly despite its useful properties in mortar production. The high amorphous silica content, cementitious properties and high pozzolanic reactivity of rice husk ash contributes to the enhanced mechanical properties of mortar, a fundamental construction material. Numerous studies conducted experiments involving partially replacing cement with rice husk ash, however, burned at controlled conditions. Hence, the main objective of the study is to manufacture mortar using residual rice husk ash from a biomass fuel company that exhibits pozzolanic properties. Mortar cubes cured at 28 days with 0, 5, 10, and 15 percent replacements of cement will be produced, and the mechanical properties will be measured using compressive strength test and water absorption test. Results show that it is feasible to manufacture mortars containing rice husk ash from a steam generation plant. The mortars achieved maximum compressive strength at 5% replacement but decrease once the replacement was more than 5% while it reached high water absorption as the replacement increase. Therefore, it is optimal to use 5% rice husk ash replacement in producing mortar.

**Key Words:** mortar; rice husk ash; compressive strength; durability

## A Comparative Study on the Incorporation of Fly Ash and Seawater into Mortar

Rijan C. Opalla<sup>1</sup>, Audrey Gabrielle P. Tan<sup>1</sup> and Louise Angela V. Villamin<sup>1</sup>  
Engr. Cheryl Lyne C. Roxas<sup>2</sup>, Research Adviser

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Civil Engineering Department, Gokongwei College of Engineering,  
De La Salle University-Manila

**Abstract:** This study compared mortar incorporating fly ash and seawater to conventional mortar mix in terms of compressive strength and workability, as well as microstructural development through analysis with scanning electron microscope (SEM) technology. Conventional mortar production uses ordinary Portland cement, a source of carbon pollution, and freshwater, a scarce resource. As fly ash is a pozzolan, it can partially substitute ordinary Portland cement. While use of fly ash in mortar reduces workability and increases drying shrinkage, these deficits may be counteracted by replacing the mixing water with seawater, which is also a more abundant resource. The mortar cubes compared were produced using either seawater or freshwater as mixing water at 0, 10, 20, and 30% fly ash replacement and tested at 7, 14, and 28 days. It was found that the mixes using seawater had lower workability than the mixes using freshwater, and that workability decreased further the more fly ash was present in the mix. A direct relationship was observed between the 14th day strength of the seawater specimens and the percentage of fly ash, while the strength of freshwater specimens peaked at 10% fly ash replacement. SW-20, the seawater mix at 20% fly ash replacement, had the highest compressive strength. Thus, it was concluded to be the optimum mix design for practical applications in terms of strength, as well as being cheaper due to partially replacing OPC with the cheap and abundant fly ash, a waste product of coal-powered electrical plants.

**Key Words:** fly ash; seawater; workability; compressive strength; SEM

## Synthesis and Characterization of Chitosan-clay Hydrogels for Lead Removal

Matthew Kyle T. Ang<sup>1</sup>, James Daniel P. Cudo<sup>1</sup>, Loise Kassandra M. Tizon<sup>1</sup>,  
Angela Terese N. Yu<sup>1</sup>, and  
Dr. David P. Peñaloza Jr.<sup>2</sup>

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Chemistry Department, College of Science, De La Salle University - Manila

**Abstract:** Hydrogels are three-dimensional structures formed from physically or chemically crosslinked polymer chains. Hydrogels are of significant interest industrially because they are stable and can retain a large amount of fluids, such properties are ideal for heavy metal removal applications. This study reports a simple preparation of chitosan-clay hydrogels designed for Pb removal in contaminated water. Chitosan (CS) hydrogels filled with kaolin clay at 0% (control), 5% and 10% by mass were prepared by solution casting method. Stable chitosan (CS)clay hydrogel films were successfully prepared and were found to exhibit remarkable swelling capacity (doubled that of CS film only) and increased Pb uptake characteristic. Pb uptake was determined by atomic absorption spectroscopy (AAS) while surface morphology and elemental analysis (EDX) of the films were characterized using a scanning electron microscope. At 10% by mass loading, CS-clay hydrogel film was able to recover 21.23 mg Pb per gram of hydrogel, this is 42% better than that of the CS hydrogel film only. SEM analysis further supports the results of the Pb uptake measurements – when Pb is confirmed through EDX measurement to be present in the CS-clay film after immersion.

**Keywords:** hydrogel; clay; lead removal/uptake

## Shells and Microcrystalline Cellulose from Peanuts (*Arachishypogaea*) as Additives to Cassava Starch-Based Bioplastic Film

Jane Harriet C. Bazarte<sup>1</sup>, Maxime Raphael R. Cendaña<sup>1</sup>,  
Ethan Jay O. Onquit<sup>1</sup>, and Allyza Cristina S. Tejada<sup>1</sup>,  
Shelah Ramirez-Alfaro<sup>1</sup>

<sup>1</sup> *De La Salle University Integrated School (Laguna)*

**Abstract:** Additives derived from agricultural peanut shell wastes were used to determine their effects on the mechanical properties of cassava starch-based bioplastics. The presence of microcrystalline cellulose (MCCs), isolated from peanut shells through alkali treatment and acid reflux, was confirmed using a scanning electron microscope (SEM) and were added to the bioplastic base. Peanut shells were also used as additives after boiling and were ground into a fine, powdery state. Thermogravimetric analysis tests revealed that the addition of MCC resulted in a 9.7% increase in heat resistance and a 3.31% increase in biodegradability while the addition of ground-up peanut shells resulted into an 11.1% increase in heat resistance and 0.45% increase in biodegradability, compared to the bioplastic base without additives.

**Key Words:** bioplastics; peanut shells; microcrystalline cellulose; plasticization



## Tensile Tests of Quench-Tempered Thermo-Mechanically Treated (QT/TMT) Non-Welded and Welded Reinforcing Steel Bars

Kassandra Renee D. Baria<sup>1</sup>, Arciebelle Brijine C. Crisostomo<sup>1</sup>,  
Jullianne P. Dizon<sup>1</sup>, Justin Laurence G. Jacinto<sup>1</sup>,  
Randy B. Salazar<sup>2</sup>, and Lessandro Estelito O. Garciano<sup>3</sup>

<sup>1</sup> Senior High School Student, De La Salle University - Manila

<sup>2</sup> Graduate Student, De La Salle University - Manila

<sup>3</sup> Professor, Civil Engineering Department, De La Salle University - Manila

**Abstract:** Steel reinforcing bars are extensively used in the construction industry. In recent years, QT/TMT rebars have slowly replaced micro-alloyed (MA) bars. However unlike MA bars which have a uniform micro-structure, QT/TMT rebars exhibit a hard-outer (brittle) layer and a soft (ductile) inner layer. Due to this layered internal structure its tensile strength can be reduced especially when extreme heat (welding) is applied. During construction welding is often used to join reinforcing bars at very high temperatures. This process presents a structural engineering issue that is why authors studied the effect of welding specifically on the tensile strength of 16, 20 and 25 mm. diameter QT/TMT bars. Results of the experiment show that all non-welded reinforcing bars meet the ASTM minimum tensile strength requirement of 620 MPa but only the 16mm and one of the 25mm diameter welded rebar meets the minimum tensile strength of 620 MPa. The strength to yield strength (  $t_s / y_s$  ) ratio of welded and non-welded reinforcing bars of 16, 20 and 25 mm. diameter were also determined in the test. Results show that only the welded 16mm diameter re-bar meets the minimum requirement of the (  $t_s / y_s$  ) ratio of 1.25. Based on these results, it is seen that the welding process affects the tensile strength of QT/TMT rebars. This research will shed light on the restrictions indicated in NSCP 2015 Section 420.7.6 for welded QT/TMT rebars.

**Key Words:** QT/TM; tensile strength; yield strength; welding; NCSP

## **PAPER PRESENTATION**

---

### **Media and Philippine Studies (MPS)**

## The Desensitization of DLSU Senior High School Students to Physical Violence in the Media and in Real Life

Camille Ang<sup>1</sup>, Christine Labro, Jullia Laydia<sup>1</sup>, Kathleen Marasigan<sup>1</sup>,  
Lexine Roman<sup>1</sup>  
Ms. Rica Arevalo<sup>2</sup>, Research Adviser

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Communication Department, College of Liberal Arts, De La Salle University - Manila

**Abstract:** This study primarily aims to determine the desensitization levels of DLSU-Manila SHS students to physical violence in media, with sex, extent of exposure to media and real-life violence, empathy, and trait arousability as the study's main variables. The first three mentioned are the independent variables, while the latter two are the dependent variables as well as the determinants for the levels of desensitization of the sample. The researchers randomly sampled from the DLSU SHS community, and sent out online questionnaires that contain questions regarding the aforementioned variables. The researchers conducted a factorial analysis of variance on the said variables to analyze their data. It was found that the levels of desensitization of DLSU-Manila SHS to physical violence are high due to their high levels of empathy and trait arousability. Additionally, their extent of exposure to real-life violence has a significant effect on their empathy levels, while other factors like sex and exposure to media violence appeared to have no significant effects on their empathy levels and trait arousability.

**Key Words:** desensitization; exposure; media violence; real-life violence, males and females, empathy, trait arousability

## Activism in the 21st Century: Utilization of Social Media as a Tool for Protest

Kristel Marie Aguilar<sup>1</sup>, Danica Bianca Ang<sup>1</sup>, Michaela Charbelle Geronimo<sup>1</sup>,  
Maricar Angela Leyesa<sup>1</sup>, and Lindsey Therese Lim<sup>1</sup>  
Gerardo A. Mariano<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Communication Department, College of Liberal Arts, De La Salle University - Manila*

**Abstract:** With the help of social media, protest is now being practiced, promoted and criticized by brand new means (Tufekci & Wilson, 2012). Facebook, in particular, has been a common online space utilized by activists for their protest (Valenzuela, Arriagada, & Scherman, 2014). The researchers aim to examine how this additional platform that facilitates protest and interaction arguably creates an extension of these progressive groups' identity and the execution of their corresponding protest activities, as discussed in Erving Goffman's concept of social establishments and the dramaturgical perspective in his theory on the "Presentation of Self in Everyday Life". To put this objective into fruition, the researchers have collected 314 Facebook posts made by Anakbayan, a prominent Filipino progressive student organization, from the years 2016 to 2018. With this, the group has constructed a coding sheet that aims to collect details on every post's content, which includes its format, issues mentioned, engagements, protest activities mentioned and tones. Through content analysis, the group was able to gather how some posts that mention protest activities fail to receive high engagements despite what some literature may suggest. However, there are posts on protest activities that do support the claims of previous studies, specifically on the intention behind these posts.

**Keywords:** social media; protest; progressive; Facebook posts

## Art Under the Fascist Party: Analysis of KALIBAPI's Propaganda Posters during the Japanese Occupation

Alexander Lance L. Queppet  
Mr. Christian P. Gopez, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** The *Kapisanan ng Paglilingkod sa Bagong Pilipinas* (KALIBAPI), who supported the Japanese occupation, was organized by Benigno Aquino III and Jorge Vargas. KALIBAPI presented itself as a political party who aimed to promote nationalism among Filipinos. They advocated the idea of the *New Philippines* and the “new order in East Asia” that were introduced by the Japanese colonizers. The propaganda posters show the elements of independence from Western influence and pro-Japanese images. However, the *New Philippines* was yet another propaganda technique by Japan to colonize the Philippines. To explain how KALIBAPI promoted their political cause in their posters and portrayed the New Philippines, the following were analyzed: *Roosevelt, the World Enemy No. 1, Join the Philippine Constabulary, Crush Anglo - Americans! Build the New Philippines, Isang Watawat, Isang Bansa, Isang Wika and March on to the Independence*. The researcher used the three levels of semiotic analysis: the Basic Semiotic Plane, Iconic Plane, and the Thematic Plane. Following the three levels, the symbolisms and the relationship between the elements and the audience were analyzed. The propaganda was also situated in the context of the Philippines during the Japanese occupation.

**Key Words:** KALIBAPI; New Philippines; Semiotic Analysis; Propaganda Posters; World War II

## **Clash of Chants: A Comparative Discourse Analysis of Pro- and AntiDuterte Public Demonstration Chants**

Elisha Nañola

Mr. Christian P. Gopez, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** The rise of Duterte in power has also emphasized the division in political opinion among the public. In the streets where both pro- and anti-Duterte groups exclaim their grievances and/or impressions to the present administration, the significance of chants, that supposedly encompass the intended message of public demonstrators in its conciseness, are of interest to the paper. Adopting the first level of the socio-cognitive approach to critical discourse studies, the paper analyzes both anti- and pro-Duterte chants through the identification of recurring themes, analysis of how ideologies and identities are made evident in language use, and the comparison of the microstructure analysis of the chants. Van Dijk's socio-cognitive approach is especially useful and relevant to the paper as it concerns itself with ideology as the bridging variable between discourse and society – the former being largely perceived as a social practice in the field of critical discourse studies. The results indicate that, in terms of ideology, anti-Duterte groups perceive the current administration as a murderer and debtor who must be immediately removed from position by the people – especially the youth. Doing such shows values of nationalism. The elaborate information available through anti-Duterte chants also already describes their identity as a group. On the other hand, given the straightforwardness of pro-Duterte chants, it has been established that the only variable that holds their group identity together is their strong belief in Duterte – even with messianic tendencies.

**Key Words:** discourse analysis; public demonstration chants; anti-Duterte; proDuterte

## Video Game Storytelling: The Evolving Narratives and Experiences, of Stories in Games

Luis Emilio C. Tierro<sup>1</sup>  
Mr. Carlos Piocos III<sup>2</sup>

<sup>1</sup> *De La Salle University Integrated School (Manila)*

<sup>2</sup> *Literature Department, College of Liberal Arts, De La Salle University - Manila*

**Abstract:** Video Games have always been a source of entertainment for people to experience on through interactivity and immersion. They have ways to make people have fun, and one of which is their ways of telling compelling narratives and stories to the player. From simple arcade and simple quests to full cinematic storytelling, these games have seen a shift towards these compelling stories to make those games as influential and successful as they are. This research will focus on the narrative techniques the developers of certain story-driven games use to enhance the enjoyment of those games. The research then will discuss how narrative techniques of these games change the way player engage with the story and making those games achieve the impact they wanted. It is not just a question of the function of mechanics anymore (although this is still a defining aspect of games which has also become more complex over time), but also of the role of narrative techniques in driving emotional response from the player (Fuchs, 2018). For this research, I will utilize textual analysis on the games and their storytelling methods. To analyze those games, the research will use narratology and Russian Formalism to examine the ways those games effectively portray their narratives and to show the development of these narrative games in the evolution of video games, especially in the respective genre where those narrative games are set in.

**Key Words:** interactivity, storytelling, narrativity, perspective

## **I AM (A)PART: Indigenous Representation Through the Lens of the Sahaya Creators and the Badjao Community**

Janil Manguerra, Hailey Jerrimee Ng, Joy Christian Emmanuelle Rivera,  
and Katharine Villano  
Mr. Christian Gopez, Research Adviser

*De La Salle University Integrated School (Manila)*

**Abstract:** Indigenous people are often misrepresented in media. However, only a few studies have explored the motive of media creators and the perspective of the (mis)portrayed indigenous group itself. Thus, this paper focused on both the intentions of media creators and the reception of the represented Badjao community in Sahaya, one of the epik-seryes of GMA Network last 2019. Through the use of the Media Representation Theory and the interviews conducted with Director Zig Dulay, Head Scriptwriter Suzette Doctolero, and selected representatives of the Badjao community particularly the Sama-Dilaut from Tawi-Tawi, the research was able to apprehend the role of the creators in cultivating the reality of the represented Indigenous group in media and the implications of the representation towards the Badjao community. The creators sought to represent the Badjao community accurately through the means of extensive research and immersion. Despite some inaccuracies of the portrayal, the Badjao community had a positive reception of Sahaya which was possible through proper representation and thorough research.

**Key Words:** Sahaya; Badjao; Indigenous Representation; Epik-serye; Sahaya Creators;



## Depiction of a Dystopian Reality Through Television: How Black Mirror Influences the Perception of De La Salle University-Manila Senior High School Students on the Future

Jerome Luis Agus<sup>1</sup>, Patrick Gabriell Balmes<sup>1</sup>, Shensy Lei Bicera<sup>1</sup>,  
and Abby Gayle Repotente<sup>1</sup>  
Joaquin Miguel Ruiz<sup>2</sup>, Research Adviser

<sup>1</sup> *De La Salle University Integrated School (Manila)*

<sup>2</sup> *Communication Department, College of Liberal Arts, De La Salle University - Manila*

**Abstract:** Media evolves due to the changes in societal norms and advances in technology and is portrayed in different forms, projecting whether change brought by it is positive or negative. The Netflix original series Black Mirror is a sci-fi anthology series that tries to predict the trajectory that society and technology would go based on how it is at present. This research aims to see if shows like Black Mirror affect an individual's perception of reality. The researchers conducted crowdsourcing to scout people who have seen select five episodes of Black Mirror, namely: The Waldo Moment, Shut Up and Dance, Nosedive, Arkangel, and Smithereens. Chosen participants were asked to answer a survey and subsequently interviewed about their experiences watching the show. The researchers did a thematic analysis to find any overlapping themes and patterns within the said conducted interviews. Common themes were grouped and cross-examined with interviewees' statements to create a more concrete analysis. Results of the interviews conducted showed that interviewees are said to only have a negative perception of the future when they can relate it to something happening at the moment, or something that has happened in the past. Ultimately, the results of the interviews conducted showed that the perception of the respondents was highly dependent on the beliefs, skills, and environment of the individual watching the show.

**Key Words:** Black Mirror; Netflix series; Dystopia; senior high school; perception

## Queer Films and TV Shows: The Perception of DLSU Senior High School Students Towards the LGBTQ+ Community

Alexa Alvarez<sup>1</sup>, Gayle<sup>1</sup>, Lareina Bulda<sup>1</sup>, Angela Mistranza<sup>1</sup>,  
and Yobhel Valenzuela<sup>1</sup>  
Dr. Mikee Inton-Cambell<sup>2</sup>, Ms. Jeremy T. Tintiangko<sup>2</sup>

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Communication Department, College of Liberal Arts, De La Salle University - Manila

**Abstract:** As queer films and TV shows continue to progress in the 21st century, the perceptions towards the LGBTQ+ Community also develop. Furthermore, the representation of the LGBTQ+ community in films and TV shows evolves in a more accurate and accepting tone. For this study, it aims to describe the perceptions of Senior High School Students in De La Salle University towards the LGBTQ+ Community through their exposure to queer-themed films and TV shows in comparison with the perception of those students who do not watch queer-themed films and TV shows. This study will further discuss the general themes and social realities found in queer-themed films and TV shows using the Cultivation Theory by George Gerbner which aids in the construction of one's perception. Purposive Sampling is utilized to determine the participants, while an In-Depth Interview is the research method for this study and there is a total of 14 participants; 7 respondents that watch Queer Films and TV Shows and 7 respondents that do not watch these films and TV shows. The findings revealed that the learning factors and construction factors in Gerbner's Cultivation Theory strengthens or weakens the viewers' perception, thus, positing the viewers' perceptions on the LGBTQ+ community through queer films and television shows in a positive and accepting light. It also revealed that romance, coming out, and acceptance are the themes most enjoyed by the participants.

**Key Words:** Queer Films and TV Shows; Perception; Senior High School Students; LGBTQ+ Community

## Patterns, Functions, and Perceived Effects of Facebook Messenger Usage Among Grade 11 Students

Aaliyah Heart C. Duran<sup>1</sup>, Antonio Enrique A. Ongdueco<sup>1</sup>  
and Andre Matthew D. Padilla<sup>1</sup>  
Mr. Jimmy A. Domingo<sup>2</sup>

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Communication Department, College of Liberal Arts, De La Salle University - Manila

**Abstract:** As an online messaging platform, Facebook Messenger has become increasingly intrusive in the lives of the youth, especially students. With that, the researchers aimed to determine the usage patterns, functions, and perceived effects of the Senior High School students of De La Salle University-Manila throughout an academic term. Considering the academic schedule, strands and the student's experience in using the application, they employed the use of a longitudinal panel survey design and conducted the survey during the respondents' midterms, ordinary time schedule, and final examinations respectively. From the related literature, the researchers hypothesized that the students are inclined to use Facebook Messenger as a tool in accomplishing academic requirements. The results concluded that Facebook Messenger is used for about 4-6 hours a day using mobile devices and 1-3 hours a day using laptops/computers. On the self-assessment on extreme usage hours, the amount of time spent does not define how excessive they use the application. It has been found that photographs are sent the most compared to other media available, and in the self-perceived effects of Facebook Messenger usage, it shows that the application helps in their academic and social lives, yet significantly affects their time and task management.

**Key Words:** Facebook Messenger: patterns: functions: perceived effects: students

## **Pagbibigay Buhay sa Patay: Death and Life through the Lens of Embalmers**

John Andrew A. Seroma  
Mr. Christian P. Gopez, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** There is a linear perspective whenever man contemplates about death and life, and no researches surface showing the concepts' median, nor how each construes to the other. Death is a necessary inquiry in Philosophy since it is interconnected with life as a 'framework'. The embalmers who tend to the dead manifest such interconnectivity in their work setting. This study understands how the *pagbibigay buhay sa patay* (life-unto-dead) phenomenon is fulfilled as embalmers interact with dead and living entities. Further, it explains how embalmers mean life and death. Review of Related Literature revealed how *pagbibigay buhay sa patay* in the pre-colonial Philippines meant securing 'being' in an afterlife. Embalming was centralized on the deceased person through embalming practices believed to attain the life previously lived. Through a semi-structured interview, this research rationalized an embalmer's view. Three were purposively sampled whose work residence is in Laguna, Philippines. The family is important within the client-embalmer interaction. It allowed them to permeate through the family's social circle, because the embalmer penetrates to the core of the client's vulnerability when assembling a funeral. *Pagbibigay buhay sa patay* revolved around family, since they primarily judge the processed cadaver, together with how death (as a celebration) vis-à-vis life (as an opportunity) construe to each other.

**Key Words:** *pagbibigay buhay sa patay*; life; death; embalmers; embalming

## **AETA-ech: The Functions and Perceived Influence of Mobile Phone on Middle-Aged Adults of the Aeta Community in Capas, Tarlac, Philippines**

Juliana Agoncillo, Deyah Obillos and Maria Trisha Quijano  
Ms. Liezl Astudillo, Research Adviser

*De La Salle University Integrated School (Manila)*

**Abstract:** The use of mobile phones has been considered as a necessity in this day and age. Due to the rapid development of technology, uptake of mobile phones even in remote societies has also been observed. In the local setting, for instance, recent literature found that indigenous communities have started embracing mobile technology to carry out their day-to-day lives. To provide further understanding of the utilities of mobile phones in indigenous communities, the proponents interacted with volunteer adult participants from the Aeta community of Barangay Sta. Juliana in Capas, Tarlac. Specifically, the study probed into functions and perceived impact of the use of mobile phones on the participants' indigenous language, communication patterns, and traditional practices through a semi-structured interview process. The researchers also examined the manner by which these influences differ in terms of participant attributes, such as sex and degree of mobile phone usage. Data were analyzed through open and axial coding. Findings revealed that the major functions of mobile technology include the following: attending to work responsibilities, efficient communication, and for pastime. As to influence, mobile phone use has enabled the participants to code-switch much easily, communicate effortlessly, and broadcast personal issues. Through this study, it was known that there are differences as to how mobile technology impact both sex with regards to the degree of mobile phone usage. Females utilize mobile technology for social and emotional activities while males for physical and social activities. It is also for this reason that females utilize mobile phones more frequently than males do.

**Key Words:** mobile phones; indigenous people; Aetas; influence; functions

## #BabaeAko Movement as a Counter-Movement Against Rodrigo Duterte's Mysogyny

Misogyny Justine Angela M. Solon<sup>1</sup>  
Mr. Gerald L. Latayan, Research Adviser<sup>1</sup>

*De La Salle University Integrated School (Laguna)*

**Abstract:** Hashtag movements are a new and developing concept. With social media being pervasive, these movements continue to grow over time. In the Philippines, the #BabaeAko movement was launched last May 2018 and started trending in social media. The objective of this study is to trace the development of the movement, determine the key factors behind the formation of the movement, and identify emergent themes. Data gathering involved the use of Twitter's electronic search to identify material that contained the phrase "#BabaeAko" within the timeframe of May 20, 2018 to September 30, 2019. Tweets were manually reviewed to identify if there were any topics of discussion that tended to re-occur in other tweets. Among 6554 tweets, four overarching categories had been identified: (1) Duterte as a misogynist; (2) #BabaeAko as empowerment; (3) Kontra-movement, and; (4) Rants about the government. Identifying these four major themes also helped in describing the nature of the movement, to which was needed in order to reach a conclusion. Findings revealed that the hashtag #BabaeAko emerged mainly due to Duterte's misogynistic remarks, and the movement was mainly active when there were pressing issues related to women in the Philippines. Tweets that were anti-#BabaeAko were also identified, often in relation to the movement's advocacies.

**Key Words:** Hashtag movements; *Babae Ako* movement; feminist movement; misogyny; mobilization

## Naniniwala, Nag-iiwan, Nagsasabi: A Content Analysis of Miss Q&A's Beks in Chuk Chak Using Pantawang Pananaw

Kristine Torrente  
Mr. Christian P. Gopez, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** The *kasabihan* is a form of Philippine folk literature that is used to give lessons on values while embodying the attitudes and thought of a certain culture. Aside from its traditional use, *kasabihan* has become a staple for contestants in local gay pageants, where contestants would create their own comical *kasabihans*. This study focused on how the gay contestants of Miss Q&A have used their wit and humor to form messages behind their *kasabihans*. This was done through a content analysis where the *kasabihan* of the contestants of Miss Q&A who won as Beks in Chuk Chak was described and analyzed using the elements of Pantawang Pananaw. Miss Q&A as a gay pageant that focuses on wit and humor was identified as the *midyum*; the contestants of Miss Q&A as *baklas* were identified as the *aktor*; their *kasabihans* were identified as the *kontent/anyo*, and the social issues that the contestants face as *baklas* were identified to be the *konteksto*. In addition, the study found the various ways the contestants had used their *kasabihans*, with each use corresponding to an issue they wish to address: the *kasabihan* used to entertain, to insult the self and others, to impart positivity, to talk about love and relationships, and to remind. Afterward, it is discussed within this study how the contestants, as *baklas*, use Miss Q&A as their platform, their *kasabihans*, and their wit and humor to empower themselves.

**Key Words:** Miss Q&A; gay pageants; bakla; kasabihan; pantawang pananaw

## **PAPER PRESENTATION**

---

### **Sustainability, Environment & Energy (SEE)**



## Extraction and Characterization of Cellulose Acetate from Cigarette Butts For its Application in Biodegradable Plastic Film Production

Redd Chiu, Zeth Pinuela, SooHyeon Pyo, and Peam Sarignaya  
Sherilyn Abarra MSc., Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** Cigarette butts are one of the most prevalent pollutants, threatening the survival of living organisms. Cigarette butts are mainly composed of cellulose acetate (CA) which accumulates in the environment and has been used in various applications, particularly in plastic film production. Recently, research focuses on the exploration of materials for bioplastic production particularly in enhancing the biodegradability of CA as a component of plastic films. Thus, the researchers sought to extract CA from cigarette butts and determine its suitability for bioplastic film production. The collected cigarette butts were subjected to the extraction procedure using aqueous solutions (0.02% H<sub>2</sub>SO<sub>4</sub> and 5% NaCl) and organic solvents (petroleum ether and hexane), followed by a precipitation step using acetone-water system. The extracted CA was characterized by determining the degree of substitution (DS) through a saponification reaction. The extraction procedure obtained 55g of CA which is attributed to the efficiency of the solvents used in the extraction and purification processes. The DS of the CA obtained was 5.6 (60.65 %AG) which is relatively higher than commercialized CA. Previous studies suggest that CA with a low DS degraded more significantly than that with a higher DS implying that the extracted CA alone might not be suitable for bioplastic synthesis. However, similar research suggests that the addition of plasticizers can enhance the biodegradability of CA blends for bioplastic film production. Further research must be performed to investigate the effects of various plasticizers on the suitability of cellulose acetate in the production of bioplastic films.

**Key Words:** cigarette Butts; cellulose acetate; bioplastic; pollutants;

## Simultaneous Treatment of Polluted River Water and Bioelectricity Generation Using CW-MFC with *Megathyrus maximus*

Irene Isabel B. Hayag<sup>1</sup>, Richelle Anne S. Manaloto<sup>1</sup>, Daphne Louise G. Ong<sup>1</sup>,  
Frances Danielle B. Solis<sup>1</sup>  
Dr. Allan N. Soriano<sup>2</sup> and  
Mr. Kristopher Ray S. Pamintuan<sup>3</sup>, Research Advisers

<sup>1</sup> De La Salle University Integrated School (Manila)

<sup>2</sup> Chemical Engineering Department, Gokongwei College of Engineering,  
De La Salle University, 2401 Taft Avenue, Manila

<sup>3</sup> School of Chemical, Biological, and Materials Engineering and Sciences, Mapúa University,  
Intramuros, Manila

**Abstract:** An alternative method for energy production is through microbial fuel cells (MFCs), devices that produce electricity during wastewater treatment with the utilization of cellular respiration in bacteria. This study designed and assembled a constructed wetland-microbial fuel cell (CW-MFC) that simulated the treatment of Zapote river water and simultaneously generated electricity. This was limited to the use of polluted water from the aforementioned river and the invasive weed, *Megathyrus maximus*. Such objectives were done by monitoring the voltage of the setup, constructing polarization curves and evaluating the change in water quality parameters which included chemical oxygen demand, nitrates and phosphates concentration, and pH level. Results reveal that the CW-MFC with *M. maximus* generated an average power of 5.10  $\mu\text{W}$  and an average power density of 1.62  $\text{mW}/\text{m}^2$  while the other water quality parameters exhibited notable improvement. The present study conveys that CW-MFC setups, with the use of the considered plant, can be an efficient biochemical method and a promising alternative to generate electricity and improve water quality.

**Key Words:** Constructed Wetland-Microbial Fuel Cell; *Megathyrus maximus*; Bioelectricity Generation; Wastewater Treatment

## Effectiveness of *As EC as Juan2tree* in Mitigating Environmental Risks

Gabriel Erysson Crisostomo<sup>1</sup>, Alaura Carelle Evangelista<sup>1</sup>,  
Vincent Malabanan<sup>1</sup>  
Engr. Amando Perfecto Molin, Research Adviser

<sup>1</sup>*South Hill School, Incorporated*

**Abstract:** Environmental issues like solid waste pollution and deforestation have been a problem in many parts of the world. In the Philippines alone, there is an increasing problem with solid waste management and deforestation. In order to take action on these issues, the researchers developed a program entitled “As ec as Juan2tree” which acts on three mechanisms: (1) applying the developed composting innovation that uses whey as an inoculant and promoting it as a sustainable way of managing municipal waste; (2) converting non-compostable wastes into things with value via reducing, reusing, and recycling; and (3) the promulgation of Arbor Day Law of 2012. For this study, the program was implemented at South Hill School, Inc. as a simulation to which the researchers measured its effectiveness by following the mechanism’s parameters. The results from mechanism 1 proved that the enzymatic compost is viable in sustainably managing municipal waste (compost yield: 60.9%; NPK level: 9.65%). Mechanism 2 showed that a large portion of non-compostable waste can be converted into ecobricks and cash. For mechanism 3, the law was popularized within the school and has a relevant social media presence. Overall, the whole program is effective in mitigating environmental risks.

**Keywords:** enzymatic compost; non-compostable waste; ecobricks; deforestation; solid waste management

## Design and Development of a Floating Trash Collecting Device

Karl Boncodin, Kyle Calub , Dominic David, and Ellison Tordesillas  
Ms. Phebe Mendoza, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** The accumulation of trash in our oceans has affected marine wildlife and its beauty. That is why various groups around the world have begun cleanups, rehabilitation programs, and even invented devices to aid in these projects. This problem translates in the Philippines which is considered one of the biggest contributors of trash in the ocean. This study aims to give aid in the country's attempt in solving the aforementioned problem by designing and developing a floating trash collecting device. This research utilized the process of ideation and implementation in order to conceptualize a design and develop a prototype of the device. This research came up with different forms for the device. In addition, three function concepts were developed in order to show different processes of how the device could work. The device's final design was chosen from the different forms and functions conceptualized in the ideation stage. Subsequently, the construction and testing of the prototype was completed in the implementation stage. This stage utilized CAD Modeling to better visualize the prototype. Afterwards, a prototype of the device was constructed and tested in a swimming pool. Through the tests performed in this research, it is revealed that the device was able to collect trash using man-made waves. The results of the tests served as an avenue to modify the design in terms of its capabilities; specifically in its efficiency, feasibility and sustainability.

**Key Words:** ideation; form concept development; function concept development; hydrodynamics

## **AirConnect: Assessment of Air Quality in the City of Malolos, Bulacan**

Kimberly Arroyo<sup>1</sup>, Mechaella Bondoc<sup>1</sup>, Ma. Vance Yanna Buan<sup>1</sup>,  
Julianne Ciriaco<sup>1</sup>, Kimberly Dayao<sup>1</sup>, Angeline De Claro<sup>1</sup>,  
Mikee Bernice Clarae Maceda<sup>1</sup> and Rizel Anne Roque<sup>1</sup>  
Ronilo P. Antonio, MS, LPT<sup>2</sup>

<sup>1</sup>Senior High School, Laboratory High School, College of Education, Bulacan State University,  
City of Malolos, Bulacan, Philippines

<sup>2</sup>College of Education, Bulacan State University. City of Malolos, Bulacan, Philippines

**Abstract:** The City of Malolos in Bulacan is transitioning from a rural to urban community, with growing population, several road rehabilitations and funded expressway projects for the improvement of the city. With the extreme changes happening in the city, the air quality is being affected, from the construction, factories, malls, universities built, and even by climate change. This present study is featuring the device called AirConnect, a portable, Arduino-based air sensor device to monitor the air quality in five selected areas around the City of Malolos, Bulacan, including Malolos Bayan, Longos, Dakila, Barangay Guinhawa (MacArthur Highway) and Blas Ople Diversion Road. The device assessed the five major air pollutants: Particulate Matter 2.5, Carbon Monoxide, Nitrogen Dioxide, Sulfur Dioxide, Ozone, with respect to Temperature and Humidity. The prototype created is also supported with a SIM800L GSM that enables the device to send and receive keyword message that can update the citizens regarding the level of air pollutants in present time. The prototype will serve as a model for production of AirConnect that can be installed in every barangay. The results based on the data analysis showed that the overall air quality in the City of Malolos, Bulacan is good and healthy based on the standard Air Quality Index (AQI). However, the investigation also showed that there are still accumulated pollutants in some areas. Findings conclude that the children and the elderly are still at risk when exposed to outdoor air.

**Key Words:** Air quality; pollutants, AirConnect; Malolos,Bulacan; monitor

## Saba Banana (*Musa Acuminata* x *Balbisiana*) Peel as a Precursor of Activated Carbon for Removal of Methylene Blue

John Amadora<sup>1</sup>, Kelsey Cua<sup>1</sup>, Dorothy Tuazon<sup>1</sup> and Rannah Sy<sup>1,\*</sup>  
Dr. Arnel Beltran<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Chemical Engineering Department, Gokongwei College of Engineering,  
De La Salle University-Manila*

**Abstract:** The saba banana is a common cultivar in the Philippines that is widely grown and in high demand. However, the banana peels left by consumers are underutilized and left as solid waste. Furthermore, wastewater caused by synthetic dyes from the textile industry pose a significant threat to the health and the environment, thus an effective adsorbent should be utilized to remove synthetic dyes. The present study sought to procure activated carbon from the peel waste of Saba banana to test its adsorption efficiency through the removal of methylene blue, and to characterize the activated carbon through FT-IR and SEM image analysis. The procured activated carbon was prepared using zinc chloride ZnCl<sub>2</sub> chemical activation with a 3:1 ZnCl<sub>2</sub> to carbon ratio under high temperatures.

**Key Words:** Activated Carbon; Saba banana peel; Methylene Blue

## Biosorption Of Copper From Laboratory Treated Water Using Milkfish (*Chanos Chanos*) Scales

Kiana Magcuyao<sup>1</sup>, Ricardo Salvador III<sup>1</sup>, Lyra Calizon<sup>1</sup>, Jessica Lugtu<sup>1</sup>  
Patricia Cortez<sup>1</sup>, and Jaryna Limbauan<sup>1</sup>

<sup>1</sup> De La Salle Araneta University

**Abstract:** The contamination of water bodies with pollutants such as industrial waste loaded with heavy metals and chemicals pose a significant threat to both humans and the environment. At high concentrations, heavy metals are bioaccumulative, hazardous, and carcinogenic. Among different methods for extracting heavy metal from water, absorption is an alternative to traditional copper removal methods. This study determined the copper biosorbent capability of the different mass of Milkfish (*Chanos chanos*) scales. The specific uptake and sorption percentage of copper from contaminated water using different amount of milkfish scale (*Chanos chanos*) as biosorbent (0.20g, 0.50g, and 1.50g) was calculated using Atomic Absorption Spectrophotometer (AAS) and visualized using Scanning Electron Microscope (SEM). The specific uptake and sorption percentage of scales showed that the amount of biosorbent is inversely proportional to the concentration of absorbed copper, with 0.2g as the most effective amount in terms of specific uptake and sorption percentage. This is further confirmed by the presence of small white particles seen from the SEM images of posttreatment of biosorbent, which indicates absorbance of copper and effect on the final concentration of the copper solution. Significant difference was observed between the specific uptake, sorption percentage, and biosorbent dosage ( $p < 0.05$ ).

**Key Words:** Biosorption; Milkfish; Fish scales; Heavy Metals; Copper

## Zinc Chloride Activation of Carbonized Carabao Mango (*Mangifera indica*) Seed for Methylene Blue Dye Removal from Wastewater

Jewel Anne Shaina G. Bulanadi<sup>1</sup>, Eunice Andrea T. Caronongan<sup>2</sup>,  
Hannah Joy T. Ngo<sup>3</sup>, Jaira Millicent M. Santos<sup>4</sup>  
Dr. Arnel Beltran, Research Adviser<sup>5</sup>

<sup>1-4</sup> De La Salle University Integrated School (Manila)

<sup>5</sup> Chemical Engineering Department, Gokongwei College of Engineering,  
De La Salle University-Manila

**Abstract:** Wastewater is a resource that is too valuable to simply discard, particularly in an undeniably water-scarce world. Activated carbon (AC), one of the most common and efficient means of treating waste water, is composed of carbonaceous materials with high adsorption capabilities. Agricultural wastes were found to be effective precursors for the production of AC. Given the surplus of mangoes in Luzon, agricultural waste such as carabao mango seeds are expected to increase in number as well. Hence, the utilization of these wastes will not only contribute to the treatment of wastewater, but also to the minimization of waste. This study aims to procure AC prepared from carabao mango seeds and Zinc Chloride ( $ZnCl_2$ ) activation for the adsorption of methylene blue (MB) dye in an aqueous solution. The effectiveness of the product will be determined by the amount and concentration of methylene blue that was adsorbed. The SEM results show that the AC treated with  $ZnCl_2$  obtained the most porous structure and the greatest uniformity among all the three samples: pulverized mango seeds (PMS), carbonized mango seeds (CMS), and mango seed activated carbon (MSAC). The increased surface area of the MSAC was additionally linked to an increased adsorptive capacity, thus making it a more effective adsorbent as compared to the samples which did not undergo chemical treatment. FT-IR results show adsorption peaks at  $3444.80\text{cm}^{-1}$  which is attributed to the stretching of N-H bands indicating the presence of 2 bands of primary ( $1^\circ$ ) amines. The broad band with a maxima at  $1118.04\text{ cm}^{-1}$  is assigned to CO stretching vibrations of alcohols, carboxylic acids, esters and/or ether groups.

**Keywords:** activated carbon; methylene blue; mango seed; wastewater



## The Feasibility of Ficus Stalks, Rice Husks, Sand, and Activated Charcoal in Treating Laundry Wastewater

Scheneil Belmonte, Daphne Carvajal, Daphne De Castro  
and Justine Soriano  
Julius John Salamanes, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** Due to the inadequate supply of safe water sources in the country due to water pollution, approximately nine million people in the Philippines resort to the consumption of unsafe water sources. One of which is the use of one of the common household water wastes, laundry water, without it undergoing filtration. Meanwhile, several studies explore the capability of rice husks, Ficus stalks, activated charcoal, and sand individually for filtering wastewater and showed promising results. However, to date, no studies have used them in one filtration system to treat wastewater. Thus, this study aims to combine rice husks, Ficus stalks, activated charcoal, and sand in a single to treat the laundry water its classification fit for human consumption following the water quality guidelines set by the Department of Environment and Natural Resources (DENR). The said four components of the filter were thoroughly cleaned to remove contaminants and were placed separately, each filling half of a 1.5L bottle positioned in a layered plywood stand . After which, the laundry wastewater was filtered through these layers and was collected using a plastic container placed underneath the stand. Interestingly, post-analysis of the filtered laundry wastewater revealed that it was elevated to Class AA, the highest water classification, from a pre-analysis of n/a as suggested by the water quality guidelines by the DENR. This study showed that the utilization of the said four components, in combination, can produce potential drinking water after the evaluation and disinfection of DOST.

**Key Words:** Ficus stalks; rice husks; laundry wastewater; Class AA

## **An Investigation on the Phytochemical Contents and Cytotoxic Property of *Strongylodon juangonzalezii* (Fabaceae)**

Therese Genota, Keziah Guevarra, Andrea Matibag,  
Lance Oga and Bless Taguilaso  
Leah Madrazo, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** The Philippines of ecosystems, housing a great number of endemic species. As such, there have been many discoveries of new flora and fauna within the country. One such recent discovery is the *Strongylodon juangonzalezii* discovered in Mulanay, Quezon in 2016; however, no research has been conducted due to its currently unknown population. This research, therefore, aims to ascertain the presence of three phytochemical compounds (tannins, flavonoids, saponins) in the *S. juangonzalezii*, as well as test the cytotoxic activity of its vines and leaves. The presence of the said three phytochemicals was determined using the ferric chloride test (tannins), foam test (saponins), and the Shinoda test (flavonoids). The potential cytotoxic effect was tested in terms of median lethal concentration (LC50) using a Brine Shrimp Lethality Bioassay. Results reveal that both the vines and leaves of the *S. juangonzalezii* possess tannins, saponins, and flavonoids and medium toxicity to cells, revealing the plant's potential for future pharmaco-biological use.

**Key Words:** *Strongylodon juangonzalezii*; tannins; saponins; flavonoids; cytotoxicity

## Predation Efficiency of Lynx Spider (*Oxyopes javanus*) against Cacao Mirid Bug (*Helopeltis bakeri*) under Laboratory Conditions

Chris Elhig, Shan Pleños, Glenn Trillo, and Zeyao Yao  
Leah De Jesus Madrazo

*De La Salle University Integrated School (Laguna)*

**Abstract:** The cacao industry provides a big opportunity for farmers to earn bigger and contributes to the Philippines' gross domestic product. However, pest infestations, most notably that of *Helopeltis bakeri* (Heteroptera: Miridae), hinder the ability of the industry to meet standard demands. Spiders generally feed on several insect pests, thus making them as potential biological control agents against many pest populations. The present study investigates the predation efficiency of the *Oxyopes javanus* (Araneae: Oxyopidae) spider against one notable pest of *Theobroma cacao*, *Helopeltis bakeri*, under laboratory conditions. Ten *O. javanus*, five per sex, were collected from the field and maintained under laboratory conditions. To evaluate the functional response of *O. javanus*, three different prey densities were offered separately to an individual spider which was starved for 72h. After 48h, percent predation was determined. Results revealed that female *O. javanus* exhibited a higher predation rate than its male counterparts as prey density increased. Results have also revealed that as prey density increased, predation rate of *O. javanus* has also increased ( $r^2 = 0.8156$ ). This could be evidence to show that *O. javanus* has a strong potential to become a biological control in maintaining *H. bakeri* pest populations.

**Key Words:** *Oxyopes javanus*; predation efficiency; *Helopeltis bakeri*; biological control; *Theobroma cacao*

## The Synergy of *Pseudomonas aeruginosa* and Different Polymorphs of Iron-Oxide Nanoparticles: Potential Role in the Biodegradation of Low-Density Polyethylene (LDPE)

Charles G. Alcarpio<sup>1</sup>, Lorenzo John B. Clavio<sup>1</sup>, Manna G. Cruz<sup>1</sup>,  
Ashley Yzarie Y. Dela Cruz<sup>1</sup>, Paolo C. Estrella<sup>1</sup>, Stephanie Anne S. Salamat<sup>1</sup>,  
Simon Adriel P. Santiago<sup>1</sup>, Ronilo P. Antonio<sup>2</sup>

<sup>1</sup>Senior High School, Laboratory High School, College of Education, Bulacan State University,  
City of Malolos, Bulacan, Philippines

<sup>2</sup>College of Education, Bulacan State University. City of Malolos, Bulacan, Philippines

**Abstract:** Plastic pollution is an emerging environmental problem, which is caused by the improper disposal of polyethylene (PE) products. Since these products are non-biodegradable under natural conditions, their rapid biodegradation is of great concern. This experimental study had two-fold objectives in investigating the bacterial growth and biofilm formation of the pathogenic bacterium *Pseudomonas aeruginosa* when induced by the polymorphs of Iron Oxide nanoparticles and its microbial degradation efficacy on the surface of Low-Density Polyethylene. Specifically, the study featured Randomized Complete Block Design (RCBD), which used Alpha-Iron Oxide and Ferric Hydroxide nanoparticles in varying concentrations to induce the growth and biofilm formation of *P. aeruginosa* that was used to biodegrade LDPE. Findings of the study implied that it is significant to use Iron Oxide Nanoparticles Precipitate in inducing the growth and biofilm formation of *P. aeruginosa* in colony-forming units. After the allotted time of observation, the plates had shown a greater increase to those of which is given a higher dose of the precipitate. Moreover, there was also a significant effect on the use of this pathogenic bacterium in the biodegradation of Low-Density Polyethylene as shown in the decrease in mass prior and after exposure. Further, scanning electron micrographs revealed morphological changes in the LDPE strips, which confirmed the synergistic effects of *P. aeruginosa* and different polymorphs of Iron Oxide nanoparticles in biodegrading Low-Density Polyethylene. Overall, this study generated substantial information on the significance of the use of microorganisms facilitating biodegradation, alongside proving that the different polymorphs of Iron Oxide Nanoparticles Precipitate influences the growth of the bacteria.

**Keywords:** *Pseudomonas aeruginosa*, Alpha-Iron Oxide Nanoparticles (α-Fe<sub>2</sub>O<sub>3</sub>), Hydrophobic Carbon Backbone, Polyethylene polymorphs, Antimicrobial Peptide Function

## **A Study on the Morphometrics of Water Spinach (*Ipomoea aquatica*) and Freshwater Shrimps (*Macrobrachium rosenbergii*) Grown Using Aquaponic and Hydroponic Units for Urban Agri-farming**

Karen Avena<sup>1</sup>, Lorenzo Sales<sup>1</sup>, Denise Suemith<sup>3,1</sup>, and Riane Uy<sup>1</sup>  
Dr. Zeba Alam, Research Adviser<sup>2</sup>

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Biology Department, College of Science, De La Salle University - Manila*

**Abstract:** As a response to the dangers climate change poses to agriculture, more low cost and sustainable methods in urban agri-farming to increase food production should be standardized. A proposed method is to use Aquaponics and Hydroponics as a form of Urban Agri-farming. This research aims to standardize growing water spinach (*Ipomoea aquatica*) using Hydroponics and Aquaponics units (along with freshwater Shrimps (*Macrobrachium rosenbergii*), and to find the optimal system and proper conditions to grow them at a commercial scale, to compare the morphometric parameters such as linear growth of the species, number of leaves, and the survival rate under a soil unit, aquaponics unit, aquarium unit, and hydroponics unit were investigated simultaneously per cycle. The aquaponics unit where water spinach was grown along with the shrimps showed significant difference in the plant's growth, as compared to the Hydroponics unit. There was also a significant growth of the freshwater shrimps in the Aquaponics unit, as compared to the aquarium unit, thereby making it a very sustainable method of Agri-farming. However, the hydroponics unit, using a commercially available nutrient solution, was only able to sustain the growth of the water spinach for about two weeks. The study also found the indoor units were not able to produce the same quality of plant harvest as the traditional soil unit as they lacked the large amount of light received. The researchers therefore propose that standardized Aquaponics units for water spinach and freshwater shrimps are optimal for urban agri-farming.

**Key Words:** water spinach; aquaponics; hydroponics; freshwater shrimps

## **Biosorption of Nickel and Zinc from polluted water of Laguna De Bay using calamansi (*Citrofortunella microcarpa*) and dalandan (*Citrus aurantium*) peels**

Czar Nicholas B. Siangko<sup>1</sup>, Patricia Jean DG. Escasinas<sup>1</sup>, Hajami Angel Sofia D. Florida<sup>1</sup>, Angela Claudine C. Gaudia<sup>1</sup>, Jeffrey Vistan<sup>1</sup>, Cristian Ryan A. Argamino<sup>2</sup>, Research Adviser

<sup>1</sup> De La Salle University Integrated School (Manila)

<sup>2</sup> Chemistry Department, College of Science, De La Salle University - Manila

**Abstract:** The presence of heavy metals in bodies of water has become a matter of concern for the community as their impacts to the environment and the people came with risks, thus the removal of these toxic metals is significant. Researchers have started to seek solutions by conducting experiments using certain crop-based waste materials for the removal of heavy metals from aqueous solutions. In this study, calamansi (*Citrofortunella microcarpa*) and dalandan (*Citrus aurantium*) peels were investigated for their percent removals and adsorption capabilities under experimental parameters such as contact time, biosorbent dosage, and pH level of solution through batch adsorption studies, and optimum conditions were established. Optimum conditions of pH 4 and 6, both 0.1 g, and 120 and 20 minutes were established for nickel and zinc biosorption of calamansi peels respectively, while pH 4 and 5, 0.1 g and 0.25 g, and 10 and 20 minutes for nickel and zinc biosorption of dalandan peels. Actual environmental water testing was planned through application of biosorbents in optimum conditions; however, nickel and zinc concentrations found in the samples were deemed very low and undetectable via flame atomic absorption spectroscopy. Nevertheless, calamansi and dalandan peels exhibited promising potential as efficient heavy metal biosorbents as shown in batch studies and in comparison with other peel biosorbents.

**Key Words:** *biosorption; calamansi; dalandan; atomic absorption spectroscopy*

## Effect of Cacao Mirid Bug (*Helopeltis bakeri*) Infestation on the Volatile Chemical Profile of the Alternative Feeding Host, *Psidium guajava*

Marc Francis Iringan<sup>1\*</sup>, Angela Bienne Acosta<sup>1</sup>, Mark Joseph Balunsat<sup>1</sup>,  
and Sean Gabriel Novelles<sup>1</sup>  
Dr. Jose Isagani Janairo<sup>2</sup>, Research Adviser

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Biology Department, College of Science, De La Salle University - Manila

**Abstract:** Plants respond to infestations or other forms of environmental stress by releasing volatile organic compounds such as herbivore-induced plant volatiles (HIPV's) as a defense mechanism. These volatile compounds function as chemical messengers that enable plants to interact with surrounding organisms in their environment. In the Philippines, the cacao industry is expected to have a significant economic and livelihood impact in the country. However, the industry is threatened by the cacao mirid bug, *Helopeltis bakeri*, an insect pest capable of destroying the plant's pods and shoots that decrease cacao yield and income. This study characterized the volatile chemical profile of the leaves of the alternative feeding host of *H. bakeri*, *Psidium guajava* (guava) to identify compounds that may aid in plant defense by comparing the volatile chemical profile of healthy leaves against leaves infested with *H. bakeri*. The volatile compounds emitted by the guava leaves were extracted using a Supelco 0.1 mm Polydimethylsiloxane Solid Phase Microextraction (SPME) fiber and were subjected to Gas Chromatography-Mass Spectrometer (GC-MS) analysis. The results show that the infested leaves emitted an increased amount of  $\beta$ -bisabolene which is a sesquiterpene that usually functions pheromones for different insects such as stink bugs and fruit flies. Other terpenes, such as D-limonene and aromadendrene, were also emitted only by infested leaves, which have shown the potential to repel pests and attract other insects for control in herbivores. This suggests that the said compounds play a role in defensive signaling of the plant in response to infestation.

**Key Words:** mirid bug; environmental stress; chemical messengers; terpenes; defense signaling

## Development of Pervious Geopolymer Concrete Paver Using Coal Ash and Mine Waste

Von Stephen P. Carandang<sup>1</sup>, Jonathan Gabriel G. Lay<sup>1</sup>,  
Rafael Conrado F. Matias<sup>1</sup>, and Jed Peter M. Perez<sup>1</sup>,  
Dr. Michael Angelo B. Promentilla<sup>2</sup>, Research Adviser  
Engr. April Anne S. Tigue<sup>2</sup>, Collaborator

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Chemical Engineering Department, Gokongwei College of Engineering,  
De La Salle University-Manila*

**Abstract:** Concrete production involves the combination of raw materials such as aggregates, water, and cement known as Ordinary Portland Cement (OPC). OPC is a hydraulic binding material that is extensively used in manufacturing concrete worldwide. However, the production of OPC accounts for around 5 to 7 percent of the total anthropogenic carbon dioxide released annually. Therefore, the use of sustainable geopolymers as alternative to OPC in the production of pervious concrete will be performed in the study. In particular, coal fly ash (FA) and nickel mine silt (NMS) based geopolymers were utilized and investigated. The effects of the pervious geopolymer concrete paver (PGCP) parameter of aggregate size on the response variables such as compressive strength and porosity were evaluated. The coarse aggregate to geopolymer (CA/GP) ratio of 3:1, precursor to alkaline activator (PC/AA) ratio of 13:7, FA to NMS ratio of 1:1, and Sodium Hydroxide and Sodium Silicate (NaOH/WGS) ratio of 1:2 were the mixture proportions of the PGCP. The only parameter varied is the coarse aggregate (CA) size where 5-10 mm and 14-20 mm CA were used. The curing temperature of 80°C for 24 h was used. The PGCP samples were subjected to 7 days of air drying. The results showed that PGCP with the CA size of 5-10 mm has a mean compressive strength of 1.97 MPa, a mean porosity of 50.24 percent, and a mean permeability of 4.71 cm/s. While the PGCP with CA size of 14-20 mm has a mean compressive strength of 2.27 MPa, a mean porosity of 43.34 percent, and a permeability of 4.46 cm/s.

**Key Words:** geopolymer; pervious concrete paver; coal fly ash; nickel mine silt



## Assessment of the Traffic Cycle at Taft Avenue - Castro Street Intersection

Daniella Isabel G. Ibale<sup>1</sup>, Anne Ricyl T. Kaw<sup>1</sup>, Demi Chelsy B. Malto<sup>1</sup>,  
and Franchesca B. Ortega<sup>1</sup>  
Engr. Paolo Ian C. Lucero<sup>2</sup>

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Civil Engineering Department, Gokongwei College of Engineering,  
De La Salle University-Manila*

**Abstract:** In the Philippines, especially in urban areas like Metro Manila, traffic is one of the major crises that authorities are trying to eradicate. The scarcity of transport facilities, such as road signals and effective traffic management are a few of the causes of traffic congestion. In addition, better traffic management approaches and advanced traffic control systems are few of the solutions for greater mobility. A major factor to improve the efficiency and safety of both pedestrians and motorists is the optimization of the traffic cycle in the intersection. Traffic signal increases the capacity to manage the traffic when properly timed. Every year, the number of vehicles and due to that, traffic signals must be updated. This study assessed the traffic cycle time signals at Taft Avenue Castro Street intersection to help reduce the delay time of motorists. Upon meeting the objective of the study, necessary data were collected and after which were analyzed and calculated in accordance with the Highway Capacity Manual. Furthermore, the cycle time and intersection design were assessed and compared to the standard T- intersection. In conclusion, the desired cycle length and effective green time do not match the current situation of the said junction.

**Key Words:** traffic cycle; intersection; t-intersection; signal time; Taft Avenue; assessment

## Effectiveness of Citrus-Based Briquette As an Alternative for Charcoal

Bea Jewel G. Bisnar<sup>1</sup>, Dana Andrea E. Callejo<sup>1</sup>, Cara S. Garcia<sup>1</sup>,  
Helen Khate C. Lee Wong<sup>1</sup>, Nikholai Kristoffer F. Macapaz<sup>1</sup>,  
Neira Lene G. Salonga<sup>1</sup>, and Attasha Nicole R. Santillana<sup>1</sup>,  
Mr. Wilfred Glenn T. Catud<sup>1</sup>, Research Adviser

<sup>1</sup> *University of Perpetual Help System DALTA - Las Piñas Campus*

**Abstract:** Due to the effects of unsustainable charcoal production and improper waste disposal, this study investigated the effectiveness of citrus-based briquettes as an alternative for conventional charcoal. The research asserts that there is a significant difference between citrus-based briquette with conventional charcoal. The peels of navel orange, sour orange and *calamansi* were cut and mixed with sawdust (binder), molded and sundried for a week. The experimental design was one-way Analysis of Variance (ANOVA). Durability, water resistance, ignition time, and burning rate were investigated from the produced briquettes. Significant difference is found between the briquettes in all criteria. Using a post hoc test of Duncan's Multiple Range Test (DMRT), navel orange briquettes were found to be the most efficient. The relative highwater resistance, short ignition time, long burning rate, and high shatter resistance indicate that such material is a very good alternative fuel source.

**Key Words:** briquette; biomass; citrus fruit peels; fuel; charcoal

## Computational Fluid Dynamics Analysis of Bladeless Wind Turbine Design

Andrea Francine Doble<sup>1</sup>, Hannah Regine Fong<sup>1</sup>, Sherwyn Ysrael Santos<sup>1</sup>,  
and Ryan Jericho Sy<sup>1</sup>  
Gerardo Augusto<sup>2</sup>, Andres Mayol<sup>2</sup>, and Alvin Culaba<sup>2</sup>

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Civil Engineering Department, Gokongwei College of Engineering,  
De La Salle University-Manila

**Abstract:** Bladeless wind turbines (BWTs) have been a safer and more convenient alternative to the conventional bladed wind turbines. The advantages of applying bladeless technology include less space required, cheaper production cost, and less audible sounds produced. However, adapting bladeless technology in modelling wind turbines shows identified disadvantage: BWTs perform with less efficiency than conventional bladed wind turbines and fail to convert the total harnessed mechanical energy into useful electrical energy. The study investigates the performance of the BWT through CFD simulation. The power and energy output of the BWT were also calculated. The modeling software ANSYS was used to simulate the BWTs using fine mesh. It was determined that among the five BWTs simulated, BWT 5 (height of 1.50 m and diameters of 0.320 m and 0.240 m) was the optimal BWT as it produced the largest amount of power (88.29 W) and energy (24.53 J).

**Key Words:** bladeless wind turbine; computational fluid dynamics; wind energy

## Application of Sustainable Biomimicry Architecture in Contemporary Buildings

Patricia Anne Alvarez<sup>1</sup>, Aika Romae Anteza<sup>1</sup>, Ravenne Fenix<sup>1</sup>,  
Anton Gabriel Tenorio<sup>1</sup>, and Matthew Villafuerte<sup>1</sup>  
Engr. Joenel Galupino<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Civil Engineering Department, Gokongwei College of Engineering,  
De La Salle University-Manila*

**Abstract:** The increase in the energy consumption of buildings has led engineers and architects to incorporate sustainability in their design through biomimicry, a concept that finds inspiration in nature to solve human problems. Thus, the researchers aim to apply the concept of biomimicry to achieve sustainability by creating a building model that utilizes a waterfall. The researchers hypothesized that the conceptual model can at least generate enough energy for small power requirements. The researchers prepared a conceptual model of a building with a scale of 1cm:3m and estimated its power output through calculations. The calculated energy potential of the conceptual building was 200 kW which is estimated to be 16% of an average energy consumption of a building. Previous researches also suggest that the waterfall has social benefits such as improving the microclimate of the built environment. Thus, the conceptual model fulfills the socio-economic standards of sustainability for its potential to reduce energy consumption and to contribute to occupant satisfaction.

**Key Words:** hydroelectricity; biomimicry; sustainable; waterfall

## Electricity Generation from Wind-Generated Waves Through Electromagnetic Induction in a Power Buoy System

Adrian Bielza<sup>1</sup>, Godspeed Feliciano<sup>1</sup>, Katrina Jimenez<sup>1</sup>,  
Angelo Padilla<sup>1</sup>, Eunice Uy Tan<sup>1</sup>,  
Clement Ong<sup>2</sup>

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Computer Technology Department, College of Computer Studies,  
De La Salle University-Manila*

**Abstract:** By year 2030, the Department of Energy of the Philippines anticipates the country's demand for electricity to hit over 30,000 megawatts (MW), 70% more than our current capacity, which stands at slightly less than 18,000 MW. Of this, about 75% is generated through fossil fuels, which is considered non-sustainable, and only 25% from renewable sources (i.e. Hydropower, Geothermal Plants, etc.). The development of more renewable resources is needed to supply the 2030 expected energy demand. One renewable method that has not been exploited, to date, in the Philippines is the utilization of wind-generated (surface) waves to produce electricity. The Philippines in particular, might be well poised to use this technology, due to its coastline length of 36,289 km. In this paper, a prototype power-buoy system consisting of permanent-magnet DC motors, a linear-ratchet gear system, and a rectifier circuit was developed to translate wave power into electrical power. The prototype was designed to translate only the vertical motion produced by the wave; thus, any other motion absorbed by the buoy was neglected. The prototype also consists of power and motion measuring devices to characterize the wave and the buoy and determine its efficiency. The device was tested in a pool with waves generated manually. Based on the results, the prototype showed a mechanical conversion efficiency of 37.03% and an electric conversion efficiency of 15.17%. With these configurations, if placed in one-third of the Philippine's coastline, would produce enough power to light a 20-watt bulb for 2 hours and 46 minutes.

**Key Words:** wind-generated waves; electromagnetic induction; energy

## Urban Stormwater Runoff Characterization in the De La Salle University STRC Parking Lot

Ryanne Spencer Lim<sup>1</sup>, Jaime Remonte<sup>1</sup>, Ayla Diwata<sup>1</sup>,  
and Anne Bernadette De Leon<sup>1</sup>  
Dr. Marla Redillas<sup>2</sup>

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Hydraulics and Water Resources, Civil Engineering Department,  
Gokongwei College of Engineering, De La Salle University

**Abstract:** Runoff is the portion of water from various rainfall events that are unable to infiltrate the ground due to impervious surfaces such as concrete and asphalt. The Philippines suffers from severe stormwater runoff due to the increasing density of buildings in certain areas like Taft Avenue that have greater amounts of runoff due to an abundance of impervious surfaces. Therefore, it is important to quantify the amount of excess runoff in order to understand the relationship between the rainfall, runoff, and the impervious surface. This study aims to quantify & qualify (TDS & conductivity) the excess stormwater runoff on the Science and Technology Research Center (STRC) parking lot of the De La Salle University campus. Parameters such as rainfall intensity and duration were manipulated using a rainfall simulator to know the amount of runoff generated at a certain time interval. The portion of rainfall that becomes runoff was found to be 76%, which shows an imbalance in the hydrologic cycle. The most turbid samples were found during the first runoff collection, proving the 'first flush' phenomenon. This study is a possible source for future reference in supplementary research about stormwater runoff and can also be a basis for Low Impact Development (LID) implementation and research.

**Key Words:** *impervious surfaces; parking lot; rainfall simulator; runoff; stormwater*

## Establishing the optimal amount of water needed for proper irrigation in De La Salle University Manila

Jillian Paige Ang<sup>1</sup>, Kyle Jared Cuatuy<sup>1</sup>, Rivir Cunanan<sup>1</sup>,  
and Riane Katlyn Go<sup>1</sup>  
Dr. Marla Redillas<sup>2</sup>, Research Adviser

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Hydraulics and Water Resources, Civil Engineering Department,  
Gokongwei College of Engineering, De La Salle University

**Abstract:** Constant pursuit for economic development has led to larger demands of water in several fields including the agricultural sector wherein irrigation plays a vital role. Similarly, De La Salle University has a large area of grass that requires irrigation, but due to constant weather and climate changes, external factors such as evaporation and rainfall lack proper consideration, resulting in improper irrigation. In order to address this problem, this research aims to identify the optimal amount of water needed for irrigating the grass in De La Salle University by factoring out evaporation, the major factors affecting it, such as temperature and humidity; as well as the rainfall experienced within the area. Accordingly, the amount of water loss was determined using a class A evaporation pan while the external factors, such as temperature and relative humidity, were measured using a thermometer and digital weather applications. This was conducted every 24 hours for three weeks from late November to early December. From the data gathered, the research discovered that relative humidity has a greater influence on the amount of water loss from evaporation though more data are needed for more accurate results. Additionally, the results obtained indicate that the water being used and the amount of rainfall greatly exceed the necessary amount of water needed by the grass.

**Key Words:** Irrigation; Evaporation; Rainfall; Humidity; Temperature

## **PAPER PRESENTATION**

---

# **Socio-Economic and Political Landscape (SPL)**



## EPALitics: Defining “Early Campaigning” in the context of Philippine Politics

Edric P. Lantin<sup>1</sup>, Jetrix A. Li<sup>1</sup>, Alexander Jayson A. Manaligod<sup>1\*</sup>,  
Jordan Louie T. Peralta<sup>1</sup>  
Dr. Antonio P. Contreras Ph.D.<sup>2</sup>, Research Adviser

<sup>1</sup>De La Salle University Integrated School (Manila)

<sup>2</sup>Political Science Department, College of Liberal Arts, De La Salle University - Manila

**Abstract:** One of the major features of political activity in the Philippines is the publicity of politicians in various areas, holidays, and seasons, in acts that may be considered as "early campaigning" by local spectators and politicians adopting this practice dubbed as "epalitiko". The term in itself is subjectively used to call out these kinds of candidates in their acts, but there is no explicit legal definition of which that may penalize the candidate. Furthermore, this kind of act was decriminalized by the Supreme Court ruling on the case "Penera v. COMELEC", which has further blurred the rules regarding campaigning outside of the official campaign period. However, Van Erkel's framework on electoral success states that a "long campaign" leads to the eventual success of a candidate, and is noted by local political commentators as a recurring example of basic patron-client relationship between the candidate and the voters. Given this situation, this study analyzes voters' attitudes toward early campaigning by collecting survey data from 200 respondents, proportionately distributed among all LGUs in Metro Manila, to determine how voters react with this concept in relation to their voting behaviour. Initial statistical analysis displayed that early campaigning affects the majority of respondents' behaviour in voting, with the majority of which defining the act as an appealing display of political will of a candidate, while a close significant minority either delves into discernment and is mainly unaffected by early campaigning activities in terms of voting or likened the act with governmental corruption or public nuisance.

**Key Words:** early campaigning; electoral season; voter behaviour; candidate success; Philippine politics

## The Employability of Private and Public School Graduates of the K-12 Program in MUNTIPARLAS

Veronica N. Espino, Kaitlyn L. Sison, Bernadine A. Taylo,  
Ayesha A. Yatco  
Racquel R. Raymundo, Research Adviser

*PAREF Woodrose School*

**Abstract:** The employability of K-12 graduates in the Philippines is currently unknown due to the program's recent implementation. This research was conducted to find the employability of K-12 graduates in the MUNTIPARLAS region and assess the effectiveness of the K-12 program. The descriptive survey research design was used in this study. Two hundred forty-six (n=246) Senior High School (SHS) students and 10 companies were the respondents for the surveys which demonstrated that approximately 52% sought employment after graduating from SHS, with public school graduates having 17.5% more chance of pursuing employment. Eighty-nine percent 89% of students were also accepted into the companies they applied for while 97% of these students have accepted the jobs offered to them. Additionally, it is seen that companies look for six main competencies in graduates: skills learned from school, communication skills, pliability, personality, leadership qualities, and work ethic. However, four out of six of these are said to be unobserved: work ethic, leadership qualities, communication skills, and pliability, which elucidates that K-12 students lack competency in the jobs that they are applying for. Lastly, this research recommends a study on the correlation of the graduates' success with their overall sense of fulfillment, a nationwide survey on the employability of K-12 graduates in the Philippines to see the effectiveness of the K-12 program as a law, as well as a more diverse set of companies to be interviewed for future studies.

**Keywords:** Employability; K-12 program; Senior high School; Philippine education system

## The Level of Implementation of Section 30 of the Kasambahay Law in Muntinlupa, Parañaque and Las Piñas

Katrina Antonio , Andrea Bartolome, Pilar Fernandez, Katrina Hernandez

*PAREF Woodrose School*

**Abstract:** Domestic workers—also known as kasambahays —make up a significant portion of the workforce of the country with at least 1.9 million as of 2011, but estimated to be as high as 2.5 million in 2005 alone. Despite their large population, they were only recognized as a formal labor sector in 2013 with the passage of Republic Act 10361, otherwise known as the Domestic Workers’ Act or the Kasambahay Law. The rights of domestic helpers, however, continue to be neglected. In this study the research team aims to identify the level of implementation of Section 30 of the Kasambahay Law in Muntinlupa, Paranaque, and Las Pinas (MUNTIPARLAS), as well as the leading factors that affect this, based on the frequency of their contributions to the Social Security System(SSS), Pag-IBIG, and PhilHealth. The study also aims to determine the level of appreciation of the law amongst domestic workers. To obtain results, 258 domestic helpers in the MUNTIPARLAS area were chosen through random sampling and surveyed in -person using printed surveys. It was discovered that the Kasambahay Law, though perceived positively by domestic helpers, has a low level of implementation as less than half of the respondents regularly contributed to these social benefits. The results imply that this is due to lack of monitoring and enforcement on the part of the government as well as the kasambahays’ personal unwillingness to contribute. However, the leading factor behind this cannot be truly determined because of the varied answers of the respondents.

**Keywords:** Domestic worker; Kasambahay Law; PhilHealth; SSS; Pag - IBIG

## The Varied Allocations of Salaries for Minimum Wage Earners in the National Capital Region (NCR) and Greater Manila Area

Angelica L. Chan, Annika V. Cruz, Jing-Yu Huang, Sophia S. Medalla,  
Pauline J. Yusi  
Racquel R. Raymundo, Research Adviser

*PAREF Woodrose School*

**Abstract:** Minimum wage has been a controversial issue ever since salary was established in the Philippines. It has recently increased to 537 Php in Metro Manila last November 2018. This minimum wage is even lower for farther provinces. This study aims to identify how these minimum wage earners are able to effectively allocate their respective salaries to their everyday costs of living. This research paper utilizes a quantitative research design to determine how much these workers spend on their different expenses which include food, utilities, education, transportation, rent and others. It also presents which of these expenses do they prioritize the most and the least. The sample size taken is a total of 250 respondents from different areas found in the National Capital Region (NCR) and the Greater Manila Area (GMA). The researchers then ask these chosen respondents to answer a detailed survey to understand and analyze why these minimum wage earners choose to allocate their salary accordingly. The findings of the study show that food turns out to be the most prioritized and spent because it is a basic need for each one to consume the most frequent. Meanwhile, clothing and others are the least prioritized and spend for because these are not immediate needs of a minimum wage earner.

**Keywords:** Minimum Wage; Expense; Sufficient; National Capital Region; Greater Manila Area

## Understanding the Priorities of Bus Companies in Relation to the Perspectives of a Government Agency

Bernard Angelo B. Basilan<sup>1,\*</sup>, Nathaniel Augustus B. De Leon<sup>1,\*</sup>,  
Alan Patrick R. Obra<sup>1,\*</sup>, Gil Andrew D. Painitan<sup>1,\*</sup>,  
and Loben Klien A. Tipan<sup>1,\*</sup>,  
Engr. Paolo C. Lucero<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Civil Engineering Department, Gokongwei College of Engineering,  
De La Salle University-Manila*

**Abstract:** Public transportation is a vital foundation to a country's economy and livelihood. The Philippines has a widely-perceived problematic transportation system and this problem has been seemingly getting worse by the year. An integral part of the Philippine transportation system is the bus system. This study tackles the problem by doing a comparative study regarding the improvement of the bus system. This study compares the perspectives of the government agency and two bus companies; Bus Company A and Bus Company B regarding the improvement of bus systems in Metro Manila. The participants were interviewed about their operations and their priorities when franchising for a bus company. The participants were also tasked to rank 48 statements, which corresponds to certain factors, in order to statistically determine. with the use of the Kruskal-Wallis H Test; whether a significant difference exists between the perspectives of the two entities. This study provides an insight to differences regarding the perspectives and priorities of the government agency as compared to private bus companies.

**Key Words:** transportation; bus; bus companies; government agency

## **PAPER PRESENTATION**

---

### **Theoretical, Philosophical and Historical Studies (TPH)**

## Reconstructing Filipina Comfort Women: Sources, Methodologies, and Challenges

Louisse Katherine S. Gappi  
Javier Leonardo Rugeria, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** During the Japanese occupation of the Philippines between 1942 and 1945, Imperial Japan established comfort women stations where around a thousand Filipinas were forcibly recruited to become objects of harassment and rape for the Japanese troops. Roughly 70 years after the war, the victims of this military sexual slavery, otherwise known as *lolas*, have yet to be heard in their call for a measure of justice in compensation for the atrocities and gross violations to human rights that they have experienced. This predicament is aptly addressed as the comfort women issue, and it persists because of constant denial of events, strained political relationships, and more importantly, scant documentation that can actually tell a nationalist narrative about the *lolas*. This paper thus provides a historiographic approach to the comfort women issue in a bid to address the lack of historical documentation about the victims of the comfort women stations. In what follows, I discuss the existing sources extant at select repositories in Manila. Second, I examine applicable methodologies based mainly on Martha Howell and Walter Prevenier's concept of source criticism in *From Reliable Sources: An Introduction to Historical Methods*. Finally, I analyze pervasive challenges within the sources and methodologies, particularly what sustains the scant documentation that keeps scholars from reconstructing a narrative on the comfort women in the Philippines.

**Key Words:** Filipina comfort women; documentation; sources; methodologies; challenges

## Encarnacion Alzona and the Filipino Woman: Periodizing the Feminist Movement in the Philippines

Maria Andrea Bodaño, Fatima Anne Brian, and Sarah Nelle Pasao  
Javier Leonardo Rugeria, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** While some were against women's participation in politics, Encarnacion Alzona, a proponent of the suffrage movement, countered this idea. She asserted that women remain defenseless against government corruption, injustice, and oppression as long as they do not hold the most powerful instrument in a democratic country— the ballot. Alzona had contributed her feminist views and documentation of the Philippine feminist movement through her written publications, which served as important pieces of evidence tracing back to the feminist movement in the Philippines. By way of an intellectual biography, we first examine two of Encarnacion Alzona's most salient writings, particularly *The Filipino Woman* (1938) and *Education of Women* (1939). Second, we discuss how Alzona periodized the Filipino woman and the feminist movement in the Philippines during the American colonial period in these writings. Finally, with the aid of archival sources from the Ateneo Library of Women's Writings (ALIWW), we situate Alzona's ideas against the backdrop of her involvement in the suffrage movement from 1918 to 1937, particularly her active participation in women's organizations, such as the Women's Citizen's League. The eagerness of these women's organizations remained despite the opposition and countless rejection of the suffrage bill. These setbacks only impelled suffragists to strengthen their campaign for their enfranchisement. In 1937, feminism finally triumphed as Filipino women won their right to vote.

**Key Words :** Encarnacion Alzona; women's movement; Filipino women; feminism; intellectual biography



## **Tragedy in the Orient: The De La Salle College and The Battle of Manila, February 1945**

Arriana Francine Adato, Joseph JP Dinglasan and Ron Owen Restoles  
Leonardo Vitug Rugeria, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** Between February 3 to 15, 1945, a series of massacres took place in Manila, beginning with the killings in Dy-Pac Lumber Yard in Tondo. One of the many killings during the Battle for Manila took place at De La Salle College in Malate on February 12, 1945, where the Japanese claimed the lives of 16 La Sallian brothers and 29 civilians. Seventy-five years hence, the causes and reasons for these killings remain obscure and a significant research gap in the institution's history. In what follows, we discuss what transpired at De La Salle College from February 12 to 15, 1945. With the aid of pertinent archival documents and secondary sources, we also situate the DLSC massacre within the context of a wider Battle for Manila and explain its long- and short-term causes. Finally, we argue that the DLSC massacre was part of a systematic rampage perpetrated by the Japanese in response to the impending American advance to the city.

**Key Words:** De La Salle College; Japanese Occupation; Massacre; World War Two; Battle for Manila

## **Badly Led: Why the Philippine Revolution Failed According to Apolinario Mabini**

Maria Bianca S. Maranan  
Mr. Lambert Yancy Garganta

*De La Salle University Integrated School (Manila)*

**Abstract:** Compared to fellow figures such as Rizal and Bonifacio, Apolinario Mabini does not leave much of an imprint on the Filipino consciousness. Mabini was one of the key individuals who wrote articles, decrees, and other political papers in Philippine history, particularly in the Philippine Revolution and the Philippine-American War. In *La Revolucion Filipina*, Mabini stated that his main reason for why he viewed the Revolution as a failure was because it was badly led. This research aims to investigate Mabini's background and writings in order to frame how he believed the Revolution should have gone, and why it resulted in failure.

**Key Words:** Apolinario Mabini; Philippine Revolution; Philippine History

## **Ambivalence and Apologia: Teodoro Andral Agoncillo's The Fateful Years and The Burden of Proof**

Neil Andrei L. De Luna, Pio Alfonso Oliver  
and Marcus Philip McLaren Papas  
Javier Leonardo Vitug Rugeria, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** In November 1960, Teodoro Agoncillo addressed fellow historians at the First International Conference of Historians of Southeast Asia and called for the rewriting and reinterpreting of Philippine history according to the Filipino point-of-view. In his address titled "Usable Past," he criticized the framework maintained by historians who wrote through the lenses of the colonizers and called for "the liberation of the Filipino mind...in a manner conducive to the national welfare." No other writing articulated this viewpoint better than his account of the Philippine Revolution in *Revolt of the Masses* (1956) where Agoncillo underscores the narrative of the uneducated masses and posited an opposition not only against the Spaniards but also with the Filipino elite, who, for Agoncillo, had betrayed the Revolution. In his accounts on the Japanese Occupation Period, however, particularly in *The Fateful Years* (1965) and *The Burden of Proof* (1984), he accounts in his narrative the perspectives of the colonial power in the Japanese and privileges the narrative of the elite in Jose P. Laurel and Jorge Vargas respectively. In what follows, we examine Agoncillo's *Revolt*, and discuss in particular his a). definition of the "Filipino" or whose perspective did he account for in his narrative, and b). his attitude towards the colonial power in these writings. We, then, contrast these with *The Fateful Years* and *The Burden of Proof* where he maintains an apologetic stance towards Laurel and Vargas and ambivalent attitude towards the Japanese. Finally, we explain what accounts for Agoncillo's radical historiographical shift.

**Key Words:** Teodoro Agoncillo; Historiography; Filipino point-of-view; Japanese Occupation; Philippine Revolution

## Impresiones : Antonio Luna's Travel Essays in La Solidaridad

Francine Kwin Rona B. Pegaro  
Javier Leonardo Vitug Rugeria, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** On October 31, 1889, Antonio Luna's "First Impressions of Madrid" was published in the Arts and Letters section of the fortnightly organ of the Propaganda Movement, La Solidaridad . Written under the pseudonym Taga - Ilog , the essay was a vignette of Madrid life as well as Luna's disenchantment towards the city, his responses to Spanish racist apologists like Celso Mir Deas, among other backwardness he observed in Madrid. These essays appeared serially in the newspaper until 1891 and were later compiled into a book titled Impresiones Madrile ñ as de un Filipino. Studying this writing of Antonio Luna gives significance in examining the details that surround it inside the Propaganda Movement. In what follows, I situate Luna's Impresiones against the Propaganda Movement. First, I discuss Luna's involvement in the Propaganda Movement, particularly prior to the construction of La Solidaridad and subsequently, his contribution as a writer with his Impresiones for the newspaper. Second, I examine these essays on Madrid and its respective dates in order to investigate side-by-side its writings with the events occurring in the Propaganda Movement. Third, I explain the motivations behind Luna's Impresiones — his composition that showed not just the fervent patriotism that he contributed in La Solidaridad , but also his skills as a writer and as one of the Ilustrados during the Propaganda Movement.

**Key Words:** Impresiones ; Antonio Luna; Propaganda Movement; La Solidaridad ; history

# **POSTER PRESENTATION**

---

## POSTER PRESENTATION

---

# 21<sup>st</sup> Century Learning and Innovations (CLI)

## Acceptability of Coffee and Turmeric Inked-pen

Lorielyn Mendoza, Kreza Deymos, Shyrina Amador, Dan Lloyd Bedia,  
Renante Buitizon, Rosemarie Dela Pena, Liezl Maravilla, John Mark Morcilla  
and Krisha Mae Ortaliza  
Cherry Ona, Research Adviser

*Tagkawayan National High School*

**Abstract:** The main objective of the study was to investigate the acceptability of coffee and turmeric inked-pen among Grade Eight students of Tagkawayan National High School. The study identified the level of acceptability of coffee and turmeric inked-pen in terms of: perceived usefulness, perceived ease of use, behavioral use and actual usage. The experimenters employed quantitative approach through an experimental research design. Post-test was used to identify the acceptability of coffee and turmeric inked-pen. The study included thirty-six (36) respondents who were randomly selected from section JVD. In treatment A, which was turmeric-inked, the pen received a weighted mean rating of 4.19. Results also revealed that participants assigned to this treatment condition intend to use the pen regularly due to its unique color, ease of use as the ink releases a continuous line consistently. However, the ink was a little bit fuzzy owing to its color. Treatment B pen, which was coffee-inked, received a higher mean rating of 4.51. Participants revealed that the pen was more acceptable and easier to use because the ink came with a pleasant aroma. They also expressed their intention to use it regularly because of its uniqueness. As gleaned from the findings, the coffee-inked was preferred over its turmeric-inked counterpart. Furthermore, the coffee-inked pen was more suited for writing, environment-friendly and affordable.

**Key Words:** turmeric ink; coffee ink; post-test; treatment; inked-pen

## **POSTER PRESENTATION**

---

### **Computer and Software Technology, and Robotics (CSR)**



## Analyzing Structural Metrics to Predict Twitter User Personality Traits

Anna Veronica Gabata<sup>1</sup>, Jarod Anjelo Lustre<sup>2</sup>, Irish Danielle Morales<sup>3</sup>,  
and Ziv Matthew Rodriguez<sup>4</sup>  
Mr. Edward P. Tighe<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Software Technology Department, College of Computer Studies,  
De La Salle University-Manila*

**Abstract:** Personality affects one's decisions, preferences, and actions. The Five Factor Model (FFM) describes personality based on five traits: Openness, Conscientiousness, Extraversion, Agreeableness, and Neuroticism. Using the FFM, previous studies modelled personality based on text from social media posts. However, most studies focus on the linguistic or language-dependent metrics of text and few explore the use of structural or language-independent metrics. This study creates an approach for personality trait recognition using the structural metrics of tweets from Twitter, an online social media platform. This was done by extracting the structural metrics of tweets, modelling personality traits based on the FFM, and evaluating the performance of the created model. Based on the results, support vector regression was consistently more accurate than linear regression in making predictions. Neuroticism and Extraversion were the easiest traits to model while Conscientiousness was the hardest. Uppercase character count, character count, and word count were the most informative metrics in making predictions. Due to poor goodness-of-fit scores, however, neither of the models made accurate predictions. Other models should be explored to validate the feasibility of recognizing user personality traits based on the structural metrics of their tweets.

**Key Words:** personality trait recognition; natural language processing; machine learning; structural metrics; five factor model

## State Analysis of Three-node Network Motifs using Boolean Model

Philipe Chan<sup>1</sup>, Rlan Manero<sup>1</sup> and Matthew Te<sup>1</sup>  
Angelyn R. Lao<sup>2</sup>

<sup>1</sup> *De La Salle University Integrated School (Manila)*

<sup>2</sup> *Mathematics and Statistics Department, College of Science,  
De La Salle University-Manila*

**Abstract:** A Gene Regulatory Network (GRN) is a biological system that represents interactions between molecular regulators and their potential targets inferred from gene expression data. GRN can be complex and complicated, which often foregoes the more valuable micro-dynamic behavior occurring between small-node interactions within the network. For this reason, we opt to study three-node boolean network motifs which are simpler and may be optimal indicators of the whole-network behavior. Eleven biologically relevant feedforward and feedback loop GRN motifs are chosen and represented as Boolean network models. Various state analyses such as drawing the state transition graph (STG), locating the shortest path presented as transient time (TT) graphs, and attractor identification are performed. Our results provide a better understanding of the dynamical state of the three-node network motifs.

**Key Words:** gene regulatory networks; Boolean modeling; three-node network motifs; feedforward loops; feedback loops

## **POSTER PRESENTATION**

---

### **Food, Nutrition, and Health (FNH)**

## Pectin from Calabash Fruit as a Promising Antioxidant and Antihypertensive Promoting Agents

Hanna Basañez<sup>1</sup>, Zary Laurena<sup>1</sup>, Carmela Ortiz<sup>1</sup> and Kyla Perido<sup>1</sup>

<sup>1</sup>South Hill School Incorporated, Los Baños, Laguna  
Amando Perfecto DLC Molin and Jeric Villanueva

**Abstract:** *Crescentia cujete L.* is a flowering plant native to South and Central America, but has been distributed in Africa and Southeast Asia and it is said to have pharmaceutical uses. Hypertension is linked to various conditions such as diabetes, heart disease, abdominal obesity, and cancer which constitute the metabolic syndrome when two or more of these metabolic disorders are present in a person. It is a serious problem that could be fatal to humans as one grows older. The study specifically aims to determine the chemical characteristics of pectin from the pomace, to know the antioxidant activity of pectin, and to determine the antihypertensive activity of pectin using ACE inhibition assay. Qualitative tests were performed to be able to know the presence of phytochemicals in the extracted pectin. This study used DPPH radical scavenging activity assay and angiotensin-converting enzyme inhibition assay in determining the antioxidant and antihypertensive activity. The presence of alkaloids, steroids, terpenoids, and cardiac glycosides were observed. However, the researchers also found out that there was no presence of tannins. The radical scavenging activity of extracted pectin ranged from 0.27% to 0.65% and had 78.173% to 90.273% of inhibition in angiotensin-converting enzyme compared to the 91.150% inhibition of Captopril which is a popular remedy in reducing blood pressure. The fruit's inhibition towards angiotensin-converting enzyme reveals that the samples have a high chance of preventing hypertension. It is recommended to study the antidiabetic and anticancer activity of the pectin of *Crescentia cujete L.* .

**Key Words:** *Crescentia cujete L.*; 2,2Diphenyl-1-picrylhydrazyl (DPPH); angiotensin-converting enzyme (ACE); antioxidant; antihypertensive

## A Study on the Correlation of Carbon Dioxide in the Breath and Blood Glucose Concentration

Mikaella Bogñalbal<sup>1</sup>, Pia Erlin Calape<sup>1</sup>, Vaschel Anne Hadloc<sup>1</sup>,  
and Myrtle Anne Marie Santos<sup>1,\*</sup>  
Dr. Maria Carla F. Manzano<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Physics Department, College of Science, De La Salle University-Manila*

**Abstract:** Glucose is a constituent of blood amongst humans and is the primary source of nearly all the energy in the cells and organs of the body. It is formed after the consumption of sustenance in which it is abundant in sugar levels. Glucose undergoes the process of Glycolysis in order to oxidize and form ATP molecules which are responsible for our energy. Thus, having sufficient glucose levels is critical to a human's well-being. However, an excessive amount of glucose in the blood can lead to serious complications such as diabetes, a disease that damages the body's ability to process glucose in the blood and is the major cause of organ failures. Patients diagnosed with Diabetes are advised to monitor their glucose levels using a portable electronic glucose meter which makes use of the invasive finger-prick method. However, this method is inconvenient for most patients because of its painful and distressing invasive process as this is repeated frequently. In response to a need for a less painful and convenient method of detecting blood sugar level, the authors report a non-invasive alternative to blood glucose monitoring based on human breath analysis. Data and correlation studies show moderate correlation between breath CO<sub>2</sub> concentration and blood glucose level, indicating that breath CO<sub>2</sub> concentration can be used as a biomarker for blood sugar levels.

**Key Words:** glucose; diabetes; carbon dioxide; non-invasive glucose monitoring; breath analysis

## ***Acetylsalicylic Acid (Aspirin) Negatively Regulates Growth of *Abelmoschus esculentus* (Okra)***

Mariel Ong<sup>1</sup>, Jean Delima<sup>1</sup>, Alissha Cardona<sup>1</sup>, and Roberto Angeles<sup>1</sup>  
Dr. Mark R. Redillas<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Biology Department, College of Science, De La Salle University-Manila*

**Abstract:** Crop growth determinants include abiotic factors such as light, water, temperature, certain nutrients, and plant growth regulators. Plant growth regulators (PGRs) are substances that influence the development of plants and are already present within the plant structure. This study determined whether *Acetylsalicylic acid* (ASA) can serve as a growth regulator for *Abelmoschus esculentus* (Okra). To determine those effects, researchers aimed to measure growth parameters, specifically height, and compare the growth rates based on the different concentrations of 1, 1.2, 1.5 and 3 mM, along with a control variable. Two separate set-ups were performed, wherein the seeds of one were directly placed into the soil and the other was initially germinated in paper towels for 24 hours before planting. Exogenous application of ASA began once leaves were established and plants were sprayed every 2 days, along with data gathering. Plant maintenance was observed everyday. For the first set-up, conducting a two sample t-test showed that there is a significant difference in growth rate between concentrations higher than 1 mM and the control variable. However, the test also revealed that there is no significant difference in growth rate between 1 mM concentration and control. As for the second set-up, t-test results showed that growth rates among the control and the four concentrations have no significant difference. Both set-ups show that the control variable obtained the greatest height with the values declining as the Okra is introduced to higher concentrations of ASA, thus making it a negative growth regulator.

**Key Words:** Growth regulator; *Acetylsalicylic acid* ; *Abelmoschus esculentus*; Concentrations

## **POSTER PRESENTATION**

---

# **Gender, Human Development and the Individual (GHI)**

## Perceived Gender-Related Messages in Television Advertisements and Their Influence on Senior High School Students

Pamei Ainsley R. Albotra<sup>1</sup>, Allysa Jean V. Bergado<sup>1</sup>, and Ma. Alexa S. Satur<sup>1</sup>  
Ms. Ma. Elena C. Javier<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Behavioral Science Department, College of Liberal Arts, De La Salle University-Manila*

**Abstract:** With the amount of television advertisements that is shown to the public today, the content released can influence a person's perception. The use of stereotypes within this field can carry certain implications, which, when shown for long periods, have the power to sway a person's perceptions of self and others. Hence, the study intends to identify perceived gender messages (stereotypes and roles) in selected television advertisements, determine the influence these messages have on the viewers, and determine whether gender and frequency of viewing affects one's ability to spot these messages. Data was gathered through key informant interviews with 9 female and 6 male senior high school students, who were shown 5 preselected television advertisements. Key informants were interviewed to analyze differences in perception. Perceived gender-related messages identified by key informants were categorized by gender's physical appearance, roles, and character traits. Results indicated that the messages influenced key informants negatively. Other findings revealed that gender does not affect the perceptions of both men and women. There is also a connection between the gender of the advertisement's main character and the spotted gender messages. Further analysis shows that key informants were still able to identify gender messages in television advertisements, whether they have previously seen the ad or not. As a result, frequency of viewing does not affect one's ability to spot gender messages. Rather, the ability to do so is affected by what is being shown to the viewers.

**Key Words:** gender; stereotypes; advertisements; television; senior high students



## **POSTER PRESENTATION**

---

### **Materials Engineering (MEN)**

## Improving Concrete Quality Using Water Hyacinth (*Eichhornia crassipes*) Stem Fibers

Shaun Dangoy, Cristan Ang and Miguel Frias  
Leah Madrazo, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** The incorporation of natural fibers like banana fibers and abaca fibers in concrete has yielded positive results, increasing the compressive and flexural strength significantly, while having a minimal increase in tensile strength. To further study this field, water hyacinth fiber may be used because of its high flexibility quotient, giving it high mechanical strength, allowing it to be a suitable material to be used in improving building materials. This study aims to investigate the effects of adding water hyacinth fibers cut into 50mm long strips to the compressive, flexural and tensile strength of concrete and at which percentage in weight is most effective in improving concrete quality. This experiment used 4"x8" cylinder samples for the compressive strength test and split-tensile test, while another batch of 4"x4"x4" samples for flexural strength test. Results show that among the samples that had water hyacinth fiber additives, those with only 0.25% of fiber additives in weight had more strain capabilities, while the samples that received no fiber additives performed better or comparably to the other samples in all three tests. In conclusion, water hyacinth fibers are not effective additives in concrete; however studies should be conducted on the effects of water hyacinth fibers as aggregates in concrete.

**Key Words:** concrete; water hyacinth (*Eichhornia crassipes*); compressive strength; flexural strength; tensile strength

## **A Comparative Study on the Effect of Polystyrene and Coconut Fibers as Aggregates on the Compressive Strength and Fire Resistance of Concrete**

Paolo Dominic N. Guerrero<sup>1\*</sup>, Jose Romualdo F. Babao<sup>1</sup>,  
Denise Joelle B. Jacela<sup>1</sup>, John Marvic G. Mojica<sup>1</sup>, and Glenson Dominic L. Sia<sup>1</sup>  
Engr. Joenel G. Galupino<sup>2</sup>

<sup>1</sup>*De La Salle University Integrated School (Manila)*  
<sup>2</sup>*Civil Engineering Department, Gokongwei College of Engineering,  
De La Salle University-Manila*

**Abstract:** Most infrastructures are all built by using concrete. In the interest of improving its most beneficial characteristic, compressive strength, engineers opt in changing the types or the ratio of the materials found in a specific mixture which results in a variety of effects on the mix. Since designing a concrete mix greatly depends on the characteristic of the materials used, specifically the properties of coarse and fine aggregates, chemically produced admixtures and synthetically made aggregates are often used. In an attempt for a sustainable development, agricultural wastes, such as polystyrene and coconut fibers, were separately used in the concrete mix as coarse aggregates to improve the compressive strength and fire resistance of the concrete. More so, three set – ups were made, each with six samples, one set – up made use of polystyrene as the coarse aggregate component (alongside gravel) of the mix, the other incorporated coconut fibers – replacing the polystyrene, and the last was used as the control with no coarse aggregates other than the gravel. Further development of the aggregates and ratios used may lead to greater results.

**Key Words:** coarse aggregates; compressive strength; fire resistance; sustainable

## Preliminary Investigation on the Performance of Concrete with Pulverized Crab Shells as a Partial Replacement for Cement

Anton Alonzo<sup>1</sup>, Margareth Pablo<sup>1</sup>, Alec Ranara<sup>1</sup>, and Joaquin Tronco<sup>1</sup>  
Erica Elice S. Uy, PhD<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Civil Engineering Department, Gokongwei College of Engineering,  
De La Salle University-Manila*

**Abstract:** Construction is an industry that consistently demands amounts of cement and aggregates to form concrete. Conventional methods to manufacture Ordinary Portland Cement, however, have shown to pose negative effects on the environment, biodiversity, and human health. Secondary raw materials, both biodegradable and non-biodegradable, have been investigated as cement alternatives to address this concern. The objective of the study is to investigate the potential of crab shells as a partial substitute for cement due to its calcium carbonate (CaCO<sub>3</sub>) content. Controlled specimens and batches using 15:85 and 20:80 crab shells-to-cement partial substitution ratios were created using standard values in 100x200mm cylinders. Tests have shown that the concrete cylinders with 15% cement replacement with a curing period of 28 days was able to garner the best result out of the two replacement ratios in terms of compressive strength or structural integrity. Nevertheless, it is still significantly lower than the standards set by the control group. Another notable property observed about the produced concrete cylinders with 20% replacement was that its compressive strength peaked at the 14-day curing period as opposed to the other sample groups which peaked at 28 days. Overall, larger substitutions of calcined crab shell powder resulted in a decrease in compressive strength. Therefore, pulverized crab shells are a potential viable substitute for cement at lower ratios.

**Key Words:** crab shells; cement; compressive strength; concrete; partial replacement

## **POSTER PRESENTATION**

---

### **Media and Philippine Studies (MPS)**

## Evaluation of Disaster Readiness and Preparedness of School Age Children in Pasig City

Bool, Karyl Princess L.  
Gacutan, Almira, Research Adviser

<sup>1</sup>*Treston International College*

**Abstract:** Disasters like typhoons and earthquakes pose serious threat to people. This study evaluates the disaster readiness and preparedness of the school age children in Pasig City specifically in terms of earthquakes and typhoon as well as, their awareness on the NDRRMP or the National Disaster Risk Reduction Management Plan. The researcher utilizes the descriptive quantitative method. Simple Random Sampling is the sampling technique used to determine the respondents of the study. The respondent must be a school age child in grade 4, 5 or 6 studying in Pasig City. The researcher makes use of 60 respondents, 20 from each grade level mentioned. Disaster preparedness is essential for survival and is considered as a priority for the respondents because they are vulnerable in times of disasters. The study is able to find out that the school age children are aware of the National Disaster Risk Reduction Management Plan or the NDRRMP garnering a weighted mean of 4.49-5.00 and aware of the procedures done before, during, and after earthquakes and typhoons garnering a weighted mean of 4.49-5.00 from the various categories given. Possible interventions were also included in the discussion of this research.

**Key Words:** Disaster Readiness and Preparedness; Disaster; School age children; NDRRMP

## **POSTER PRESENTATION**

---

### **Sustainability, Environment & Energy (SEE)**

## Utilizing PMMA optical fiber and metallic gold foil as a daylighting system in growing sweet potato (*Ipomoea batatas*) plantlets in vitro

Rysha Joy Alfaro, Katrina Yzabel Baladjay, Erika Beatrice Divinagracia,  
and Princess Leilene Millan  
Ms. Phebe Mendoza, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** Due to the Philippines' urbanization, the agricultural spaces for growing sweet potato (*Ipomoea batatas*) have been occupied by infrastructures, leaving small-scale farming areas for Filipino farmers. Alongside this, the country's high consumption of sweet potatoes and lack of capital to support farming gradually forward the idea of indoor plantation and the search for energy-efficient lighting solutions. This study focuses on utilizing Polymethyl Methacrylate (PMMA) optical fibers and metallic gold foil as a daylighting system to cultivate sweet potato plantlets in vitro. This research aims to determine the effects of the indoor daylighting system on the following destructive measurements of the sweet potato plantlets: leaf area, number of leaves, shoot length, dry weight, and carbohydrate content. This study compares the growth of the sweet potato plantlets grown indoors to that of the plantlets cultivated outdoors, the controlled set-up. The results indicated that there is no significant difference ( $p > 0.05$ ) among the leaf area, number of leaves, shoot length, and dry weight of the sweet potatoes of both set-ups that have been grown for 95 days. However, there is a significant difference ( $p \leq 0.05$ ) in the carbohydrate content between the controlled and experimental set-up. In addition, a super typhoon hit the country while the experiment was conducted and greatly affected the controlled set-up's plantlets while the sweet potato plantlets from the experimental set-up were kept safe, proving that the daylighting system fulfills its significance of protecting the plants and reducing repair costs, which benefit the users of indoor planting.

**Key Words:** Polymethyl methacrylate (PMMA) optical fiber; gold foil; daylighting system; sweet potato (*Ipomoea batatas*)



## **An Assessment on the Oil Spill Adsorption Potential and Reusability of Alkali-treated Scrap Abaca Fibers in Various Lengths**

Zyrhill M. Diccican, Patrick Angelo F. Aquino, Adrienne Jae U. Gabor,  
and Niels Henrik D. Aguiba  
Sherilyn T. Abarra, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** Oil spill is a global issue that has been occurring since the discovery of crude oil in 1859. Marine oil spills could contaminate the seafood supply, harm marine organisms, and harm other species of birds that live in the sea. Incidents of oil spills pose a global threat to the marine environment. The Philippines is the greatest supplier of Abaca Fibers around the world. The extraction process of Abaca Plant into Abaca Fibers produces considerable amounts of waste or Scrap Abaca Fibers, which are still underutilized. The research aims to assess the potential of Alkali-treated Scrap Abaca Fibers (ASAF) as a natural sorbent for oil spill. The Scrap Abaca Fibers were treated with Alkali for better adsorption. The experiment is limited to a miniature set-up that consists of Distilled Water and Motor Oil in a beaker, which marginally represents the elements in a Marine Environment when exposed in an oil spill. The One-way ANOVA Analysis was used for the statistical treatment, and to compare and analyze the Adsorption ability of the ASAF adsorbent, while mean and standard deviation were used for the analysis of the Reusability tests. It was found that the ASAF adsorbs more motor oil than the Human Hair, and ASAF can be reused several times after its first oil adsorption.

**Keywords:** Alkali; Oil Adsorption; Oil Spill; Reusability; Scrap Abaca Fibers

## The Potential of Watermelon (*Citrullus lanatus*) Seeds as a Natural Coagulant in Reducing Surface Water, Groundwater, and Wastewater Turbidity

Louie Shane P. De Leon, Jerome P. Dela Cruz,  
Tanya Angela Nadine S. Hernandez, and Marc Gabriel L. Rosanes  
Whenn G. Peña, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** Water is an essential for any living organism for various processes and survival. Around billions of individuals continue to live in deficient water quality, sanitation, and hygiene. Coagulation is an integral process in water treatment in which turbidity is mainly reduced. The aim of this study is to examine the potential of watermelon seeds in reducing water turbidity to provide a substitute for chemical coagulant, alum, which causes unwanted diseases. A modified jar test experiment was performed on different water samples to identify the optimum conditions in terms of coagulant dosage. Results have shown that the optimum amount of the natural coagulant from *Citrullus lanatus* (watermelon) seed is 0.1g for surface water, 0.6g for groundwater, and 0.1g for wastewater. The natural coagulant significantly decreased the turbidity level of the surface and ground water samples, but results showed otherwise in wastewater. In the initial and constant readings of the surface water, 17.5 NTU and 13.9 NTU, were reduced respectively, while 21.5 NTU and 27.4 NTU were reduced from the initial and constant readings of the groundwater. The initial and constant readings of the wastewater were increased by about 55 NTU and 83.1 NTU respectively. Despite the fact that the results did not satisfy the WHO Standards, the natural coagulant can provide coagulated water that can be used in various non-potable ways.

**Key Words:** watermelon; seed cake; natural coagulant; turbidity

## **Potential of Charcoal Ash-based Particle Film in Managing Cacao Mirid Bugs (*Helopeltis bakeri*) on Pods of Cacao (*Theobroma cacao*)**

Angelo Lood, Tristan Cabana, and Chloe Dayap  
Leah D. Madrazo, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** Cacao (*Theobroma cacao*), produces a wide variety of products such as cocoa powder, cocoa butter, and chocolates. Along with other crops, the cacao plant is highly susceptible to numerous pests and diseases that often lead to damages. Particle film technology, a method that uses a safer approach of pest management, has slowly become increasingly prevalent in the Philippine agriculture. This research aims to verify whether a charcoal ash-based particle film can adhere completely to the surface of cacao pods, similar to that of the kaolin solution. To test the potential of the solution, two experiments were done: a Choice test and a No-Choice test. The effectiveness of the particle film materials depends on the number of lesions that are present on the surface of the pod after 24 hours of observation. Results of the experiment further support the claim of charcoal ash as a potential alternative material to kaolin, due to the minimal difference in the damage on the surface area of the pods.

**Key Words:** *Theobroma cacao* ; particle film technology; kaolin; cacao mirid bugs; lesions

## An Investigation on *Moringa oleifera* mixed with Bentonite as a Natural Oil Sorbent

Ariel Fernandez, James Garcia, and Wesley Murillo  
Ms. Whenn G. Peña, Research Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** Sorbents are substances that absorb or adsorb contaminants from water. Depending on its morphology, the contaminant can either go through the sorbent's pores or adhere to its surface. This study investigated the efficacy of *Moringa oleifera* seeds as a natural oil sorbent and was compared to Sawdust and Bentonite sorbent. The procedure was adapted from Fu and Chung's study on Sorbent Efficiency and Liu and Wang's study on Adsorption Capacity. Sorbent Efficiency calculated the fraction of oil that the sorbent can adsorb, while Adsorption Capacity calculated how much more weight the sorbent can retain. Results showed that the three Sorbent Efficiencies were similar, yet the Sawdust + Bentonite Sorbent showed to have a higher Sorbent Efficiency with 85.85%. *Moringa oleifera* + Bentonite had a lesser Sorbent Efficiency at 83.60%, while *Moringa oleifera* only had 81.82% Sorbent Efficiency. The results of the Adsorption Capacity showed that the three sorbent formulations had minor differences. The Sawdust + Bentonite Sorbent had the largest Adsorption Capacity of 286.17%, while the *Moringa oleifera* + Bentonite Sorbent had an Adsorption Capacity of 278.67%, and the *Moringa oleifera* only had an Adsorption Capacity of 272.73%.

**Key Words:** *Moringa oleifera* ; Sorbent Efficiency; Adsorption Capacity

## Species Richness of Ground-Dwelling Ants and Their Relation to the Habitat Types of Selected Areas in De La Salle University Laguna Campus

Roberto Gabriel A. Bas, Edgar Allan E. Colmo, and John Patrick M. Diaz  
Leah Madrazo

*De La Salle University Integrated School (Laguna)*

**Abstract:** De La Salle University Laguna Campus is presumably rich in biodiversity surrounding area having a large number of varying habitats. The study aims to determine the species richness of an efficient bioindicator, ants, in three selected areas on campus. The three selected areas vary in the following habitat types: agroforest, younger secondary forest, and older secondary forest. Pitfall trapping was used by the researchers as the method of ant collection. The collected ants were morphologically identified down to their genera using a Philippine ant genera identification key developed by General and Alpert (2012). The specimens were then discerned into morphospecies, which were then used to represent the biodiversity via species richness of each selected area in relation to habitat type. A total of four subfamilies, 13 genera, and 21 Morphospecies were identified in the three sites. Based on the results, there is a decreasing variety of ant species from the agroforest that contained the largest number of morphospecies to the old secondary forest, which contained the least. Therefore, the observable trend indicates that the agroforest is the most species-rich among the three habitat types.

**Key Words:** ant biodiversity; bioindicators; habitat types; pitfall trapping; species richness

## Synthesis of Bio-based Polymer from Acetylated and Plasticized Consumer-Grade Cotton Fiber

Cheryll Rebadomia<sup>1</sup>, Blythe Castro, Juan Miguel de Jesus, Kurt Gutierrez  
Dominador Callo Jr., Research Adviser

*San Beda College Alabang*

**Abstract:** The demand for bio-based polymers has been increasing at present because of the need for PET (Polyethylene terephthalate) plastic alternative. Plastics may take centuries to decompose which may harm the environment as a whole. Significant studies to lessen the use of the latter is being conducted to create environment-friendly, and cheaper products. In this study, the researchers aim to synthesize a bioplastic catalyzed by sulfuric acid from consumer-grade, medical cotton fiber through acetylation. The researchers chose to use a consumer-grade cotton because of its purity and 90 % cellulose content. Studies suggest that the feasibility of creating bioplastics, by replacing artificial polymers with biomass-derived polymer chains and binders is expected to be possible. After conducting the experiment, the synthesis of bioplastics from cellulose containing substances, such as, consumer-grade, medical cotton fiber is successful. However, qualitative observations suggest that, currently, it could not compete against the durability of conventional plastic. Upon building on the knowledge that biomass-derived reactants produce biodegradable plastic products, the researchers believe that the study is significant in contributing to the long-term environmental impact of plastics. It is worth noting that the bioplastic produced by the researchers is unrefined. To summarize; (1) Bio-based polymer synthesis via consumer-grade cotton is feasible, (2) Unrefined cotton-based plastic is currently coarse, opaque, and brittle, (3) Glycerin as a plasticizer for acetate-based bioplastics has an observable impact on the resulting products (4) Further studies aimed at the improvement of bioplastic synthesis are recommended to be made.

**Key Words:** Bioplastic; Cellulose; Acetylate; Plastic

## Adsorption of Methylene Blue Dye using Varying Dosage of Coconut Lumber Sawdust Adsorbent

Kiana Magcuyao, Ricardo Salvador III, Lyra Calizon, Jessica Lugtu  
Jaryna Limbauan, Anna Tameta

*De La Salle Araneta University*

**Abstract:** Waste recovery from textile industries has not been given its due attention despite it being one of the polluting industries. Dyes are highly toxic, and exposure to organic dyes such as Methylene blue can affect the health of the people. Among the methods used for removing dyes from water, adsorption is considered a potential alternative, low-cost solution. This study aims to determine the capability of the different dosage (0.1g, 1.0g, and 2.0g) of coconut lumber sawdust to adsorb methylene blue dye. Ultraviolet–Visible Spectroscopy was used to determine the amount of methylene blue adsorbed, and the specific uptake and sorption percentage was calculated. The results showed that the dosage of 0.1g is the most effective in terms of specific uptake and sorption percentage, which indicates that coconut lumber sawdust is a potential adsorbent of methylene blue dye.

**KeyWords:** Adsorption; Sawdust; Methylene Blue Dye; Coconut Lumber

## **POSTER PRESENTATION**

---

# **Socio-Economic and Political Landscape (SPL)**



## Deconstructing the Concept of Home: The Case of Sitio San Roque, Quezon City Residents

Marielle M. Calicdan<sup>1</sup>, Joseff Vincent S. Gomez<sup>1</sup>, Noralyn E. Mamalangkay<sup>1</sup>,  
and Aidrielle Joie M. Raymundo<sup>1</sup>  
Ms. Annabelle B. Bonje<sup>2</sup>, Research Adviser

<sup>1</sup>*De La Salle University Integrated School (Manila)*

<sup>2</sup>*Behavioral Science Department, College of Liberal Arts, De La Salle University-Manila*

**Abstract:** Home as an “embodied space” is a location where human experience and consciousness take on material and spatial form, while “home” as “place identity” is a place that is encapsulated with a set of feelings. This paper argues that the concept of “home” should be understood from multiple avenues - from a political space where contestations and negotiations happen. It is also important to explore how one’s identity is tied and detrimental to the concept of home. Moreover, this paper zoomed into the Sitio San Roque residents’ perception of “home” whose houses are under the constant threat of demolition. The study engaged in the tradition of ethnographic research through conducting in-depth interviews, key informant interviews, and field note-taking. Additionally, this paper utilized photography to capture tangible representations of the spaces the residents have had embodied. Results demonstrate that abstract concepts such as emotional attachments, sense of purpose, and the memories that the participants associated with the place; as well as the economic opportunities; the residents’ length of stay; and the organizations the residents belong to significantly affect their willingness to stay in Sitio San Roque. This manifests how residents embody and identify with the literal place by giving them personal and abstract meaning based on the different day-to-day experiences they perform in it. Moreover, this also redefines Sitio San Roque as an abstract safe space, and not just simply a literal space that can be left and replaced by the people who consider it as their home.

**Key words:** place identity; embodied space; home; informal settlers; Philippines

# **Business Concept Bazaar**

## Base

Luis Miguel G. Adriano, Robert Angelo C. Antonio,  
Bernd Adrian S. Consigna, Lance Jefferson T. Dimaano,  
Marcus Klarenz D. Lucas, and Kyro Emilio A. Morales  
Dr. Pablo S. Dejan, Adviser

*De La Salle University Integrated School (Laguna)*

**Base** was founded by Mr. Kyro Morales. The business was first established in July 2019. Base started with an initial capital of P25,000 that would be allocated to the production, advertisement, and packaging of the final product. Base consists of six members. Kyro Morales as the Owner, Bernd Consigna as the Financial Manager, Robert Antonio as the Financial Auditor, Lance Dimaano as the human Resource Manager, and Marcus Lucas as the Operations Manager. Base's research adviser is Dr. Pablo Dejan. Base is a sock business that utilizes socks as its platform in order to raise awareness and spread advocacies. Socks are frequently overlooked. This gave the founders an idea on what could set them apart from other businesses since it would have no direct competitors inside the campus. They took this as an opportunity in the market. A sock brand would have fewer competitors as compared to other clothing pieces. Ever since its launch, Base has released a vast selection of socks which varies in style and design. Base does not plan on stopping there as they still plan on releasing new designs. Base's prices varies on the sock variant. The cheapest price would be P150 and the most expensive would be P300. Base offers socks to the market at an affordable price point. This would give an advantage to the business because compared to other sock manufacturers, Base provides good quality socks at an affordable price.

# BASE



## Bewear

Cazzandra Rose S. Alcantara, Trisha Jeriss M. Basaca,  
Keana Mae M. Catindig, Angelo M. Palis, Anne Maeve L. Parungao,  
and Xam Adriene D. Tolentino  
Marife M. Magsino, Adviser

*De La Salle University Integrated School (Laguna)*

**BEWEAR** is an organization that aims to spread awareness of endangered animals through selling various wearable products — neck pillows designed with endangered animals being the flagship product priced at P499 each and headwear: baseball caps, visors, and bucket hats with endangered animals patch designs priced at P220 to P230, both of which offers comfort, convenience and unique designs. The target markets are both males and females who are 16 years old and above that are within the DLSU Laguna Campus, but with the use of blue-ocean strategy, it is marketed to anyone who is willing and capable of buying the products. With the use of direct channels through bazaars, delivery of pre-orders, and digital platforms through social media pages such as Facebook and Instagram as an advertising and pre-ordering platforms that establishes both personal assistance and transactional relationship, the revenue stream will be coming from the products' sales offered which are purchased mostly by parents and adults, because these groups are already financially stable and therefore capable of buying products in this amount. The business operates by producing inventories which are produced by the main supplier and assisted by a backup supplier in case of emergency; cash and equipment which is then used in key activities such as research, conceptualization of marketing plan, production, and selling. Each researcher contributed Five Thousand pesos (P5,000) which equaled to Thirty Thousand pesos (P30,000) as the owner's capital and used the P20,177 for the first production. Currently, the ROI is 310.50%.

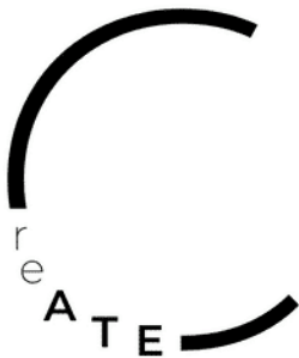


## Create

Nicole Gabriele V. Cote, John Kenneth T. Dacuscus,  
Alliyah Francesca C. Herce, Ki Won Lee, Gianina Beatrice V. Quezada,  
Kyra Nicole Ann C. Valdez and Xam Adriene D. Tolentino  
Emmielyn Andrea C. Bardiano, Adviser

*De La Salle University Integrated School (Laguna)*

**CreATE** is a sole proprietorship owned by Gianina Quezada which ventures in sustainability and functionality. The flagship product, Carter, is a multifunctional lunch bag with water resistant fabric, removable insulator, detachable straps, and compartments. Products alongside Carter include collapsible silicone cups and utensils. The products that the group will be selling to the market will be processed in Infinitees, Baby's Dress Shop and Print Hero in San Pedro, Laguna. Combio's store and Infinitees are owned by one of the members of CreATE In addition, the packaging of the products are ethically sourced and durable eco-bags than can be recycled through time. The researchers sold their products through joining bazaars namely ABM bazaar, Sci-math bazaar, Animo bazaar, Family Day, and Art Mart Bazaar in BGC. In addition, they sold their products on different social media platforms. CreATE invested 30,000 pesos for the production and marketing of the business. For their ROI, they came up with 82.67% knowing their net profit is 24,803 pesos as of now. CreATE claims the business is profitable because of the ROI. CreATE plans to expand their products that are both sustainable and convenient. This includes foldable silicone bento boxes, other materials of utensils, and better designs of the lunch bag. Collaboration with other eco-friendly businesses is also considered so the business owners can expand their network and make their products known to their market.



## Echo PH

Joackim Pether R. Agno, Rommel Anderson M. Bundac,  
Justine S. Dela Cuesta, William Geoffrey T. Lindog,  
Kenneth Allen I. Marasigan and Cedrix Joseph N. Topacio  
Generie M. Manuel, Adviser

*De La Salle University Integrated School (Laguna)*

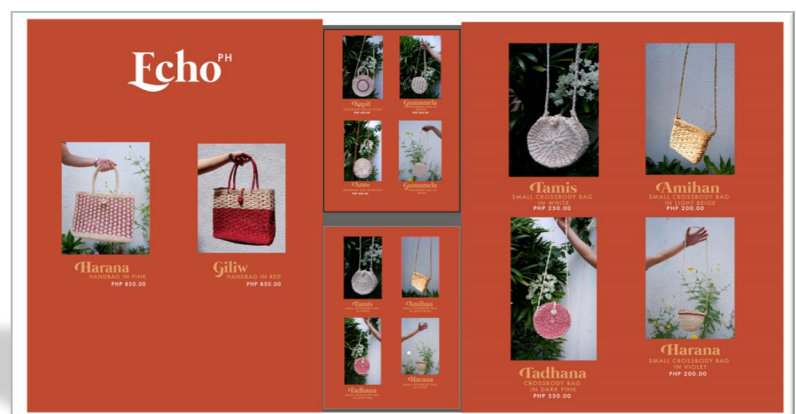
The usage of fibers in bag-making is commonplace, with canvas, nylon, denim, and others being utilized. Abaca is a common fiber in the Philippines, and is very durable and versatile. The usage of abaca is also beneficial for the environment, as it uses less chemicals in its processing.

This study was aimed at creating awareness on the impact of using reusable and biodegradable products for environmental protection, and was focused on selling woven carry-on luggage to the target market. It also revolved around whether these had a positive impact on the customers. The business sold the products in Research Locale, but began expanding operations eventually.

The members supplied the capital needed to start the business. It also needed the supplier of the desired products, who provided said merchandise and shipped them to the business headquarters to be sold by Echo PH. This group used marketing tools such as posters, social media pages, and the packaging to attract customers and promote the brand identity.

**Echo PH** aimed to create general awareness on the impact of the use of nonrenewable and non-reusable products by the use of Echo PH's woven bags, while continuing product innovation and raising employee standards.

While Echo PH did not meet its sales quota in the first few months, it was able to make up by introducing new products and changing suppliers. It now stays firmly in a profit position, and is ready to face any challenges.



## Free Flow, Hygiene Co.

Hector Manuel A. Aquino, Rafael M. Reyes, Luke L. Serrano  
and Andrew Lorenzo Jose E. Tamayo  
Generie M. Manuel, Adviser

*De La Salle University Integrated School (Laguna)*

In the first half of June 2019, Free Flow was formed. Organized by its owner Hector Manuel Aquino with Php 30,000.00 as the starting capital, the business started to purchase all necessary items needed to start its operation.

**Free Flow, Hygiene Co.** is a business venture that targets making proper toilet hygiene practices more prevalent by offering a hygiene kit that possesses the necessary supplies in order to practice proper toilet hygiene. In relation, their products can be utilized by all demographics. The products they offer are necessities for the practice of proper toilet hygiene, which the managers wish to make prevalent.

Free Flow has participated in four trade shows in order to create an identity for the brand, as well as to secure and boost sales of the venture. Furthermore, the business utilized social media platforms such as Facebook and Instagram to create an online following for the business. The management team focused on securing bulk orders, which they succeeded in receiving. As a result, the business has been able to profit from its operations.

As of January 2020, gross sales of the business have mounted up to over Php 78,000.00. Using the funds earned from operations, Free Flow intends to give back and help the people in the community it is present in. The managers believe in the effect of the triple-bottom line concept. Furthermore, they wish to set an example to other businesses of the importance of giving back to the community.





## Kawayan Kompany

Aldrich Luigi H. Bautista, Michael Benedict P. Candado,  
Isaiah M. Feliciano, Kyle Gabriel T. Lim and Ken Martin A. Molano  
Nerisse G. Estrada, Adviser

*De La Salle University Integrated School (Laguna)*

Environmental issues concern the world extensively, even prompting the U.N. to include it in the 2030 SDGs. **Kawayan Kompany** partakes in this endeavor by providing quality, reusable, and eco-friendly bamboo products to customers in all market segments. Kitchenware, fundamental in homes, is used worldwide through different manners. The business offers these creative and practical kitchenware products at competitive prices in the industry consequently meeting customer demand in the local market. Kawayan Kompany's advertising is efficient and cost-reductive, with an approach that is able to target a range of customers using social media platforms, attracting them and cultivating a relationship of quality value proposition. It effectively executes processes through its management structure, a sole proprietorship, comprised of the owner and other managers. It distributes functions to the different organizational departments, while preserving interaction among them. Since it is a merchandising business, equipment is limited and the related costs are averted. Kawayan Kompany maintains a good relationship with all members of its supply chain. These business suppliers provide Kawayan Kompany with raw products that are, then, customized to provide aesthetic appeal. The business is expected to expand in the future with other varieties of eco-friendly bamboo products such as lunchboxes, cups, and straws. Kawayan Kompany stays profitable and surpasses its financial plans. It has acquired a gross revenue of Php 59,000.00 within the DLSU - Laguna Campus alone. Its expansion into other markets, in the nearby business parks, offers the business a great position for more revenue streams.





## Miles Studios

Alyssa Hayu K. De los Reyes, Andre-Lloyd C. Dolera, Nena Pauline L. Quiazon,  
Luiz Miguel Enrique L. Santos and Noah S. Sembrano,  
Dr. Pablo S. Dejan, Adviser

*De La Salle University Integrated School (Laguna)*

**Miles Studios**, started in January 2019 in De La Salle Integrated School - Laguna Campus, is a start-up business venture developed by ABM students. The enterprise sells athletic shorts that are competitively designed, in demand, and priced student-budget friendly, acknowledging the student athlete dilemma that can be observed in the target market which is the unavailability of cheap substitutes to accessible sportswear brands. The Trainer Shorts and the Biker Shorts are the two main products that are offered. Through Digital Marketing, promotions and marketing collaterals were sent to the target market. Miles Studios joined a total of four bazaars within four months. Business members had equally contributed to the initial capital of Php30,000 which was used to produce 83 units for the first mass production. With the use of the break-even analysis, the company will obtain its return of investment on the eighth week of the selling period. Comparing this to the actual sales, Miles Studios had already met its break-even point during the first week of the selling period. The company's actual sales exceeded the projected sales to at least 50% on a monthly basis from October to January 2020. The business is a sole proprietorship under the ownership of Noah Sembrano, Luiz Santos as the Operations Manager, Alyssa De los Reyes as the Financial Manager, Nena Quiazon as the Marketing Manager, and Andre Dolera as the Human Resource Manager respectively. The business owner along with the four managers equally own 20% of the company.

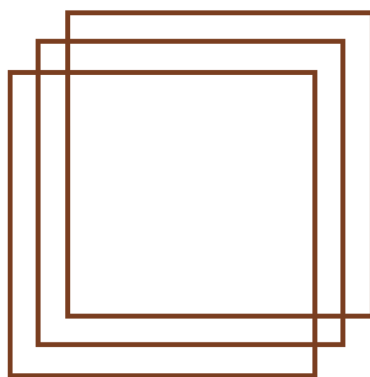


## Porto

Jerome G. Altea, John Eliel C. Baladjay, Timothy Andre F. De Castro,  
Emilio Aldren De Leon, Elijah Jerome P. Martires  
and Carlo Rafael S. Patawaran  
Emmielyn Andrea C. Bardiano, Adviser

*De La Salle University Integrated School (Laguna)*

Wallets are typically associated with the word expensive. Knowing this, the concept behind **Porto** is to be able to provide quality-made wallets as well as other leather products to the consumers at a reasonable price. Porto also aims to market and effectively support the Philippine leather industry. Porto sources its products locally from Marikina. Porto utilizes efficient marketing techniques such as the usage of social media and distribution channels online. In addition, Porto operates in a sole-proprietorship form of business. During the span of the business, Porto was also part of giving back to the community through outreach programs and volunteer work that has helped the specified beneficiaries. Porto also relies heavily on research to succeed in business operations. The products that Porto releases are successful because Porto conducted a survey and focus group discussions first to ensure that the products are what our customers want to buy such as the compact wallet. Porto has officially started its operations during the October of 2019 and continues indefinitely as business permits to do so. For the financials, Porto initially required a total of Php 30,000. As of February 12, 2020, Porto has already garnered a total of Php 93, 728 in sales with an ROI of 97.54 percent. This proves that the business is profitable and effective and is feasible in the long run. With necessary permits, Porto will expand and diversify to other products as well.



**PORTO**

EST. 2019



## Sophistiquée

Daelan Zea Cassey S. Ancheta, Cuen S. Habulin,  
Dhareen Maurenne L. Masangkay, Nikki Ella A. Platero,  
Kaela Dianne B. Ramos, Ellis Brette R. Tuy  
Winnie L. Odoño, Adviser

*De La Salle University Integrated School (Laguna)*

**Sophistiquée** was formed to put into practice what students have learned in their strand, ABM. Its main goal is to develop ABM students' skills in the field of business. The final conceptualization of the business was made last February 2019, by then the business was still named Kalopsia Jewelries that means to make things more beautiful. Eventually it was changed to Sophistiquée since the researchers were unaware that Kalopsia Jewelries was already taken by another jewelry business. The new brand name Sophistiquée means that it aims to be the reason behind everyone's sophistication with the help of the products they offer. To market the product, the business will use social media platforms as well as direct selling. The key management of the business thought of what innovation they could make in present time that will showcase creativity and beauty which is rarely seen on public market. The company will be offering necklaces, earrings, and phone cases made out of resin. The desired outcome of the company is to gain profit and to be known for their innovative and unique products, but at the same time to help a certain community in need, the Ang Bahay Parola – Peace Home for Girls. The business will be doing their best to produce quality products that will be a hit in the market. The business will overcome many risks and challenges through teamwork and leadership keeping in mind the principles learned in Marketing, Economics, and Business Ethics.

**SOPHISTIQUEE**  
BEHIND SOPHISTICATION



## Stoics

Katrina A. Deflino, Jacob A. Faeldon, Kent P. Lopez,  
and Brent N. Sola  
Nerisse G. Estrada, Adviser

*De La Salle University Integrated School (Laguna)*

**Stoics** is an apparel that was officially launched in October 2019 focused on making streetwear styled clothing. The business initially began its first product line with hoodies with a total of six variations. The product is produced from various suppliers of hoodies, printing, and labeling to manufacture the final product. From there on, the business began its marketing through different social media platforms mainly Facebook and Instagram starting its preselling stage before October. Throughout the business's existence, the business has attended a total of four bazaars which includes the ABM Bazaar, Sci-math Bazaar, DLSU Christmas Bazaar, and Family Day. Recently, the business also launched its product diversification with its t-shirt product line consisting of two designs. The business started off with a capital of Php 26,215 to produce the first batch of hoodies in September. Stoics now has Php 52,455 in gross sales with a 59% ROI. The team is now currently trying to sell the remaining inventory to increase its net income. Finally, Stoics' future plans include its vision for its next product line and as well as future venues the business will be selling at. The business plans to create other apparel such as jackets and bucket hats as well as attend conventions and bazaars in the future.




## Vayv

Lorenzo Morris H. Alfonso, Johanna Therese V. Almendrala,  
Sophia Lara R. Durana, Jonna Mae R. Macaraig,  
Isabella Beatrice V. Recidoro and Jhoanna Marie P. Suerte  
Nerisse G. Estrada, Adviser

*De La Salle University Integrated School (Laguna)*

**Vayv** is one of the leading business ventures inside the university that aims to provide affordable and convenient solutions to single-use plastic pollution. Beatrice Recidoro is the registered owner of the sole proprietorship, with the help of Jonna Macaraig as the operations manager, Johanna Almendrala as the financial manager, Jhoanna Suerte as the marketing manager, Lorenzo Alfonso as the product manager, and Sophia Durana as the assistant financial manager. Vayv was conceptualised in January 2019, and began its operations in October of the same year.

Vayv's flagship product, Aquatote, is a 3-in-1 corduroy bag with a water-resistant lining. It is convertible to a backpack, sling bag, or tote bag, as it comes with two detachable cotton straps. Aquatote is a sustainable alternative to single-use plastic bags that has all its merits (convenient, water-resistant, etc.) without the drastic environmental impact. Vayv boasts a reusable canister packaging manufactured from eco-friendly materials that promotes recycling and good environmental practices.

Vayv had an initial investment of 30,000 pesos, and has utilised their capital to produce 735 bags. Currently, the business has approximately 220,000 pesos in sales, and an ROI of 191% which were generated through the six bazaars they joined throughout their operations. Their products are also available for purchase online via various social media platforms. Vayv has plans to venture outside of tote bags and produce other products in line with their advocacy





## ChickyTeens Co.

Franchette Romjin Kim T. Miller, Akiko A. Orui, Gilroy Aldric L. Sio,  
Angelica S. Te and Miles Patrice T. Villegas  
Patrick R. Hariramani, Adviser

*De La Salle University Integrated School (Manila)*

**ChickyTeens Co.** was established in the year 2019 due to the need to have a convenient snack-food to eat between classes. ChickyTeens Co.'s main product is the ChiChi, a shortened name for (Chi)cken (Chi) charon. The ChiChi is served in multiple flavors, specifically: BBQ, SourCream, Salted Egg, Cheese, and Plain. ChickyTeens Co is founded by four young entrepreneurs from De La Salle University Manila, namely: Romjin Miller as Chief Executive Officer, Akiko Orui as Chief Operations Officer, Angelica Te as Chief Marketing Officer, and Gilry Sio as Human Resources Manager. ChickyTeens Co is under the meat snack industry, where competitors like Lapid and R. Lapid dominate the area, who specialize in selling pork chicharon. The customers of the meat snack industry are usually looking for something to eat, something that could be small yet still satisfying, or they are buying it out of a craving. The target market of ChickyTeens Co. are the DLSU SHS students, and as for the secondary market, it involves the college students and the faculty and staff of De La Salle University. The company plans to have a stall during the Research Congress that would be held during the first day of the congress. As the pioneering food business in senior high school, they are honored to be presenters in this prestigious event.



## ISLA Partnership

Ana Gabrielle A. Azarcon, Raya Gabriele T. Azurin, Therese Anne V. Cheng,  
Audrey Hannah Y. Sy and Wynter Ingre W. Tua,  
Reynaldo A. Mones, Adviser

*De La Salle University Integrated School (Manila)*

**ISLA Partnership** is a start-up business established by five young female entrepreneurs who believe in comfortable beauty and beauty in comfort. With its vision to become the lifestyle trend, the brand incorporates beauty and sustainability in its image, services, and products.

In November 2019, ISLA (pronounced as ahy-la) launched its personal care product line called ISLA Body Soaps. The brand debuted three soap variations: Malcapuya (Apple Stem Cell Soap), Cresta (Oatmeal Soap), and Palaui (Grapeseed Soap). ISLA's innovation is the SOAPreme Package which is a duo set of one body soap and one soap mesh. This product is a convergence of necessity and efficiency and sustainability. The soap mesh is particularly designed to be an aid in using a bar soap for maximum convenience and functionality.

As individuals become aware of the economic and environmental conditions around the globe, the target market has been more interested in socially responsible and value-laden work. They become willing to invest in products and ideas that aim to create a ripple of change in society. Fortunately, ISLA creates products that fit those interests. The soaps are artisan-made and the soap mesh are sewn by mothers who are employed by the Bless the Children Foundation in Tondo, Manila. These products were created sustainably and responsibly because ISLA believes that a better world begins in a better home.



## Lokal Loca

Mary Mikanel S. Gonzales and Cassandra Justine C. Go  
Jayme C. Ignacio, Adviser

*De La Salle University Integrated School (Manila)*

Weaving together culture and innovation, **Lokal Loca** is a business that not only highlights the crafts of its country of origin, the Philippines, but also supports the artisans of such crafts. This for-profit organization does so by donating a portion of the proceeds to these craftspeople in line with the company vision and mission. In the case of the company's TALA product, the T'boli tribe of Lake Sebu in South Cotabato will be receiving the benefactions from the company.

Lokal Loca's first and main product is a multifunctional phone case that can also store cash, cards, and small trinkets. This idea came to mind once the company founders realized the hassle of having to carry multiple items in one hand was an inconvenience common to other people as well. Aside from its multifunctionality, the design of the TALA case is a huge part of the product since it upholds and showcases the rich culture of the indigenous T'boli tribe of the Philippines through the usage of hand-woven Abaca fibers, the T'nalak cloth.

Overall, this business plan encompasses the drive and passion of the company founders, embarking on this business venture with the hopes of providing customers and beneficiaries a means to a better lifestyle.



**LOKAL**  
**LOca**



## Prata Manila

Althea Jill S. Abella, Rachell Angeli D. Almendral, Abigail Joy, T. Leoncio,  
Marlyssa Angelika, L. Pascual and Danielle Marie P. Quintos  
Patrick R. Hariramani, Adviser

*De La Salle University Integrated School (Manila)*

**Prata MNL** started as a small business idea from five senior high school students of De La Salle University. It is a company that aims to sell T-shirts that have ocean related prints such as quotes and images. The team will primarily sell T-shirts to senior high school students of DLSU, though they will also offer online selling and delivery at the start of operations for customers outside of DLSU. At the start of operations they will donate a portion of the sales to the “Play and Dive” an environmental conservation company that sets up a coastal cleanup drive regularly with the help of volunteers and donations. The owners of Prata MNL want their company to be known as a company that sells T-shirts and a company that does something to contribute to the betterment of our environment.



## Reforma

Mika Ivan D. Agaton, Jameson C. Bactat, Jewelle Dayne Y. De Castro,  
John Louie L. Payuyo and Jean Lenard M. Rosete  
Ma. Theresa C. Gerial, Adviser

*De La Salle University Integrated School (Manila)*

Now that consumer behaviour is shifting towards healthier and sustainable options as they become more aware of the impact that their buying decisions have (Euromonitor, 2019), it is vital for businesses to introduce products that cater to the needs and wants of these individuals. Alt Co., with its newly inspired brand “Reforma,” is a start-up enterprise that aims on becoming the leading, preferred provider of green, high quality, fashionable, trendy tote bags, while creating strong customer relationships, and partnering with local like-minded organizations. With its corporate social responsibility, Reforma raises awareness about important environmental issues through their unique designs and remodels how people see fashion by using a less harmful alternative fabric as the main input for their bags. This is what sets it apart from its competitors.

The company’s target market is composed of students in De La Salle University (DLSU) and people from nearby educational institutions and communities. For this reason, De La Salle University is its main base of operations. The company utilizes social media platforms like Facebook and Instagram for both marketing and selling as these are the most efficient and effective way to reach its customers.

**Reforma** also relies on word-of-mouth marketing from the good reviews of its consumers. With low start-up costs and minimal expenses, the company is expected to grow 10 times within the next five years. This corporation was recently established in October 2019 at DLSU - Manila Campus and composed of five aspiring entrepreneurs, spearheaded by its Chief Executive Officer Jameson Bactat.

reforma

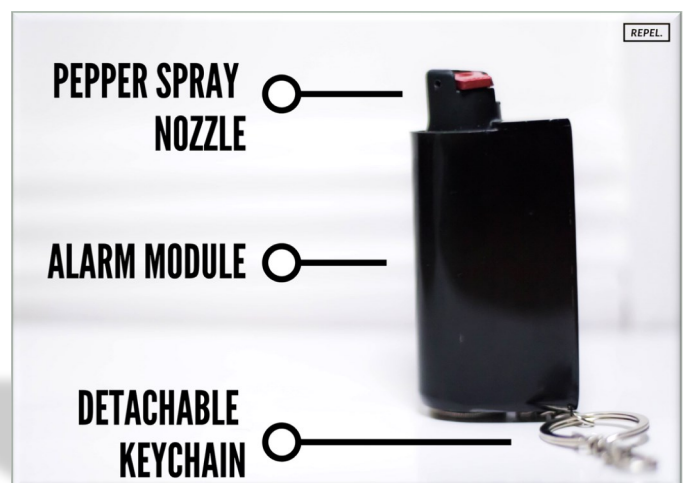


## REPEL.

Celine Novia P. Bartolome, Sebastian Renato V. Monfort,  
Ainon Jarya A. Panda and Romesh Evanne R. Portugal  
Ma. Theresa C. Gerial, Adviser

*De La Salle University Integrated School (Manila)*

The main goal of a company is to be profitable and sustainable while upholding a certain social responsibility to the environment and community it is a part of. There were various challenges, steps, and observations beforehand to ensure that our company will have the best chance of achieving its goals. The best way to create a product is to think of what the community will need. We, at REPEL., believe that safety is one of the most important human right; that no man, woman, or child of any religion should be excluded from having this. We made a product that is a 2-in-1 device that holds an alarm and pepper spray the two most common yet effective devices against perpetrators. Our company wants to give the community a fighting chance and give them something that they can fight back with. Through this product we hope we can empower human safety and spread our advocacy towards it. Considering that the Philippines is the 11th most dangerous country in the world, our team came up with the idea to produce a cheap and high quality safety device to enter the market. We knew that each individual would have a certain role and choosing those roles were done by identifying their strengths in order to use to the greatest of their capabilities. Other factors are to be monitored like the political, economical, socio-cultural, technological, legal, and environmental factors; all of these have a part to play whether they are threats or business opportunities. Identifying your market is one of the essential steps in starting up a business and a market analysis of the industry you are in will reveal current trends and tell whether or not if the market is profitable and sustainable for a start-up business.



## Rêverie Inc.

Moises Antonio A. Castro, Patricia Hypatia R. de Leon,  
Mina Jezerie M. Madarang, Angelique C. Mallari,  
Janica Megan T. Reyes and Rochelle M. Rodrigueza  
Ma. Theresa C. Gerial, Adviser

*De La Salle University Integrated School (Manila)*

**Rêverie Inc.** is a business that aims to provide comfort and convenience to students and office workers, readers and non-readers alike, by producing and offering a multifunctional file case, FoldAFile. The file case is convertible to a stand that can be used for books, tablets, and documents. Through this, the consumers can utilize both the file case and the stand at the same time. FoldAFile is designed to cater to people who love to read on-the-go or people who always bring files around. In addition to this, FoldAFile may also be beneficial to people suffering from neck and back pains as it may help prevent their condition from worsening. The primary target market for this product is the senior high school students of De La Salle University-Manila whose ages range from 15 to 19 years old. The secondary target market is college students, faculty, and staff of DLSU-Manila.

The founders of Rêverie Inc. considered the need of students for an organizer for their files. Based on observation, there are a number of students who bring and read their books within the campus. In addition to this, the product is specifically designed for people who prefer to bring just the things they need, as little as possible, while still maintaining organization. Having a multifunctional, convenient, and portable file case that promotes comfort can now attract buyers to be practical and have the comfort they desire.





## S.Corps

Jay Antoinette D. Baculi, Sophia Marie C. Deverala,  
Reila T. Diongzon and Marcia Micah A. Tuazon  
Patrick R. Hariramani, Adviser

*De La Salle University Integrated School (Manila)*

The desire to meet consumer needs aligned with the fashion trend at present led to the formation of a company named **S.Corps** in the year 2019. S.Corps is a small retail business operating under the bag industry and is offering a 2-in-1 tote bag-organizer to the market. The business is formed by five skilled and experienced senior high school students of De La Salle University-Integrated School (Manila). These experiences they had and the skills they possess led them to the position they are currently holding in the company.

Having the female students of De La Salle University-Manila as its target market, the business opted to design a tote bag that would fit their preferences, this of which was thoroughly researched by the owners of the company through conducting various surveys and focus group discussions.

To cover the start-up costs, the company owners have decided to put up an initial investment of PHP 15,000.00 each, totaling to PHP 75,000.00. Funding solely came from the investments of the owners.

This business plan, where research regarding the company's industry and studies of the various aspects of the company may be found, is written to help and guide the owners through their first few years of operations. The owners understand that this is of much importance in the future and success of the company.

S.CORPS  
EST. 2019



## PARAYĀN HANDICRAFTS

Kim Matthew S. Arizapa, Neil Sheldon E. Loreto, Margaret Therese A. Lozada,  
Juris Yancie S. Macasinag, Javina Lianel Z. Real,  
Angela A. Serrano  
and Catherine Ll. Sus  
Gloriah Mariah T. Labayo, Adviser

ST. AGNES ACADEMY

The rice straw is known as one of the top agricultural wastes in the Philippines. According to the Philippine Rice Research Institute (PhilRice), the country produces 15.2 million tons of rice that leave behind 11.3 million barrels of rice straw a year. The farmers usually burn the bundles of straw gathered after harvest. Hence, burning the waste in an open field contributes to the increase of air pollutants such as nitrogen oxide, sulfur dioxide, and carbon monoxide.

Instead of burning the bundles of straw, the proponents thought of a business that will respond to mainly four things, the addressing of environmental concerns, the demand of the customers, the showcase of local Filipino products, and all at the same time, providing employment for local partner communities.

The proponents thought of producing local handmade products such as bags, footwear, and storage baskets. Alongside, various agricultural wastes and native Bicolano products will also be incorporated. This is with the help of the partnered communities by doing fence or matte weaved rice straws and be assembled and finished by the head of design. The product line would be classified according to various collections — The Tribal Collection, The Vintage Collection, The Pride Collection, and The Minimalist Collection. In addition, the standard price of each product would depend on what type of product it is. The storage boxes, which are 12 inches by 12 inches in length and width, would be sold for Php 250.00. Handwoven bags, with various designs would be sold for Php 277.00. Lastly, the footwear, would be sold for Php 221.00.

The Total Project Cost of the brand, Parayan, is Php 314,289.58. While, the Return on Investment is 139.36%. For the Cash Payback Period, it would be 0.72, or 8 months and 19 days. Finally, the Return on Sales which is, 38.94%.



# **Art Performances and Exhibitions**

# **Art Performances and Exhibitions**

---

## **Creative Writing (CW)**



## Kismet

Montierro, Kevin Joseph Blair A.

*University of Perpetual Help System - DALTA*

**Concept Paper:** Kismet depicts a story about two best friends that happen to stumble upon an androgynous boy who will prove to them that love really has no fixed barrier. The only question they will have to answer is if it's kismet or mere coincidence that brought them all together.

The main objective of this creative work is to enlighten people that love will always be love as long as it serves a purpose in life. Anyone can be oppressed based on their gender preference no matter the social status. This work also goes to show the ongoing fight and cry for gender equality, and how homosexuality still isn't fully accepted by society especially here in the Philippines.

During the pre-writing of this story, I've had my fair share of doubts and second thoughts because even though homosexuality is a contemporary topic that has been widely discussed all over the world, we still can't change the fact that some people will tend to view this work as unconventional and taboo. By saying so, it has ignited a fire in my heart that urged me to tell this story simply because it needs to be told. And I would not settle for it to be one of the many things that I chose to keep to myself just to conform to society's standards. Pocholo, RJ, and Red's story deserves to be told.

## Warm Funerals

Fernando, Sharmaine Ysabel A.

*University of Perpetual Help System - DALTA*

**Concept Paper:** The informal essay I wrote mainly revolves around the idea of death and how it highlights life and the human experience. Bringing “negative” concept such as death into discussion highlights the importance of its opposite which is life. Reminding ourselves that there is a deadline lets us re-evaluate what we’re doing with the time we’re given. Currently, depression and suicidal tendencies are common among people and jokes and memes about wanting to die are of greater volume than I personally thought they were. Although I understand that they’re supposed to be taken lightly, I also believe that some jokes are half-meant, and humor is their subtle way of asking for help. I think it also important to discuss about accepting the death of a loved one and see death not as a “negative” concept but a part of the human experience. Grief is a heavy burden to bear, and the death of someone important or pondering over the death on oneself is an example of it. I think there are too many people that lose hope or passion which are of extreme importance in being alive and being human. As one of the lucky people who have not lost hope or passion but have also experienced enough grief to empathize, I want to help those who are suffering to find a reason to truly live. In the process of writing the essay, I also aim to find answers myself, as to what a good life is and how to live a good life to make sure that when my time comes, I’d be satisfied with what I had done with the time I was given. To summarize: I wrote an essay about death to find answers about life and to help those who read it with what I have discovered and realized.

## Perhaps, Love

Granada, Althea Beatrice S.

*University of Perpetual Help System - DALTA*

**Concept Paper:** I wrote this collection, Perhaps, Love to show and make the readers feel the beauty of young, innocent love. I want my poetry to be lighthearted and just depict the bright side of being in love. The collection consists of 5 poems, each with different structure, but is centered with the concept of young love. The theme I used may seem cliché, but I find writing about with this concept in mind very relaxing. Love is something that writers often use as a theme for poetry, and writing with it wouldn't be as easy, since there had been a lot of love poetry written already, but, I still went for it. It was intended to be cheesy, cute, and sweet so that readers would have a different view on love poetry. I wanted it to be youthful. Something that would make the reader remember his/her younger years of being in love.

Love poetry had always been a favorite of mine. It had always been my plan to use it as a theme. I didn't have second thoughts about that, which made it easier for me to organize my ideas. Most of these I didn't write sitting down, concentrating. I was travelling, doing chores, etc., when I thought of these, and I think it made it more natural, since even in the simplest things I do, love is still present, it is there.

## Every Day and Every Month

Zamudio, Nicole C.  
Christian Gopez, Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** “Every Day and Every Month” reflects the beauty of nature and the beauty of seasons. It portrays the scenery during the day and night and the four seasons namely, spring, summer, fall, and winter. This collection of poems is inspired by photos online or taken by the writer; thus, a vivid imagination will be formed in the reader’s mind through the lens of poetry. The writing styles such as the typography was adapted to e.e. cummings and the structure and forms of the poems are free verse, haiku, and Shakespearean sonnet. It is composed of Filipino, English, and Baybayin letters. Those literary pieces were conceptualized, organized, and evaluated to ensure its effectiveness. It talks about the cycle of leaving and returning; however, it was created to bring hope that soothes the soul of the readers. It shows the possibilities of the future and lets the readers to forget the past of being left behind, but rather choose to move forward.

**Key Words:** beauty; nature; seasons; leaving; returning; hope

## Mga Krayola Ni Diego (Diego's Crayons)

Molina, Lorenzo Miguel R.  
Leo Vicentino, Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** Family acts an essential part in one's life. In this one-act play, the artist portrays Filipino values in a certain family specifically, a family of crayons. With this, the artist main objective is to present a story inspired by the realities of life in a creative setting and create a story that incorporates dance. Aside from the artist's experience as an inspiration, this story was inspired on a comedy Filipino film which is "Ang Tanging Ina" by Wenn Deramas. Further, the artist creation process is done by (1) practicing three-dimensional characters, (2) balancing both plot-oriented and character-oriented characteristics, (3) having an in-depth usage of symbols and objects, and (4) understanding different sides of the story. Mga Krayola ni Diego" (Diego's Crayons) is a one-act play in which a family of crayons face different issues surrounding their family as they prepare through a dance presentation for their owner who has Protanopia Color Blindness in his art exhibit.

**Key Words:** family; one-act play; crayons

## RETIREMENT: A One Act Play

Salamanca, Marie Antoinette Johanna M.  
Jaimee Ann Esteban, Adviser

*De La Salle University Integrated School (Manila)*

**Abstract:** Company loyalty strengthens a business' capacity to produce quality work and growth. With this, however, comes aging and leaving one's post at the average age of 60. Retirement is a one-act play depicting a company's Chief Executive Officer's attachment to one of his longtime employees and the struggle of replacing her with a new and less-seasoned worker that could not compare with her accumulated knowledge and expertise. The author's stimulus for the play is the rising number of senior citizens in the Philippines who remain to be working despite their old age and the lack of attention being given to those who are forced to work in exchange of pay despite their senility. The writer gathered data through a qualitative research interview from long-time employees of their respective companies who are nearing the age of retirement. The script's main objectives are to raise awareness on the working elderly in the country, motivate the infirmed to continue their daily tasks, and sensitize the public - especially the younger audience - of the senior citizen's ordeals.

**Key Words:** Senior citizens; job employment; company loyalty; new employee

# **Art Performances and Exhibitions**

---

## **Digital Arts (DA)**

## Chino Ka: Digitally-Illustrated T-shirt Brand Depicting Cultural Dissonance in Third-Generation Chinoys

Erin May B. Cochanco, Winnie F. Dy  
Jerilou Marie A. Buted, Arts Advise

*De La Salle University Integrated School (Manila)*

**Abstract:** The artwork tackles the cultural dissonance of Chinese Filipinos (“Chinoys”) which was inspired by the artists’ personal experiences. “Chino Ka” is a clothing brand that features T-shirts with digital illustrations depicting Chinoy cultural dissonance. The digital illustrations are segregated into sub-categories which segregate various encounters with cultural dissonance. The brand supports the illustrations with coherent designs on tags, business cards, and packaging. The brand, as a whole, aims to raise awareness of cultural dissonance amongst Chinoys, explore the medium of digital illustration and to use the graphic tees and branding merchandise as an avenue for connection. To understand the subject of the artwork deeper, a focus group discussion was conducted among third-generation Chinoy students of De La Salle University. The findings reflected an inner conflict of being uncertain of one’s ethnicity, as well as a comparative discussion on similar and conflicting influences from Chinese and Filipino cultures. The research process and data contributed to inspiration for the artwork’s content. The digital illustrations collectively show a visual combination of elements representing both Chinese and Filipino cultures in their different aspects, which communicates the experience of cultural dissonance. The isometric design symbolizes two cultural facets, while the colors are based on the Filipino-Chinese Friendship Arch located in Binondo, Manila. The medium, graphic tees, conveys a positive message regarding the duality of Chinoys by showing them how they can navigate through this experience.

**Key Words:** Chinoy ; cultural dissonance; cultural branding; graphic tees; digital illustration



## **Yiban: Dealing with Two Cultural Identities through Piyesta, a Comic Book Series**

Carla Reanna B. Velasco  
Miss Jerilou Marie A. Buted, Arts Adviser

*De La Salle University Integrated School (Manila)*

**Abstract:** The research paper is an examination of the Chinese diaspora in the Philippines through the observation of the Filipino-Chinese community. It tackles the problem of cultural ambiguity and dissonance that those who are of two nationalities experience. The research paper also discusses how one must make a choice between being only one culture or the other in the present society. The study seeks to discuss the mixture of Chinese and Filipino culture, as well as the differences and similarities between them. For the output, the study turned to interviewing Filipino-Chinese people in various contexts, namely: Chinese immigrants who came to the Philippines, children of Filipino-Chinese parents, and children whose parents are Chinese but were raised in the Philippines. This was done to accompany the research made regarding the Chinese diaspora for accuracy. The final output consists of four comic books, each connected to each other in one form or another.

**Key Words:** Chinoy; Filipino-Chinese; culture; Chinese diaspora; comic books

## **The Moon Keepers' Tale: A Hypernarrative Role-Playing game grounded on Mythology from the Ethnolinguistic Groups of the Philippines**

Francine Samantha Tubon  
Jheng Buted, Arts Adviser

*De La Salle University Integrated School (Manila)*

**Abstract:** This research deals with Philippine Mythology and the culture of Philippine's various ethnolinguistic groups and presents these topics through a hypernarrative role-playing game designed through pixelated art. This is to say that the game's storyline is heavily reliant on several Philippine myths and is merged with mystical elements in order to create a new fantasy world where not only humans roam but creatures such as the aswang , palasekan , sirena , moon eaters, and many more live as well. Hence, the research is done in hopes of providing a medium wherein the pre-colonized culture and history of the Philippines, and its mythology and folklore may be preserved and presented through a 21st century way whilst showcasing the capability and potential of the Philippine gaming industry. With these in mind, the data gathering is conducted through the usage of various reading materials such as theses, books, and media like video games. The subsequent findings were then rendered into the video game's three main characters who are influenced by the ethnolinguistic groups in Luzon, Visayas, and Mindanao, respectively. Overall, the researcher successfully the thesis and found that using gamified learning is indeed effective, especially for the intended demographic.

**Key Words:** Philippine Mythology; Ethnolinguistic groups; Pre-colonization; Role-Playing game; Pixel Art.

## Duù: A Study of Tboli Culture Through a Fantasy Video Game

Andrea Nicole D. Lugtu and Charlize J. Ong  
Mr. Ray Christian O. Cristobal, Arts Adviser

*De La Salle University Integrated School (Manila)*

**Abstract:** With the aim of strengthening the presence of Philippine culture in new media such as video games, this paper explores the potential of using Tboli culture as the basis of the themes and aesthetics of one. Surveys with members of the target demographic were conducted to test its potential and marketability. Those who work with video games, such as those assigned in developing or writing for video games were also interviewed to ensure a well-structured game. The success of the findings proves that the richness and diversity of just one of the archipelago's countless cultures can become a feasible and enticing plot for an interactive adventure. The study and its creative output hope to be an inspiration for those seeking to showcase the Philippines' culture in a Eurocentric market, as well as implore more Filipinos to express pride at their home country's extensive culture prior to the colonial periods.

**Key Words:** video game; Tboli; Philippine culture; digital art; game arts

## TAKAS: An Interactive Table-Top Game Exploring Identity through Filipino Folklore

Hannah Bien B. Lin and Marie Jolene D. Panopio  
Ray Christian O. Cristobal, Arts Adviser

*De La Salle University Integrated School (Manila)*

**Abstract:** The frailness of cultural identity has been something which the Philippines has been struggling with since its colonization. The artists were inspired by this issue and sought out ways in which they could challenge said issues of cultural identity. As the researchers have gone to later understand through the use of intensive research and analysis by international and local academes, Filipinos are not one specific culture, but rather a collective of diverse archetypes from different cultures as *Sikolohiyang Pilipino* would suggest. “TAKAS: A Narrative Tabletop Game”, aims to bring awareness on the significance of heritage on national and individual identities; bring forth the various causes and effects of the Filipino cultural identity issue; edify the youth with an alternative outlook on the topic of westernization; and to improve both critical thinking and inquiry skills through the uses of Filipino folklore—which has been a pivotal piece of channel for generational communication through the use of a tabletop game—a leisure activity which the artists were very familiar in, in terms of mechanics and aesthetics.

**Key Words:** *Sikolohiyang Pilipino*; Filipino Folklore; Interactive tabletop Game; Westernization; Cultural Identity

# **Art Performances and Exhibitions**

---

## **Design and Applied Arts (DAA)**

## **Alternate Sustainable Design for the Informal Settlers' Relocation Homes**

Myrrh Venus D. Milan  
Fernando R. Lacson, Jr

*De La Salle University Integrated School (Laguna)*

**Abstract:** In a recent study conducted by the Housing and Urban Development Coordinating Council (HUDCC), the proliferation of informal settlers in the country significantly increased from a number of 400,000 in the 1970's to as high as 2.5 million families as of today. In almost every part of the country especially in various cities, we can find informal settlers. The government is already taking action to resolve this concern by providing houses in resettlement areas; however, the constructed dwellings cannot really provide ease and convenience to the occupants. Yet despite these constraints, the occupying families still manages to survive. The artist aims to take part in addressing this social concern by creating an alternative interior and exterior design which applies the recent concepts and trends in architecture and interior design. The created design is an alteration to the built structure and the identified needs of the dwellers of a relocation area in the City of Binan, Laguna. The design aims to provide convenience and security to its occupants. Aside from the design, it will also feature the inclusion of space-saving furniture to maximize space to solve the problem of limited space. The artist believes that everyone is entitled to live in a house where he or she can relax, sleep, and can also give us means to lead productive lives.

**Key Words:** informal settlers; tiny house; modern architecture

## Flora de Filipinas

Micca Beatriz A. Amor  
Ms. Ellemay Kimberly Dumalaog

*De La Salle University Integrated School (Manila)*

**Abstract:** The artist's thesis production entitled, Flora de Filipinas is a showcase of the Philippine flora through casual wear. It will be designed with different flowers that commonly grow in the Philippines through hand painting the garments. The artist's inspiration in producing such output boils down to honing her skills as an aspiring designer by immersing herself into garment designing and conceptualizing whilst drawing inspiration from the country's culture. It aims to give a glimpse of the incredible plant lore that the Philippines uphold through hand painted designs. In order for the artist to gain more understanding on the work, reference materials about wearable art, Philippine flora, and the history of puffed sleeves were undertaken. The artist also undertook a survey to identify possible audience and to identify if the artist's fashion exhibit pique the interest of the Filipino youth. The final output will be a 4-piece collection through a fashion exhibition. Through this artwork, the artist yearns to spark a conversation for themselves and others and not merely aesthetics, drawing attention to the exhibition as a manifestation of nationalism and patriotism to honor the deep, colorful richness of the Philippine culture and community.

**Key Words:** Philippine flora; culture; garment design; casual wear; hand paint

## **Tiduk: Integration of Aeta Culture in Furniture Design and Its Application through Interior Design and Architecture**

Guia Antoinette Cruz and Jason Alen Charles Fabella  
Virginia Lacsamana, Arts Adviser

*De La Salle University Integrated School (Manila)*

**Abstract:** In response to a recent modern nationalist movement, wherein people are increasingly taking an interest in authentic and traditional Filipino cultures and national identity, this research study suggests an Art Café that by integrating Aeta culture into its design, may help contribute to the promulgation, cultivation, and innovation of Philippine Culture. Likewise, the study seeks to assist in creating a sense of Filipino identity within Architecture, as well as Industrial and Interior Design, to innovate, promote and preserve the Aeta culture through the said industries, as well as to provide a creative space that is both fully functional and aesthetically pleasing. However, while the research paid attention to the functionality of the Café's design, it did not concern itself with the technicality of systems such as electric, HVAC, plumbing, and others of the same nature. To assist in the production of the final designs, research was done regarding the specifics of Aeta culture and consultations were arranged with professionals from the different fields of interest. This was done to further solidify and evaluate the products throughout the research process, and to ensure that the design would be as precise and effective as it needed to be. Through this, the appropriate information and feedback needed to effectively design the art café were collected and put into consideration. The final output would eventually come to include the appropriate floor plans, exterior and interior perspective drawings, scale models, as well as the different sketches made in the process.

**Key Words:** Aeta; Architecture; Art Café; Culture; Interior Design



## Promotion of sustainable architecture that shows energy and water conservation through the use of scale model

Carl Matthew O. Dy Pen Ting  
Ms. Virginia Lacsamana

*De La Salle University Integrated School (Manila)*

**Abstract:** The artwork is a scale model of an original design by the artist that displays green architecture through the design using sintra board. The main design that demonstrates green architecture will be the type of building block (Timbercrete), natural light through the windows, and rain gutter. The artist aims to inform the viewers to acknowledge green architecture as an option for building structures in the Philippines. The artist was firstly inspired by the design of the nipa hut's ventilation system and secondly by the ventilation system of the Henry Sy building inside that De La Salle University Manila. The artist started from reading books related to the history of architecture to the design principles of architecture to green architecture.

## **Art Performances and Exhibitions**

---

### **Dance (DNC)**

## IMPERIUM

Yurela Natividad  
Mr. Justin Diolazo

*De La Salle University Integrated School (Laguna)*

**Abstract:** Power tends to corrupt; absolute power corrupts absolutely. In the 21st century, it seems as though the power given to the officials are repeatedly abused and misused that it has come to the point where the power the people have supposedly given these officials are now used against them. What's even worse is that even people who are not in a political position tend to abuse the social power they have gained or was given for the pursuit of their satisfaction. Individuals, or sometimes whole units, can be corrupt or carry out various forms of said abuse. This study will tackle different forms of the abuse of power in the lens of those being oppressed. The study aims to raise awareness regarding the abuse of power that happens within the state which has caused turmoil and the deterioration of many, and the state as a whole. It also aims to further induce the empathy of the audience regarding the victims of the said abuse by using their stories as our lens to understand the recurring issue deeper. The study will utilize a modern dance as its medium which aims to help the artist create a production that experiments with different modern dance techniques. The artist will also make use of props such as ash to symbolize power in the piece.

**Key Words:** Power; Abuse; Modern Dance

## TRANSfigure: A Voyage

Iverson D. de los Santos  
Mr. Justin Ray Diolazo

*De La Salle University Integrated School (Manila)*

**Abstract:** The study will present the journey of a transgender woman from a born biological male. The artwork aims to introduce the struggles of transgender women from early stages such as gender dysphoria and in the latter stages such as transphobia towards them. As well the other stages of their development such as self-discovery and transitioning. The piece will be contemporary. The dance will be divided into six parts each associated with colors through lighting. Each color represents the emotion or theme that each part showcases, in the end forming a rainbow to symbolize the LGBTQIA++ community. The research procedure done in developing the artwork involves gathering information from literatures and studies centered on SOGIE (sexual orientation, gender identity and expression), gender identity, transgenders, gender dysphoria and transphobia. Personal insights based on the experiences of the artist herself is also applied onto the artwork since she herself is a transgender woman. It promotes education and knowledge on sexual orientation, gender identity and expression in order to avoid disrespect and misidentification especially towards members of the LGBTQIA++ community. The choreography is geared towards equality for the rights of transgender people and as well as a sense of safety, empowerment and validation in society.

**Key Words:** Transgender; Gender Identity; LGBTQ++; Transphobia

## **Two Worlds A Production on The Real and Social Self based from George Herbert Mead's "The I and Me theory"**

Malanog Cyrene Djanna T.  
Mr. Justin Ray Diolazo

*De La Salle University Integrated School (Laguna)*

**Abstract:** This research will explore the Real Self and Social Self based on George Herbert Mead's "I and Me Theory". This study will talk about how individuals think, feel, and act about themselves. It will also talk about how other people perceive us. The study aims to show how social media norms can greatly affect an individual's image of themselves, to tell the audience we should embrace our social self and be true to ourselves online, and lastly to change people's perspective on how individuals should see, feel, or think about themselves. The "I and Me Theory" indicates that the "I" pertains to the response of an individual to others behavior. The "Me" talks about the organized set of traits an individual assumes. In line with this, the study will explore the variables that contribute to individuals having their "I" and "Me". The purpose of this study is to prove that there are numerous reasons as to why individuals create their social self-online. This study also seeks to tell its audience that we should accept ourselves as we are and that we don't need the validation from others in order to love ourselves. The production of this study will have a non-narrative approach, showcasing a combination of street dance and modern dance. This production will be presented with the use of songs that speaks the message of loving yourself or being you, with movements that relate to the theme of the songs.

**Key Words:** modern dance; street dance; I and Me Theory

# **Art Performances and Exhibitions**

---

## **Film (FLM)**

## **Spoon! (Filipino Superstitions and Beliefs Among Youth)**

Blue Gavin Stuart, Bianca Rafaelle Manlangit , Benj Perez'  
Krishna Cabanting , Myrrh Venus Milan , Jan Enrico Benito  
and Dana Marie Mandal, Artists  
Reinette R. Natividad, Arts Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** “Spoon!” is a short feature film created by a group of young filmmakers who aim to showcase undying Filipino culture, to integrate elements of filmmaking, and to serve as an indication that the Filipino culture is still relevant among the youth today. The film is about a guy who does not believe in the superstitious concept of destiny finds a spoon that leads him to believe otherwise.

**Key Words:** superstitious beliefs, Filipino, destiny, spoon

## **Bronze, Silver, Gold, at Anting-anting**

Paolo Miguel N. Hildawa and Angelique L. Veridiano  
Ms. Candice Perez

*De La Salle University Integrated School (Manila)*

**Abstract:** Bronze, Silver, Gold, at Anting-anting is a Jury Prize winning student short film submitted to the 2019 Metro Manila Film Festival. The story revolves around Miguel, a grade school contestant participating in his school's quiz bee but is experiencing bullying from his peers due to losing the first day of the competition and his image built on being an unlucky child. He is comforted and guided by his Grandmother and they together learn the true meaning of luck and integrity through the enrichment of Philippine culture and superstitions.

**Key Words:** Superstition; Traditions; Family;



# **Art Performances and Exhibitions**

---

## **Music (MUS)**

## Piglas

Patricia Alexis G. Villafuerte  
Mr. Jay Decayco

*De La Salle University Integrated School (Manila)*

**Abstract:** The “Maria Clara” archetype provides the need for Filipina women to have a demure, gracious, and a lady-like presence. This archetype was highly prominent in the 19th Century, and is carried on to each generation of the Philippine Culture, lessening its impact everytime, and yet still manages to keep its presence alive. The outdated archetype must be left behind in the past, as times have changed, and it is not applicable to the Modern day Filipina. The music to be created will tell the stories of the “Modern day Filipinas,” how they overcame the archetype and became the Filipina they are today. The medium of the artwork is Music Composition and Arrangement in Ensemble and SATB. The musical aims to break the “Maria Clara” archetype instilled in the Philippine Culture, and to empower the Filipino women to not let society dictate what they should be. The information gathered came from various literary books on the Philippine woman, and interviews with Filipina women who have experienced the “Maria Clara” archetype shaming. The artwork aims for the people to hear the Filipinas’ cry to end the archetype, and leave it behind, as they have endured enough sufferings brought by the archetype.

**Key Words:** Filipina ; Maria Clara ; Musical ; Philippine History ; Women

## Pwede Pa Ba?

Edrhose Nathalie I. Dela Cueva  
Edison C. Ticzon

*South Hill School Incorporated*

**Abstract:** The song describes how strong a woman without a man. Simply telling us that a woman can lived happily and fruitfully without a man beside her. It is having a realization of self-worth and self-love. We, women experienced being left alone by men. The inspirations of this song are those people who has been left but have learn to stand by their own. This song aims to encourage women to think that they have worth by loving themselves even more. When writing the lyrics of the song, it must be real and genuine. You need to feel every emotion that the character is portraying and again, this song is about woman who is constantly left without knowing why.

## “Walang Sugat” in a modern world

Beryl Jade L. Palma  
Jay William Decayco

*De La Salle University Integrated School (Laguna)*

**Abstract:** Zarzuela is a Spanish traditional form of musical comedy but yet many people are not that familiar about it. Compared to Filipinos back in the old days, they are aware of zarzuelas. Walang Sugat is a well-known zarzuela during the 1861- 1942. The music in the zarzuela depicts the importance of the content sung by the on-screen characters and onscreen characters and the temperament of the scene. The components of the Philippine Zarzuela is that there are male and female principle entertainers and helping on-screen characters wearing various outfits relying upon the subject of the story and on the jobs of the on-screen characters. Zarzuela began in Spain in the seventeenth century yet arrived at its complete structure in the nineteenth century as a blend of instrumental music, singing, moving and the verbally expressed word that incorporated the rhythms and customs of the various societies of Spain. Today the structure and convention of zarzuela are immovably settled, in view of styles created in the years prior to the Spanish Civil War during the 1930s.

**Key Words:** Zarzuela, Walang Sugat

## Within: A Life-Long Journey

Martin David R. Victoria  
Jay William Decayco

*De La Salle University Integrated School (Laguna)*

**Abstract:** The Dissociative Identity Disorder (D.I.D.) has been one of the most complex mental disorders and still is today. This condition has also been one of the many misunderstood mental disorders because of its complexity in terms of the factors one needs to learn to comprehend the condition. D.I.D. is the condition when a person experiences a series of dissociation in memory because of the switching of alters or personalities. This condition is caused by severe trauma during early childhood and serves as a coping mechanism by the brain. The artist had archival research and an online survey about the condition to further understand the subject. The artwork of the artist would be a pair of musical compositions and a visual representation of the music in the form of wire sculptures. The musical composition would be purely instrumental where parts of it would be represented visually through the wire sculpture. The artworks are inspired by a local play about the condition titled "Piyesa" by Teatro Lasalyano, the year 2019. Moreover, the artwork is also inspired by and would be about the daily struggles of a person with D.I.D and the overcoming of such challenges. The artwork's main objective is to further raise awareness about the misunderstood condition and to correct prejudice and misconceptions about the condition.

**Key Words:** Dissociative Identity Disorder; DID; Music; Sculpture; Mental Health; Awareness

## A Spark of Light

Ruperto Jose V. Gamboa III  
Jay William Decayco

*De La Salle University Integrated School (Laguna)*

**Abstract:** Ilaw is film that was made to represent a life of a family who has an OFW loved one coming home after a long time for the Christmas season. This film is about a father who would narrate on how every house has a n “ Ilaw ” that spark s his/her hous ehold. The one that brings joy and happine ss to a gloomy and mel ancholic night. The music that wil l be composed in t his certain film is called “ A Spark of Light ” where - in it sets the mood and complete the emotion of the film it’s trying to portray . It aims to reminisce the emotions of the vi ewers and listene r s to be reminde d of their own so called “ Ilaw ”

**Key Words:** Ilaw, A Spark of Light

# **Art Performances and Exhibitions**

---

## **Theater Arts (TA)**

## Walang Sugat!

Samantha Mae Tinsay, and Sydney Ashley Unabia  
Ms. Daryl Gadingan, Arts Adviser

*De La Salle University Integrated School (Manila)*

**Abstract:** Walang Sugat! is a modern adaptation of Severino Reyes' 1898 sarswela of the same name. Featuring a forbidden romance, satirical comedy, and dangerous patriotism, the production will be staged as a musical to not only adhere to the source material but to also showcase the talents of the Performing Arts Stream 118. Adjustments include the replacement of the main conflict from the Spanish Occupation of the original text to the implementation of martial law. Walang Sugat! became a subject of interest upon recognition of the story's parallels to recent events. Since its first staging over a century ago, this tale is still pertinent and of relevance to contemporary society. The artists aim to successfully modernize Reyes' artwork for the sake of relatability while remaining faithful to its dramatic genres and essential plot points. The primary goal is to ignite the audience's love for the country.

**Key Words:** sarswela; adaptation; modern; martial law



## **A Fusion of the Arts: Adapting Philippine Theater to Kabuki**

Kezia Renee R. Reyes and Ariana Isabelle B. King  
Ms. Daryl Gadingan, Arts Adviser

*De La Salle University Integrated School (Manila)*

**Abstract:** The Ladies and the Senator is a satirical one-act play written by Severino Montano, the Philippines' 2001 National Artist for Theater. The artwork is an adaptation of Montano's work from Philippine theater into kabuki theater, a Japanese form of theater that traditionally combines drama with dance and music. The artwork aims to bring forward issues present in current Philippine society in a lighthearted manner by combining kabuki's exaggerated style of performance with the plot of Montano's play, which disguises addressing relevant issues within a chikahan or gossip between friends. The artwork aims to introduce the audience to Asian theater while giving attention to the works of Filipino National Artists. Technical elements taken from kabuki are its' style of acting and makeup. The artwork is of an iteration of the overall plot of The Ladies and the Senator. The excerpt is a chikahan between a social climber and her daughter which alludes to social issues, set in the Edo period of Japan.

**Key Words:** Kabuki ; adaptation; Philippine; theater

## **Walang Hanggan: A Restaging of Jean-Paul Sartre's "No Exit"**

Aaron Zonio, and Karl Navela  
Ms. Daryl Gadingan, Arts Adviser

*De La Salle University Integrated School (Laguna)*

**Abstract:** The inspiration of the play came from Jean-Paul Sartre's play called "No Exit", which is a dream play that centers on the theory of Existentialism. The researchers also incorporate social issues that reflect the Filipino Modern Youth. This play aims to make the audience question their existence as human beings and make them reflect on themselves. For the creation of the play, the researchers incorporated theories to redefine the play such as Surrealism, Realism, and Minimalism. They also tackle social issues that reflect the Filipino Modern Youth to give purpose to the characters in the play and to provide relevance to the Filipino context. The primary message of the adaptation is that "Hell is other people."

**Key Words:** Jean Paul-Sartre; Filipino modern youth, existentialism, social issues

## Inside A Doll House: A Dada Restaging of Henrik Ibsen's "A Doll House"

Louise C. Antonio, Paolo Miguel L. Hildawa, and Angelique L. Veridiano  
Ms. Daryl Gadingan, Arts Adviser

*De La Salle University Integrated School (Manila)*

**Abstract:** The concept of Inside A Doll House is adapted from the realistic play by Henrik Ibsen that was first produced back in December 1879. The artwork aims to give more attention to societal issues during the past that is still present until today. This artwork also aims to give a brief portrayal of how the male dominated society tackled a huge part on the issues in our world today. This realistic play will be adapted in to a Dada experimental play and will be conducted in a thrust stage since it is a Dada play the audience will have the opportunity to see every angle of the actors on the stage.

**Key Words:** Dadaism, Feminism, Juxtaposition

# **Art Performances and Exhibitions**

---

## **Visual Arts (VA)**

## The Rights of the LGBTQ+ as the Light for Overcoming Discrimination

Lino, Xandrille  
Mae L. Camposagrado, Jonas, Arts Adviser

*Treston International College*

**Abstract:** Nowadays in the Philippines as youths we are very open-minded in situations that revolves around us, we adjust in certain societies that we are put in order to belong. But although people are aware, some people do not apply it. It inspired me to speak for the rights of the LGBTQ+ for the people to become fully aware of other circumstances to be more liberated in showcasing who they are. My main objective is to make my audience feel disturbance and to capture their attention of deciphering of what a bouquet of flower with a head means. For my painting I used watercolor as my main medium in the background I used the color of yellow ochre to make it feel warm but dead at the same time. And the vase where you hold what you are with a design of flowers with the color of blue emphasizes elegance and fragility and the head with an unknown gender. Red spider lily / Higanbana symbolizes the beauty of death itself. I want to show my purpose of creating this piece to the people that are part of the LGBTQ+ to feel at ease. That they should not be downgrading themselves to a label that they should be proud about. That they are liberated and should be treated as the same as what human beings are. I want people to know that although I am not part of the LGBTQ+ I have respected them and learned to love what they really are.

**Key Words:** LGBTQ+, Discrimination, Awareness

## **Anamnesis: An Exhibition Expressing the Duality in Recollection and Ephemerality through an Immersive Installation Art**

Tannah Noelle S. Dela Cruz  
Ms. Elle Dumalaog

*De La Salle University Integrated School (Manila)*

**Abstract:** The installation art is a reflection of the self. The concept of vestigial structures will be portrayed by these elements as they symbolize the things that we bury and the things that we unearth in the process. The piece is also an embodiment of a whole recollection of memories, images that have been repeated so often that their function as representation is subsumed into something more abstract. This installation will consist of seven life-sized human figures casted out of pure white plaster. There will also be floating stylized buoys in the formation of a labyrinth that serves as navigational marks of the self to the “center” floating into the sea-like space. It is to concretize wishes at the same time it is to leave out traces of the audience as individuals, as the “self” and because we forget, we created marks of ourselves in order to remember. The idea is to create a work that would be personal but at the same time universal— for people to recall what they always knew and be interested in what makes them do certain things that they do. The artist would like to provide images that would startle one into recollection and be able to move and re-enchanted people. To further improve the integrity of the study, the artist reached out to professional artists who have worked with installation art and philosophers who have a mastery on the similar concept.

**Key Words:** anamnesis; vestigial structures; duality; rebirth; ephemerality

## **Blitz by Beasts Philippines' Endangered Animals as Characters: Integration of Anthropomorphism in Urban Art Sculpture**

Juan Miro Magbuhos  
Ms. Elle Dumalaog

*De La Salle University Integrated School (Manila)*

**Abstract:** The artwork that will be created and exhibited was driven by the pain and suffering of endangered animals, seeing them in distress inspired the works. The endangered animals that will be featured in the works will be from the Philippines, specifically the Tarsier, the Tamaraw and the Philippine eagle. The style in which these animals will be represented in takes heavy influence from urban art, street art and culture, graffiti and an emerging trend in the art world, designer toys or art toys. The animals will be presented in a way that the viewers would view them as fighting back in non-violent ways against humans who have caused their destruction; against the causes of their endangerment. The artist aims for the work to create a voice for these animals; create an awareness and discussions among the viewers of the work. To add to this, the work also aims to explore and propagate contemporary art styles, such as the aforementioned urban art, street art and graffiti. The artist also aims to express his passion for both urban art and the welfare of animals. To further improve the study, aside from book and online references, the artist will reach out to professional artists who has a style related with the topic or to professional artists who have worked with similar themes.

**“Ako Ba’y Maganda Na?”  
An Image Of The Effects Of Social Media’s  
Beauty Standards Amongst Filipina Adolescents**

Julianne Lei L. Demabildo  
Mrs. Virginia Lacsamana

*De La Salle University Integrated School (Manila)*

**Abstract:** Social Media’s convenience has allowed its users to communicate and flaunt their own lives to the masses. Though it provides an avenue for relationships, present content such as beauty standards has come off as hostile to some--particularly towards Filipina adolescents. The subjects’ emotions and response brought upon by Social Media’s beauty standards was a motive to perpetuate this artwork. Through interviewing Filipina adolescents from different locations, it aims to display the face of insecurity, self-depreciation, and self-destruction brought upon by Social Media’s beauty standards; bringing awareness to its possible dangers amongst its subjects and for all. It explores the limitless potential of sculpture-making through the utilization of unconventional materials. The sculpture interprets the possible emotional dangers in hopes to prevent overindulgence in Social Media’s beauty standards--what is seen online can change one’s perception and what is perceived by one can physically and emotionally alter their self.

**Key Words:** Social Media; Beauty Standards; Social Media’s Beauty Standards; Sculpture, Filipina Adolescents



## **INTERITUS: An Introduction to Dissociative Identity Disorder through Mixed Media Installation Art**

Khaira Nadine T. Chua  
Mrs. Virginia Lacsamana

*De La Salle University Integrated School (Manila)*

**Abstract:** The Dissociative Identity Disorder (DID) is a neurotic disorder where multiple identities, referred to as alters, develop in one individual in order to cope with the stress and struggles in his/her environment. Patients that are diagnosed with neurotic conditions such as DID can be treated through psychotherapy. However, due to the narrow-mindedness and unfamiliarity of the society regarding matters like psychotherapy, these patients experience severe stigmatizing which not only causes them to get more stressed, but also worsens their condition. Through interviews with professional psychologists, the artist will be conducting a research to educate herself on Dissociative Identity Disorder so that she may create an effective mixed media installation exhibit. The exhibit will be composed of a sculpture and a print from which the artist aims to effectively disseminate and inform the society on the condition in hopes that the society may understand and refrain, if not stop, themselves from creating stigmas and from perceiving the individuals who suffer from neurotic conditions, specifically Dissociative Identity Disorder, through these corresponding stigmas.

**Key Words:** Dissociative Identity Disorder; Multiple Personality Disorder; Installation Art; Sculpture; Printmaking

## Lakan/bini

Cyrus Manalo  
Ms. Elle Dumalaog

*De La Salle University Integrated School (Manila)*

**Abstract:** The artworks to be presented for “Lakan/bini: A Visual Representation of Empowerment from Androgyny through Oil Paintings” are of portraits of androgynous individuals. These works will be displayed in 3 by 4 feet canvases through oil. The concept of androgyny was sparked by the identity of the artist during the conceptualization phase, such that they expressed themselves in both masculine and feminine styles. There are three main objectives of the artworks: (a) a representation of the artist’s identity, (b) to educate those that witness and observe the artworks about the concept of androgyny, (c) to contribute in the field of LGBT+ artworks that is in relation to the Philippines. Similar to this, the significance of the artwork is also to educate and at the same time, empower and let the audience contemplate on their identity and how they could express themselves.

**Key Words:** androgyny; gender expression;

## **The Artist: An Exhibit Expressing the Inception of an Artist through an Immersive Painting and Installation Art**

John Christian Singh  
Ms. Elle Dumalaog

*De La Salle University Integrated School (Manila)*

**Abstract:** This research and exhibit is all about “the beginning of an artist”. This concept is then presented with the premise of philosophies that tackle the concept of creation and existentialism. These all allow the viewers of the artworks to understand this concept and allow them to relate it to the start of one’s purpose in this world. The exhibit is inspired by the thought of how an artist creates works that create images of him/herself to others and how it is the artist who decides how the art will give him/herself purpose. Moreover, the exhibit is also inspired by the concept of “Breaking the Fourth Wall” and the idea of reaching the audience even if they are not part of the art. The main objective of this exhibit is to create an experience that integrates this concept along with the narrative by using different objects to create a visually immersive experience. To further understand this concept and create an exhibit with a concrete meaning, further research into different philosophical matters is applied to give the exhibit more depth. In addition, interviews with different kinds of artists are conducted to give way to varying perspectives on the matter. This exhibit will allow viewers to think about the concept in a more personal way and which also allows the artist to simulate a deep connection with them. It gives an opportunity for those who are finding their way, an inspiration for what they plan to achieve in life.

# Committee

---

**Ms. Maria Yvette M. Meniano**  
Integrated School Research Director

**Mr. Rembrandt P. Santos**  
Event Chair

**Mr. Leo Vicentino**  
Program Head

**Mr. Jairus A. Fernando**  
Media Head

**Dr. Pablo S. Dejan**  
Sponsorship Head

**Ms. Loisel R. Gervacio**  
Food and Transportation Head

**Mr. Dennis P. Casanes**  
Logistics Head

**Mr. Leonardo M. Villena**  
Discipline Head

**Mr. Christian P. Gopez**  
Communications Head

**Ms. Sherilyn T. Abarra**  
Registration Head

**Ms. Shiela Rose E. Salvador**  
Finance Head

**Ms. Myrla D. Torres**  
Research Congress Chair

**Ms. Liezl R. Astudillo**  
Paper Presentation Head

**Ms. Whenn G. Peña**  
Poster Presentation Head

**Mr. Reymund R. Gonowon**  
Business Concept Bazaar Head

**Mr. Engelbert C. Talunton**  
Art Performances and Exhibitions Head

