

CNU FIRE

FESTIVAL ON INNOVATIONS IN RESEARCH



*Complexity and Adaptation
in the Era of the Fourth
Industrial Revolution*

Cebu Normal University | 17-19 October 2019



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The CNU Festival on Innovations in Research 2019 (CNU FIRe 2019)

"Complexity and Adaptation in the Era of the Fourth Industrial Revolution"

17-19 OCTOBER 2019

CEBU NORMAL UNIVERSITY



MESSAGE



Republic of the Philippines
Office of the President
COMMISSION ON HIGHER EDUCATION
Regional Office VII, Cebu City



MESSAGE

The Commission on Higher Education Regional Office VII warmly congratulates the **CEBU NORMAL UNIVERSITY FESTIVAL ON INNOVATIONS IN RESEARCH 2019 (CNU FIRE 2019)** in coordination with the **Philippine Society for Public Administration (PSPA)** which ably hosted by the **Cebu Normal University** on **October 17-19, 2019** with the theme: **"Complexity and Adaptation in the Era of the Fourth Industrial Revolution"**.

This CNU Festival on Innovations in Research is set to infuse a new flavor to the usual research conference to zeal the collaborative and complementary efforts of scientists, students and stakeholders both national and international community.

Many would say RESEARCH is a simple search for TRUTH. Astonishingly, the simple search for truth is a tedious process. Withholding judgment until data have been processed, dissemination and sustainable utilization of output is not a joke.

At the outset, I would extend my congratulations to all of you and once again the said activity will be definitely a success.

Welcome to Region VII and Congratulations!



MAXIMO C. ALJIBE, Ph.D., DPM, CESO III
Director IV

The CNU Festival on Innovations in Research 2019 (CNU FIRE 2019)

"Complexity and Adaptation in the Era of the Fourth Industrial Revolution"

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MESSAGE

“Cebu Normal University commits itself to the pursuit of quality and relevant higher education through innovations anchored on an evidence-based environment. With the onset of the Fourth Industrial Revolution, the academe is challenged to reinvent not only how teaching is done and how learning is facilitated but also how research is viewed and pursued. The CNU Festival on Innovations in Research 2019 (CNU FIRE 2019) is the step towards the direction of embracing and utilizing complexities to advance knowledge generation. It is our hope that the participants of this gathering gain a fresh perspective on how data analysis can be done such that emergent behaviors of agents or populations may be deduced and used to improve policies and practices. With its theme, “Complexity and Adaptation in the Era of the Fourth Industrial Revolution”, this gathering of intellectuals and innovators is a testament to our collective belief that research is a driver of innovation and one of the important keys to building a better future for our country.”

“On behalf of the CNU Family, welcome to CNU FIRE 2019!”



DR. FILOMENA T. DAYAGBIL, Ed.D., CESE
SUC President III

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GUEST SPEAKERS



Dr. Roberto N. Padua

*Former Commissioner
Commission on Higher Education*



Dr. Jonel P. Saludes

- Professor of Chemistry
- Associate Vice-President
Research and Global Relations
- Director, Center for Natural Drug Discovery
and Development
University of San Agustin, Iloilo



Dr. Jan Chung-yuang

*Minister
Examination Yuan
Republic of China*



Dr. Lizan E. Perante-Calina

- President, Philippine Society for Public
Administration
- Vice President and Dean for Graduate
Studies, Development Academy of the
Philippines

The CNM Festival on Innovations in Research 2019 (CNM FIRE 2019)

"Complexity and Adaptation in the Era of the Fourth Industrial Revolution"

CEBU NORMAL UNIVERSITY

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GUEST SPEAKERS



Dr. José Chiu-C. Chen

- Professor & Chair, Dept. of Public Management and Policy, Tunghai University
- President, Taiwan Association for Schools of Public Administration and Affairs



Dr. Alex B. Brillantes

- President, Asian Association of Public Administration
- Former CHED Commissioner



Mr. Rene Sanapo

Consultant
The Asia Foundation's Coalition for Change II Program



Dr. Rozzano C. Locsin

- Professor Emeritus, Florida Atlantic University USA
- Professor, Tokushima University Japan

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PROGRAM

October 17, 2019 (DAY 1)

MORNING

Venue: Tandang Sora Hall

8:00 AM	Registration	
9:00 AM	Invocation and the Philippine National Anthem	CNU Chorale
	Welcome Remarks	Dr. Filomena T. Dayagbil, CESE SUC President III
		Dr. Maximo C. Aljibe, CESO III Director IV Commission on Higher Education Region 7
	Rationale	Dr. Angeline M. Pogoy Vice-President for Research, Extension and Publications OIC, Center for Research and Development
10:00 AM	Opening of Exhibits	Dr. Roselle J. Ranario Assistant Festival Chair
		Venue: Samuel McClintock (SM) Hall
	CNU Festival Performance	
10:30 AM	Competition for Exhibition Booths and Inventions/Utility Models	
		Venue: Samuel McClintock (SM) Hall
12:00 NN	LUNCH	

AFTERNOON

“Complexity and Adaptation in the Era of the Fourth Industrial Revolution”

1:30 PM	Keynote Speech	Dr. Roberto N. Padua Former Commissioner Commission on Higher Education Philippines
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“The Role of HEIs in Capacitating Filipino Human Resources and Developing Technologies that are Globally-competitive in the Era of IR 4.0”

Plenary Session	Dr. Jonel P. Saludes Associate Vice-President for Research University of San Agustin, Iloilo Philippines
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“Complexity and Adaptation of Governance in the Era of the Fourth Industrial Revolution “

Plenary Session	Dr. Jan Chung-yuang Minister Examination Yuan Republic of China
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PROGRAM

4:30 PM Open Forum

Moderator

Mr. Kim Francis Rodriguez
Public Information Officer

4:45 PM Awarding of Certificates of
Appreciation

Dr. Filomena T. Dayagbil, CESE
SUC President III

Dr. Angeline M. Pogoy
Vice-President for Research, Extension and
Publications
OIC, Center for Research and Development

Dr. Daisy R. Palompon
Vice-President for Academic Affairs

Atty. Dominicana J. Bandala
Vice-President for Administration

HOST: MR. KIM FRANCIS RODRIGUEZ

October 18, 2019 (DAY 2)

MORNING

Venue: Tandang Sora Hall

PHILIPPINE SOCIETY FOR PUBLIC ADMINISTRATION (PSPA) **SPONSORED PLENARY SESSION**

8:00 AM Registration

9:00 AM Plenary Session

*"4th Industrial Revolution, Public Sector Reform and Public Administration Education:
Issues and Directions"*

"Industry 4.0 matters to all sectors?"

Dr. José Chiu-C. Chen
Professor & Chair, Dept. of Public
Management and Policy, Tunghai University
President, Taiwan Association for Schools of
Public Administration and Affairs
Taichung, Taiwan

"Phronetic Leadership & Governance Reform in Response to the 4th Industrial Revolution"

Dr. Lizan E. Perante-Calina
President, Philippine Society for Public
Administration
Vice President and Dean for Graduate
Studies, Development Academy of the
Philippines

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PROGRAM

Dr. Alex B. Brillantes
President, Asian Association of Public
Administration
Former CHED Commissioner
Philippines

“Entrepreneurial Development”

Mr. Rene Sanapo
Consultant
Foundation for Economic Freedom
The Asia Foundation

11:30 AM Open Forum

Moderator

Dr. Roselle Jardin-Ranario
Professor, Department of Public Governance

12:00 NN LUNCH

AFTERNOON

BREAK OUT SESSIONS OF ORAL PRESENTATIONS

HOST: DR. ROSELLE JARDIN-RANARIO

October 19, 2019 (DAY 3)

MORNING

Venue: Tandang Sora Hall

8:00 AMRegistration

8:30 AM Infomercial and Infographics Presentation and Competition

10:30 AM Endnote Session

*“Technological Takeover, Hiding in Plain Sight; Foreseeing and Proofing
Higher Education in Health Care”*

Dr. Rozzano C. Locsin
Professor Emeritus, Florida Atlantic University
USA
Professor, Tokushima University
Japan

11:00 AM Awarding of Winners and Closing Ceremony

12:00 NN LUNCH

HOST: MR. ERIC REMOROZA

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STRAND SUMMARY LIST

Strand: **COMPLEX ADAPTIVE SYSTEM**

Session Chair: **Dr. Roberto B. Corcino**

Technical Manager: **Dr. Rodin M. Paspasan**

Venue: **Tandang Sora Hall**

TITLE	AUTHOR(S)	INSTITUTION
<i>A Formula of LET Success: A Complex Adaptive System Model</i>	Janine A. Baran Jiffy R. Cabarse Chrysler M. Cabusa	Cebu Normal University, Philippines
<i>A New Diffusion Model with External Driver for English Proficiency</i>	Grace L. Acub Karen L. Molina	Southern Leyte State University, Philippines
<i>An Emerging Picture of Global Economies Amidst Various Corruption Indices: Self-Organizing Behavior</i>	Teresita P. Senados Jimbo Juanito B. Villamor Romy Jun A. Sunico	Surigao State College of Technology, Philippines
<i>Capacitating Research Faculty for University-hood Using Bass Diffusion Model</i>	Erlinda Saludo Pantallano	Northwestern Mindanao State College of Science and Technology, Philippines
<i>Characterization of Mining Behaviour of Selected Metals in the Philippines through a Bass Diffusion Model</i>	Jhudiel Masong Lobitaña	Northwestern Mindanao State College of Science and Technology, Philippines
<i>Computer Mediated Communicators in a Social Networking Environment: Bass Diffusion Model</i>	Daley Grace Canama Dablo	Northwestern Mindanao State College of Science and Technology, Philippines
<i>Dispersion of Technological Innovations and its Effect On Carbon Dioxide Emissions</i>	Adel Grace P. Gaudicos Rujube N. Hinoguin	Southern Leyte State University, Philippines
<i>Eventual Participation of Farmers in Modern Farming Technologies and Saturation Period Analysis: A Bass Diffusion Model</i>	Annibelle Joy A. Mendoza Windy Abelidas	Northwestern Mindanao State College of Science and Technology, Philippines
<i>Global Variances in the Four Pillars of Knowledge-Based Economy</i>	Bien Andrei R. Saludo	Northwestern Mindanao State College of Science and Technology, Philippines
<i>Modeling Measles Spread through Bass Diffusion</i>	Jillian A. Bejoc	Cebu Normal University, Philippines
<i>Penetration and Diffusion of Functional Literacy in a Digital Society</i>	Erlinda D. Tibus	Southern Leyte State University, Philippines
<i>Phases of Economic Outcomes of Widespread Educational Displacement</i>	Pritzel Lee Capili Max Teody Quimilat	Southern Leyte State University, Philippines
<i>Philippine Public Safety Networks as a Type of Complex Adaptive System</i>	Michael Malachy D. Dagami Inocencia M. Cañon	Southern Leyte State University, Philippines
<i>Self-Regulation of Internet Usage by Human Development Index</i>	Inocencia M. Cañon Michael Malachy D, Dagami	Southern Leyte State University, Philippines

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STRAND SUMMARY LIST

Strand: **COMPLEX ADAPTIVE SYSTEM (cont'd)**

Session Chair: **Dr. Roberto B. Corcino**

Technical Manager: **Dr. Rodin M. Paspasan**

Venue: **Tandang Sora Hall**

TITLE	AUTHOR(S)	INSTITUTION
<i>Standard Bass Model with Random Imitation Parameter</i>	<i>Karl Patrick S. Casas Allan Roy B. Elnar Gibson T. Maglasang Roberto N. Padua</i>	<i>Cebu Normal University, Philippines</i>
<i>The Diffusion of Cashless Payment in ASEAN Countries</i>	<i>Dolly E. Hinayon</i>	<i>Southern Leyte State University, Philippines</i>
<i>The Diffusion of the Interest in the Academic Disciplines as Predictor for the Philippine Industries</i>	<i>Max Teody T. Quimilat</i>	<i>Southern Leyte State University, Philippines</i>
<i>The Global Diffusion of Mobile Broadband in Developed, Developing and Least Developed Countries</i>	<i>Lieza Noelle D. Malinao</i>	<i>Southern Leyte State University, Philippines</i>
<i>The Global Diffusion of Technologies from China and the United States of America</i>	<i>Catherine M. Garcia</i>	<i>Southern Leyte State University, Philippines</i>
<i>The Spread of Conditional Cash Transfer (CCT) for Tertiary Education in the Philippines: A Bass Diffusion Model</i>	<i>Norma P. Cereno Angeline M. Pogoy</i>	<i>Cebu Normal University, Philippines</i>
<i>“Word of Mouth” as Basis for a Bass Diffusion Model for Philippine Tourism</i>	<i>Dionalyn S. Gumacial Bien Andrei R. Saludo</i>	<i>Northwestern Mindanao State College of Science and Technology, Philippines</i>

A Formula of LET Success: A Complex Adaptive System Model

Janine A. Baran, Jiffy R. Cabarse, and Chrysler M. Cabusa
Cebu Normal University, Philippines

It is one thing to finish a college profession; it is another to be a licensed one. This paper examined the formula in attaining success in the Licensure Examination for Teachers (LET) in order to increase results and cultivate its significance. The basic social atom is the teacher education graduate imbued with the following competencies: knowledge, skill, attitude, and habit. The atoms are created in an artificial world using Minitab software where rules for interaction and adaptation among above average, average, and below average atoms are expressed in conditional statements. Descriptive complex adaptive system technique was used to investigate the phenomenon. Results revealed that the best formula of LET success is 40% Knowledge, 30% Skill, 20% Attitude, and 10% Habit. However, such formula may not be successful if the below average is greater in number with that of the above average and average. The dominance of the latter may negatively influence the former hampering success in the LET since there is a greater chance that recurrent interactions will occur between them. Thus, positive adaptation will only occur when the LET formula is observed along with purposive interactions generally taking place among the above average and average in order to attain optimum results in the LET.

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COMPLEX ADAPTIVE SYSTEM

A New Diffusion Model with External Driver for English Proficiency

Grace L. Acub and Karen L. Molina
Southern Leyte State University, Philippines

English language become so widely spread in the world of trade and industry over the years. Countries with higher proficiency tend to have higher average incomes, a better quality of life and greater investment in research and development. According to the survey of Bangkok Post in 2018, English Proficiency has not improved in Asia despite high levels of investment in the language. Learning English with primary motivation to enhance global competitiveness is a strong drive to learn English. Time series data from year 2012 to 2018 in English Proficiency has been data mined in order to determine the highly diffusive skills in English using the Bass Diffusion Calculator. From the three theories identified in this study, Bass Model Theory, Diffusion of Innovation Theory and Knox's Proficiency Theory, a new diffusion model was developed called A New Diffusion Model with External Driver for English Proficiency. The New Diffusion Model with External Driver for English Proficiency serves as a driver/pusher as motivator to facilitate the imitation of adaptors.

An Emerging Picture of Global Economies Amidst Various Corruption Indices: Self-Organizing Behavior

Teresita P. Senados, Jimbo Juanito B. Villamor,
and Romy Jun A. Sunico
Surigao State College of Technology, Philippines

This study aimed to understand the interactions among different countries endowed with two characteristics: Gross Domestic Product per Capita, representing how much of the national wealth is distributed to the people, and Corruptions Index, representing good governance. The method of complex adaptive analysis was used to derive an emerging feature of these interactions. Results show that GDP per Capita grows exponentially with good governance, although, the feature is generally similar to a random process with an upward drift. Corruption, in general,

was shown to adversely impact as the nation's ability to distribute its wealth properly. National wealth, per se, is not sensitive to good governance but it is on how the citizens per capita reap the benefits of its national wealth.

Capacitating Research Faculty for University-hood Using Bass Diffusion Model

Erlinda Saludo Pantallano
Northwestern Mindanao State College of Science
and Technology, Philippines

This study proposes a model for research-capacity building in state colleges aspiring for university using the Bass Diffusion Model. It employs a descriptive method of research of which the data are based on the number of pioneer faculty researchers and how the group infuses the culture of research to the whole faculty force as determined by the increase in number of faculty with research output over a particular period. The Bass Diffusion Model was used in processing and analyzing the data to arrive at a point or level of saturation and the particular time such saturation is achieved. Through Bass Diffusion model, it was found out that if the faculty researcher will strategize effectively in capacitating other faculty in research, the saturation point will be reached in 5-year time or in the year 2024 with a saturation level of 99%. It is then concluded that by 2024, 99% of NMSCST faculty will be capacitated in research given that the faculty researcher will have an effective strategy in diffusing research culture to non-researcher faculty.

Characterization of Mining Behaviour of Selected Metals in the Philippines through a Bass Diffusion Model

Jhudiel Masong Lobitaña
Northwestern Mindanao State College of Science and Technology, Philippines

This study looks at the adoption of Filipinos on the mining operation of the four primary metallic commodities in the country. The statistical model employed in the analysis of adoption is Bass diffusion

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model. The study revealed that Filipinos are adopting the metallic mining operations for the four different type of metallic commodity, with nickel mining as the only operation which reaches its saturation level and has the fastest rate of saturation. However, the remaining quantity of metal was found to be significant in uplifting the economy of the country. Thus, responsible mining must be allowed to diffuse in the country.

Computer Mediated Communicators in a Social Networking Environment: Bass Diffusion Model

Daley Grace Canama Dablo
Northwestern Mindanao State College of Science
and Technology, Philippines

Today, with the development of communication technologies, social network sites become common and popular. People prefer to communicate with each other via social network sites. In particular, Facebook is used by almost everyone and today it has about 2.41 billion users from all around the world. This platform of communication has significantly influence in most population of the world and considered as the most preferred means of communication to one's personal life or communication transactions; like commercial purposes, educational institutions, government and not-for-profit organizations, and for crisis responders and crisis response efforts. Therefore, the researcher explores the saturation of Facebook users all around the world in the year 2009-2018. Through the Bass Diffusion model, the researcher utilized the total population of Facebook users per continent for ten-year time series to determine the saturation point and saturation time of Facebook users per continent. In the study, it has found out that between year 2009 -2018, there is a significant increase of 99 % in four continents: North America, South America, Europe and Australia. In these four major regions, it is needless to say that Facebook has nearly reached to its saturation point and will closely penetrate the most population in a year time. Moreover, Asia raises Facebook users to 66 % and Africa roughly reached 56% of Facebook users respec-

tively. This is true enough to Asia and Africa that are still both developing countries. Generally, the result clinches a prediction that in the coming years, Facebook will be threaten, die or become unpopular; thus, moving the people to other social communication platforms that will offer new dynamics in communication.

Dispersion of Technological Innovations and its Effect on Carbon Dioxide Emissions

Adel Grace P. Gaudicos and Rujube N. Hinoguin
Southern Leyte State University, Philippines

The present study investigates the dispersion of technological innovations using diffusion analysis. A massive datasets was obtained globally for increased validity and effect. Additionally, the regression analysis was done to examine the effect of the technological innovations on the carbon dioxide emissions. The evidence suggest that wealthy nations are more privilege in generating technology. The type of innovation would either result to a decrease or increase in carbon dioxide emissions, and such increase could be due to rebound effect.

Eventual Participation of Farmers in Modern Farming Technologies and Saturation Period Analysis: A Bass Diffusion Model

Annibelle Joy A. Mendoza and Windy Abelidas
Northwestern Mindanao State College of Science
and Technology, Philippines

This study aimed to determine the saturation level of farmers adoption on modern farming technologies over the period. It utilized the descriptive design of research. The data on the total number of farmers who adopted (the proportion of individuals at time t) and the total number of farmers were gathered from the City Agriculture Office (CAO), Tangub City, Misamis Occidental. The eventual participation of farmers in modern farming technologies and the saturation point were determined using bass diffusion model. This model is governed by the given parameters which include the innovators (P), imitators (Q) and proportion of individuals who have adopted the

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technology up to time $F(t)$. Diffusion of technologies becomes feasible if the number of imitators q (extensionists from the City Agriculture Office of Tangub City) exceeds the total number of innovators p (IRRI scientists). The findings revealed that the spread of rice modern farm techniques is feasible in lowland areas than in highland places where corn farmers situated. In addition, the diffusion rate of rice modern farming technologies reached at saturation level while the adaptation rate in corn production did not. Further, the accessibility of the area is one of the factors to consider the level of diffusion of farming technologies. Hence, government intervention to increase the level of innovativeness of the corn farmers through conducting various trainings and seminars in highland and remote areas.

Global Variances in the Four Pillars of Knowledge-Based Economy

Bien Andrei R. Saludo

Northwestern Mindanao State College of Science and Technology, Philippines

Knowledge-based economy (KBE) is an economy that creates, disseminates, and uses knowledge to enhance its growth and development. It is widely held that KBE rests on the 4 independent pillars, namely Economic and Institutional Regime (EIR), Educated Population (EP), Information Infrastructure (II), and Innovation System (IS). The assumption of independence among the four pillars is an important assumption since this implies that a national economy can pursue knowledge-based development by independently manipulating any of the four pillars. On the other hand, this paper argues that these pillars are not independent. To do so, a descriptive research design was utilized using available secondary data on Knowledge Economy Index, along with the corresponding performance scores of the four pillars of KBE, from the World Bank 2008 statistics. Results show that the inter-correlation among the four pillars are indeed statistically significant. The study therefore negates the assumption of independence, showing that there exists a pillar that exerts the highest influence on the other pillars which in turn influence

the rest of the pillars similar to a ripple effect. In this paper, this model is referred to as the Concentric Ripple Paradigm. This is the emergent feature under a Complex Adaptive System.

Modeling Measles Spread through Bass Diffusion

Jillian A. Bejoc

Cebu Normal University, Philippines

Measles is a very contagious viral disease that could affect everyone anytime. It can be acquired via direct contact and/or droplet nuclei (WHO, 2019b) upon exposure to coughing, sneezing, breathing, laughing and talking (Stilianakis and Drossinos, 2010). Though a bothersome illness, measles-infected persons are expected to recuperate without treatment and oftentimes gain lifetime immunity. However, the outcome can be detrimental (Nordqvist, 2017) on re-exposure to infection among persons who have not developed the immunity as severe complications could lead to death. This paper then attempts to establish the saturation levels of the spread of measles through the Bass Diffusion Model. Ten percent of the registered Philippine population (approximately 10 million) was factored in as potential spread for measles infection. Next, the annual cases of measles infection between 2001 and 2017 were retrieved from the WHO (2019) database. These data were then fitted in the Bass Forecasting Spreadsheet. The succeeding processes involve utilizing the software to calculate and generate graphs for the new adopters of measles infection then establishing the Bass f model to determine the degree of spread and deriving the saturation point of the disease. It was found that the diffusive adoption of measles infection proceeds at a faster rate from 2001. This cumulative adoption rate will still substantially rise between 2019 and 2024 and will approximately plateau in 2025. Ultimately, measles infection will assume a downward trend until such time that Filipinos will be immune to the virus whereby the Philippines will attain a zero measles case. Generally, Bass Diffusion Model provides a good fit for the data on measles infection cases. Additionally, the model pro-

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vides insight on the cumulative nature of measles infection due to the interaction between the infected and the vulnerable adopters of measles infection over time.

Penetration and Diffusion of Functional Literacy in a Digital Society

Erlinda D. Tibus

Southern Leyte State University, Philippines

In any context it is necessary to be functionally literate in order to perform duties successfully and efficiently. This research is a descriptive design using the bass diffusion model (Bass, 1969). This research tried to establish the diffusion in terms of functional literacy in every nation in Southeast Asia, the number of years a state will achieve the highest level of adoption, the fraction of population that adopt functional literacy, and the varying reasons for adoption of the phenomenon. In 40 years or more, functional literacy is similar in all 10 countries (figure 1). Moreover, countries like Malaysia and Thailand will achieve their peak of adoption sooner except Vietnam. Among the 10 countries in Southeast Asia, Thailand was ranked first and Malaysia was ranked second with the least number of years to reach the peak of adoption, while Vietnam is seen to have the highest number of years to reach its peak of adoption. The remaining countries will settle for 40 to 65 years. Furthermore, the varying percentage of people reaching the peak of adoption is ascribed to the distinctive characteristics of the education system that nations have. It is concluded that functional literacy has a beneficial effect on the nations of southeast Asia and its diffusion is determined by the distinctive and systematic variations in their educational reforms. In addition, cultural and economic differences are also key variables to be regarded when predicting the spread of functional literacy in southeast Asia. As this research only attempted to predict diffusion in terms of functional literacy, this requires further validation.

Phases of Economic Outcomes of Widespread Educational Displacement

Pritzel Lee Capili and Max Teody Quimilat

Southern Leyte State University, Philippines

The demands of the times translate to the empowerment of the economy and human capital formation. This study looks at the phases of economic outcomes in countries where educational displacement are pervasive. Using complex adaptive systems, where the agents are countries endowed with Gross Domestic Product and Out of School Youth, we analyzed the emergent feature from the synergies accounted for by the two characteristics between countries. The study found that the self-organizing feature of these agents leads to the classification of economies as to mainly producers and mainly consumers. Moreover, data indicate an increasing tendency for countries to have more out of school youth.

Philippine Public Safety Networks as a Type of Complex Adaptive System

Michael Malachy D. Dagami and Inocencia M. Cañon

Southern Leyte State University, Philippines

Philippine public safety activities include pre-typhoon preparation, post-typhoon rescue operation, earthquake preparedness, emergency medical response, fire control, law enforcement, counter-terrorism activities. PPSN organize themselves as a type of complex adaptive system in their attempts to solve problems relating to disaster response. This study used the theory of complex adaptive systems to understand and explain the evolution of Philippine Public Safety Networks as they address the situation daily. The result of this study shows that in human-made disaster, PPSN is a complex adaptive system both in-process and in the outcome because inter-governmental agencies, non-governmental organization, and civil society organized themselves to respond to human-induced disasters and adapt a new emergent feature. However, PPNS is not complex adaptive system in natural disaster since innovative approaches as new emergent feature should still be introduced.

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Self-Regulation of Internet Usage by Human Development Index

Inocencia M. Cañon and Michael Malachy D. Dagami
Southern Leyte State University, Philippines

In this paper, the researchers used Complex Adaptive System (CAS) to identify the complex adaptive behaviour that are found between human development index and internet users. Specifically, the study determined the emergence of self-regulation of internet usage by human development index. It is also conceptualized in terms of the stabilizing factors of human development index on internet usage and self-regulated control of the use of internet. In order to get the synergy of interacting agents, the synergy calculator was used. A histogram of the frequencies versus the number of connections were drawn using the statistical software. The three clusters were identified and divided with equal frequency. The results show that a country's regulatory approach to the Internet can have a massive impact on its ubiquitousness throughout the country. It merely indicates the actual fact that for a quick moving industry like the internet, it greatly depends on human development level of agents. The increasing internet use completely affects the HDI. The findings reveal that internet users with high self-regulation would provide less time to social network sites. Self-regulated internet users will control accessing for internet usage when they know that they could not get any benefit for using it. However, it additionally shows that majority of internet users were ambivalent towards regulating the extent of internet usage and because of this ambivalence to self-regulate there is a likelihood to the internet users to the urge to access connections of internet.

Standard Bass Model with Random Imitation Parameter

Karl Patrick S. Casas, Allan Roy B. Elnar,
Gibson T. Maglasang, and Roberto N. Padua
Cebu Normal University, Philippines

Predicting the time to innovate products, it is necessary to develop reliable forecasting models such

as extending the standard Bass model by changing the imitation parameter as a random variable. This is because a fixed imitation parameter q does not incorporate the complex interaction between adopters, imitators and the environment. The Bass model with the parameter q (imitators) to behave randomly is evaluated to accommodate interaction effects with the adopters p . We assume this parameter to obey a β -distribution, both uniform and symmetric distribution. Both cases suggest a longer adoption saturation time compared to the standard Bass model.

The Diffusion of Cashless Payment in ASEAN Countries

Dolly E. Hinayon
Southern Leyte State University, Philippines

ASEAN countries like Singapore, Malaysia, Thailand, Indonesia, Philippines, Vietnam and Cambodia are heading towards cashless economy. Credit cards and debit cards are the major platforms of cashless payment. It diffuses in a faster rate. Bass Diffusion Model is utilized to analyze and estimate the rate of diffusion of credit cards and debit cards. Accordingly, countries like Singapore, Malaysia and Thailand are the innovators while countries like Philippines, Indonesia, Vietnam and Cambodia are the imitators.

The Diffusion of the Interest in the Academic Disciplines as Predictor for the Philippine Industries

Max Teody T. Quimilat
Southern Leyte State University, Philippines

The pressing problem of unemployment and underemployment in the Philippines is viewed to be a product of job mismatch which in turn is a result of the diffusion of the interest in academic disciplines in the country. This interest has become the input to the work force of the Philippine industries. Time series data from year 2008 to 2017 enrollment in 18 tertiary academic disciplines has been data mined in order to determine the highly diffusive academic disciplines using the Bass diffusion model, a very efficient tool in measuring the spread of innovation or an idea.

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The findings show that the spread of the interest in academic disciplines has the characteristic of the Bass diffusion model. Only four among the top ten highly diffusive academic disciplines matched the current industry demands for jobs, an indication of a job mismatch. The contention of the study is that as long as the selection of students on a tertiary academic discipline continues to be determined through the Bass diffusion model and meaningful government policies in education are not in place, the country will always lag on its industrial development.

The Global Diffusion of Mobile Broadband in Developed, Developing and Least Developed Countries

Lieza Noelle D. Malinao

Southern Leyte State University, Philippines

International trade helps facilitate the diffusion of technologies across boundaries. Through exports, a technology from innovation country is transmitted to a consuming country which translates to economic growth. To improve exports, governments resort to trade protectionism, trade agreements, and lowering the currency value. When a country employs any or a combination of the methods previously mentioned beyond moderation, it will lead to a trade war, as with the case of China and the United States of America. Using the Bass Model, the rate of technology diffusion and the saturation levels between the two countries were estimated to get a picture of which country will eventually dominate the global trade.

The Global Diffusion of Technologies from China and the United States of America

Catherine M. Garcia

Southern Leyte State University, Philippines

International trade helps facilitate the diffusion of technologies across boundaries. Through exports, a technology from innovation country is transmitted to a consuming country which translates to economic growth. To improve exports, governments resort to trade protectionism, trade agreements, and lowering the currency value. When a country employs any or a

combination of the methods previously mentioned beyond moderation, it will lead to a trade war, as with the case of China and the United States of America. Using the Bass Model, the rate of technology diffusion and the saturation levels between the two countries were estimated to get a picture of which country will eventually dominate the global trade.

The Spread of Conditional Cash Transfer (CCT) for Tertiary Education in the Philippines: A Bass Diffusion Model

Norma P. Cereno and Angeline M. Pogoy

Cebu Normal University, Philippines

This study predicts the spread of Conditional Cash Transfer (CCT) among its beneficiaries enrolled in tertiary education utilizing the Bass Diffusion Model. The data are extracted from the Department of Social Welfare and Development (DSWD) Annual Report CY 2014-2018 and was applied in the Bass forecasting spreadsheet. Cumulative diffusion and saturation point were categorically determined by the CCT beneficiaries from the initial adapters, imitators and the potential imitators. Findings revealed that there was a spread of CCT beneficiaries in tertiary education. However, as the years go by, only 20% of the beneficiaries could benefit the program as forecasted in 30 years. It will take four years for students to finish their higher education degree before they can be considered part in the working force. Significantly, short term course offerings that are skill-based may be offered to help the poor students work and free from the bondage of poverty.

“Word of Mouth” as Basis for a Bass Diffusion Model for Philippine Tourism

Dionalyn S. Gumacial and Bien Andrei R. Saludo

Northwestern Mindanao State College of Science and Technology, Philippines

This study intends to verify that while factors affecting tourists' choice of destination prevail, and while online and mobile ads are steadily gaining the trust of consumers, the traditional advertising through word of mouth remains an influential source of infor-

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mation for foreign tourists to visit the Philippines. The study made use of the descriptive research design utilizing secondary published data on tourist arrivals (1999 to 2018) from the Department of Tourism yearly statistics. Moreover, the study fitted a Bass Diffusion Model to the data obtained as discussed in the paper. The study shows that the tourist arrivals will saturate in 3.5 years and that the saturation level is close to 8,200,000. The current levels of 7,126,768 as of 2018 is about 87% of the saturation level. Only 13% more of the expected tourist arrivals need to be reached within 3.5 years from 2018. Tourist arrivals continued to rise over the period 1999 to 2018. The Bass Diffusion model accounted for 94.04% of the total variance which implies that roughly 94% of the tourists were enticed to visit the Philippines due to “word-of-mouth” while only 6% visited the country through other means of learning about the Philippines.

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STRAND SUMMARY LIST

Strand: **PRODUCTIVE PEDAGOGY**

Session Chair: **Dr. Helen B. Boholano**

Technical Manager: **Mr. Joje Mar P. Sanchez**

Venue: **Samuel McClintock Hall**

TITLE	AUTHOR(S)	INSTITUTION
4Cs in Teaching English to Senior High School	Donna Grace I. Cotejo Geraldine Amado Julie Cabalquinto Michelle Landao	Cebu Normal University, Philippines
A Dose-Response Model for Advanced Education and Skill Sets in Enhancing the Probability of Employment	Nigel Glenn N. Javier Angeline M. Pogoy	Cebu Normal University, Philippines
Cytology Magnified in a Flipped Classroom Environment	Blanca A. Alejandro	Cebu Normal University, Philippines
Development of Competency-Based Learning Material on Electronically-Controlled Domestic Appliances and its Acceptability among Electronics Experts	Alfie P. Alga	Zamboanga City State Polytechnic College, Philippines
Effectiveness of Small Group Instruction in Improving the Reading Skills of Grade Six Pupils: Basis for Reading Intervention Program	Trixie E. Cubillas Razeliza P. Ventura	Caraga State University, Philippines
Flipped Classroom Technique for Enhancing Grammatical Competence	Grace M. Flores Maricel D. Rivera	Cebu Normal University, Philippines
Indigenous Cultural Pedagogic Innovations: Experiences of Centers of Excellence in Teacher Education	Amelia M. Bonotan Alma Agero	Cebu Normal University, Philippines
Intercultural Significance of Ethnomathematics: Higher Education Implications	Ireneo C. Abad	Cebu Normal University, Philippines
Journey for Quality Assurance among AACCUP Institutionally-Accredited State Universities and Colleges in the Visayas	Floriza N. Laplap Ireneo C. Abad	Cebu Normal University, Philippines
Metacognitive Self-regulation, Peer Learning and Interns' Teaching Performance in Mathematics	Nigel Glenn N. Javier Noremay B. Perez Jo Ann M. Petancio	Cebu Normal University, Philippines
Mother Tongue Implementation in the Philippines: What Do Parents Say?	Gino G. Sumalinog	Cebu Normal University, Philippines
Odds of Passing the Licensure Examination for Teachers	Marilou M. Abatayo Julie Mar M. Regis	Northwestern Mindanao State College of Science and Technology, Philippines

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STRAND SUMMARY LIST

Strand: **PRODUCTIVE PEDAGOGY (cont'd)**

Session Chair: **Dr. Helen B. Boholano**

Technical Manager: **Mr. Joje Mar P. Sanchez**

Venue: **Samuel McClintock Hall**

TITLE	AUTHOR(S)	INSTITUTION
<i>The Inter-Correlation of the Criteria of Student Evaluation of Teaching (SET)</i>	<i>Resil N. Baterna Jay Jumar R. Bacunawa Eulogio S. Dublin</i>	<i>Cebu Normal University, Philippines</i>
<i>The Lived Experience of Pre-Service Teachers in their Off-Campus Exposure</i>	<i>Kim Francis R. Rodriguez Genalen M. Pepito</i>	<i>Cebu Normal University, Philippines</i>

4Cs in Teaching English to Senior High School

Donna Grace I. Cotejo, Geraldine Amado, Julie Cabalquinto, and Michelle Landao
Cebu Normal University, Philippines

The study aimed to assess the presence of 4Cs in teaching English to Senior High School students. The study looked into the attainment of the 4Cs with the help of the Semestral Teachers' Classroom Evaluation conducted by the Senior High School Department during the teaching-learning process focusing on the teachers' methodology, instructional delivery, and assessment procedure. A quantitative research design was employed in this research. A purposive sampling technique was utilized that identified the 11 English teachers in the Senior High School Department as the respondents. The evaluation results were then computed using frequency, standard error and weighted mean. It was then found out that in Senior High School, 4Cs was of great extent on classroom instruction. It implied that Senior High School teachers were both adequately prepared and ready in utilizing the 4Cs during the teaching-learning process. A proposed enhancement exercises that apply 4Cs were created to enhance 4Cs in teaching.

A Dose-Response Model for Advanced Education and Skill Sets in Enhancing the Probability of Employment

Nigel Glenn N. Javier and Angeline M. Pogoy
Cebu Normal University, Philippines

This study used binary logistic regression to predict employability of graduates with access to advanced education and skills sets. Data on access to advanced education from Social Progress Index 2018, skills and competencies from the Global Competitiveness Index of the World Economic Forum 2018 and OECD employment rate 2018 across 37 countries were utilized in the study. Results revealed that skills and competencies are highly significant to the employability of graduates. Slightly high skilled and competent graduates guarantee employment to any industry regardless of the degree programs he/she completed. Thus, there is a need for basic and higher education institutions to respond proactively for a comprehensive scale of graduates where there is a balance good academic achievement with skills and competencies.

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Cytology Magnified in a Flipped Classroom Environment

Blanca A. Alejandro
Cebu Normal University, Philippines

In teaching Biology and its processes, students focus on memorization without learning the important biological principles. Due to abstract topics, it has been observed that enough preparation is necessary by the teachers because it is hard to visualize such topics. This study aimed to determine the effectiveness of Flipped Classroom approach (FCA) in teaching Cytology or Cell Biology topics in the Grade 7 Biology Junior Laboratory High School. This study employed quasi-experimental design utilizing a 50-item researcher-made test to find out if FCA is effective in teaching Cytology. The findings of the study showed that the pre-test and post-test levels of the students' achievement in Cytology in both approaches have increased. There was a significant difference in the students' academic performance in both groups. It showed no significant mean-gain difference between the control and experimental groups. Hence, FCA is also effective in learning Cytology. It is in this contest that "Virtual Precede Concept - Optimal Learning Theory" is developed and states that prior knowledge of the concept through the aid of technology improves and develops students' self-confidence to participate and collaborate in the class and achieve optimum learning and cognition. Recommended then that schools may use FCA in science delivery aided with technology based equipment that will develop students in learning the content prior discussion.

Development of Competency-Based Learning Material on Electronically-Controlled Domestic Appliances and its Acceptability among Electronics Experts

Alfie P. Alga
Zamboanga City State Polytechnic College, Philippines

This study was undertaken to focus on the development of the Competency-Based Learning Material on Electronically-Controlled Domestic Appliances and determine the acceptability of the developed CBLM among Electronics experts and Trainers. Specifically, it seeks to provide answers to the following problems: (1) What are the components of the Competency Based

Learning Materials in Electronically-Controlled Domestic Appliances; (2) What is the level of acceptability of the Competency Based Learning Materials in Electronically-Controlled Domestic Appliances in terms of: Preliminary pages, Front page, Instruction on how to use the CBLM are clearly stated, List of Competencies, The table of content, Learning outcomes, information sheets, learning objectives, Self-check, Task sheet, Operation Sheet, Job Sheet, Performance Criteria; and (3) What are the recommendations from the experts to enhance the developed Competency Based Learning Materials in Electronically-Controlled Domestic Appliances among Electronics experts, Electronics Trainers and Instructors. The study used descriptive survey and focus on the development of the Competency-Based Learning Module in Electronically Controlled Domestic Appliances and to test the acceptability from the TESDA experts with a Trainer's Methodology 1 holder in Electronics following the TESDA standards in module development. The following institutions were chosen by the researcher in the conduct of research for the reason that these institutions are offering Electronics related programs focusing on consumer electronics servicing. The findings of the study revealed that the Preliminary Pages is "Highly Acceptable" among the Electronics experts, Electronics Trainers and Instructors. Thus, the Preliminary Pages of the Developed CBLM in Electronically Controlled Domestic Appliances is being followed and met the TESDA Standard stipulated in the Plan Training Session in preparing a CBLM. Moreover, this will also tell that the Developed CBLM in Electronically Controlled Domestic Appliances is for training and pre-assessment purposes. As a result, the Instruction Sheets is likewise "Highly Acceptable" among the Electronic experts, Electronics Trainer and Instructor. This means that the developed CBLM in Electronically Controlled Domestic Appliances were being followed as stipulated in Plan Training Session. Therefore, the Developed CBLM in Electronically Controlled Domestic Appliances is appropriate, effective and suits the training needs of the Learners/Trainees. Moreover, this module is very much useful in the Electronics Shop Laboratory as based from the evaluation among Electronics Experts and Trainers respectively. The result is highly acceptable in terms of preliminary pages and Instruction Sheets.

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Effectiveness of Small Group Instruction in Improving the Reading Skills of Grade Six Pupils: Basis for Reading Intervention Program

*Trixie E. Cubillas and Razeliza P. Ventura
Caraga State University, Philippines*

The study aimed to determine the effectiveness of small group instruction as a reading intervention strategy to develop the reading performance of the Grade 6 pupils. It utilized the quasi-experimental design specifically, one group pre-test posttest design. The study used Revised Phil-IRI Group Screening Test as the baseline in determining the participants of the reading intervention which highlighted the use of small group instruction. Graded Passages Pre-Test and Posttest was employed to identify whether the use of the intervention strategy used was effective. The study hypothesized that there is no significant difference between the performance of the participants in the PHIL-IRI Graded Passages Pre-Test and Posttest. There were 26 participants of the study who took the graded passages tests. They were grouped according to their actual reading profile. They were given reading remediation according to their capability. Results show that in terms of the reading performance in word recognition and comprehension, grade 6 pupils with grade 3 reading level has improved after the conduct of small group instruction. The same result was found with the grade 6 pupils with grades 4 and 5 reading levels. Further, evidence show that the reading intervention strategy employed, was effective. Thus, it is recommended that a reading intervention program which highlighted the use of small group instruction will be used by teachers to improve the reading performance of their pupils.

Flipped Classroom Technique for Enhancing Grammatical Competence

*Grace M. Flores and Maricel D. Rivera
Cebu Normal University, Philippines*

The grammatical competence of Filipino language learners has been declining as revealed in published research journals. This declination can be considered as an alarming problem as Filipinos are known to be good English language speakers who are also grammar-perfectionist. To address this situation, flipped classroom, a latest technique is employed to determine

if the language learners chosen to undergo the experiment will improve in terms of their grammar. These learners were taking up Bachelor of Secondary Education in English. These students also demonstrated low grammatical competence based on their writing outputs for so many semesters that they were under the tutelage of the researchers. Thus, the flipped classroom technique, a technique which is found to be effective by several researchers, was used. This study utilized the one-shot quasi experimental design and used Paired-t to treat the gathered data. This study also determined if which cluster of students (very good or good group of students) the utilization of flipped classroom is effective. The findings of the study revealed that flipped classroom technique is effective to enhance the grammatical competence of Filipino language learners regardless of their identified clusters either very good or good.

Indigenous Cultural Pedagogic Innovations: Experiences of Centers of Excellence in Teacher Education

*Amelia M. Bonotan and Alma Agero
Cebu Normal University, Philippines*

The study probes into the indigenous cultural pedagogic innovations of professors in the Region 7/ Central Visayas' Centers of Excellence (COE) in Teacher Education and their impact on their students' level of cultural awareness and sense of national identity. Conducted during school year 2017-2018, in Cebu City, Philippines, it utilized the mixed quantitative - qualitative research approaches. The researchers conducted focus group discussions with 30 professors and students from COE: Cebu Normal University, University of San Carlos and University of San Jose Recollectos. They also administered a questionnaire to 203 senior high school and college students. The study concludes that some pedagogic innovations used by professors in Centers of Excellence in Region 7- Central Visayas are (1) contextualization of the topic in local setting (2) exposure of students to indigenous culture through film-showing or field trips to museums; (3) Bayanihan spirit in group activities (4) authentic assessments; (5) Dove-tailing with co-curricular activities like, Sinulog Festival, Gabii sa Kabilin; (6) Encouraging advocacies like patronizing local products or preservation of cultural heritage. These innovations have "High Impact" on the students.

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However, there are threats coming from (a) some media outfits that fuelled cultural colonialism and bad representation of national political landscape (b) graft and corruption of some public officials. The study has contributed knowledge of evidence-based innovative pedagogic strategies worth trying out in the present curriculum of Teacher Education to help increase the students' appreciation of their indigenous Filipino culture and sense of national identity.

Intercultural Significance of Ethnomathematics: Higher Education Implications

Ireneo C. Abad

Cebu Normal University, Philippines

This metaresearch synthesizing the assertion for the need of cultural relevance in mathematics instruction revealed these findings: (1) the complementation of ethnomathematics with academic mathematics for students to achieve the desired learning outcomes; (2) the global significance of ethnomathematics to mathematics through the congruence between culture and mathematics; (3) the local significance of ethnomathematics to mathematics through culture and nativeness; (4) their higher education implications through the desired learning outcomes achievement, creativity toward contemporary civilization, toward trained professionals, well – functioning educational system. Thus, it has been concluded that the global and local significance of ethnomathematics connects the students' socio-cultural identity toward relevant mathematical thinking. These were recommended: (1) mathematics instruction should start with a relevant ethnomathematical narrative for innate learning interests; (2) mathematical academics should have an advance ethnomathematical knowledge preparation prior to instructional delivery; (3) mathematics learners should be involved in gathering ethnomathematical narratives for instructional support; (4) higher education institutional department chairs of mathematics should design and implement a long-range Program of Faculty Retooling-Retraining on Ethnomathematics-Mathematics Instructional Complementation. Further research could be conducted on: (1) Ethnomathematical Practices in Southern Rural Towns of Cebu Province; (2) Local and Standard Computational Practices in the Urban Areas of Cebu Province;

(3) Northern Rural Towns of Cebu: Ethnomathematical Folk and Contemporary Practices; (4) Ethnomathematical Practices in Cebu City: A Case Study; (5) Ethnomathematical Implications behind Basic Algorithms in Algebra and Calculus.

Journey for Quality Assurance among AACCUP Institutionally-Accredited State Universities and Colleges in the Visayas

Floriza N. Laplap and Ireneo C. Abad

Cebu Normal University, Philippines

This research looked into the journey for quality assurance of the institutionally- accredited higher education institutions among the state universities and colleges in the Visayas by AACCUP, with the Visayas State University as the only institutionally-accredited institution in the Visayas at this point in time. In terms of its profile, VSU was declared as a university under R.A. No. 9437 on April 27, 2007; with Level IV accreditation for one curricular program, Level III for nine programs, Level II for eight programs, Level I for eight programs, Candidate Status for eleven programs; and Level III status for institutional accreditation effective April 1, 2017 to March 31, 2022. The institutional survey results revealed that research in VSU had been a highly functional product of collaboration among stakeholders; teaching, learning, evaluation across degree programs strongly set and achieved programs standard; extension, consultancy, linkages maintained effective and efficient delivery of community services; faculty and staff functional academic-administrative competence had been maintained through faculty-staff development plan; quality assurance culture had been assured by a well-defined process in monitoring and evaluating its quality assurance; infrastructure and other learning resources had been maintained in compliance with requirements; support to students, library, governance and management had been strengthened through sound decisions and appropriate actions. Stakeholders' testimonies on accreditation along quality assurance strongly supported institutional accreditation. The university's best practices in QA revealed things that have gone beyond what are expected among HEIs. It is concluded that VSU has strongly maintained excellence in its journey for quality assurance. It is recommended hence that VSU consistently accomplish to-

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ward a much higher level across its profile, institutional survey results, accreditation testimonies, and its best practices along Quality Assurance.

Metacognitive Self-regulation, Peer Learning and Interns' Teaching Performance in Mathematics

*Nigel Glenn N. Javier, Noremay B. Perez,
and Jo Ann M. Petancio
Cebu Normal University, Philippines*

This study intended to find out a mathematical model that best describes the relationship a) between teaching performance and metacognitive self-regulation, b) between teaching performance and peer learning, and c) among interns' mathematics teaching performance, metacognitive self-regulation and peer learning. Primary data from 32 randomly selected student interns were gathered using a 15-item 7-point Likert-type questionnaire adapted from the metacognitive self-regulation and peer learning subscales of the Motivated Strategies for Learning Questionnaire (MSLQ) by Garcia and Pintrich (1996) with Cronbach alphas of 0.79 and 0.76, respectively. These data were analyzed using artificial intelligence using a free trial version of a symbolic regression software. Results showed that at varying levels of metacognitive self-regulation or peer learning, teaching performance also varies. But, for maximum teaching performance, a high level of metacognitive self-regulation strategy coupled with a low peer learning skill level is needed. Thus, teaching performance in mathematics is greatly affected by metacognitive self-regulation. The development of metacognitive self-regulation strategies prior to entering the internship phase will definitely help an intern improve his/her teaching performance in math.

Mother Tongue Implementation in the Philippines: What Do Parents Say?

*Gino G. Sumalinog
Cebu Normal University, Philippines*

The MTB-MLE curriculum in the Philippines has brought numerous changes which were noticeable even to the parents. This paper investigated the perspective of the parents as regards the challenges and gains that learners from Grades 1-3, whose first lan-

guage was English, experienced as they learned their lessons using the mother tongue instruction. To get the result, the researcher utilized the qualitative research method, specifically the grounded theory approach by conducting an interview and a focus group discussion to fifteen (15) parents. After an intensive thematic analysis, these themes emerged: a) A Challenge to English Speakers; b) Too Much to Learn; c) Positive Impact on the Learners; and d) Relevance of the Curriculum. In conclusion, the implementation of the MTB-MLE has become a challenge to children whose first language was English because it entailed learning a new language. Despite the challenges, it still positively impacted the lives of the learners.

Odds of Passing the Licensure Examination for Teachers

*Marilou M. Abatayo and Julie Mar M. Regis
Northwestern Mindanao State College of Science
and Technology, Philippines*

This study looks into the odds of passing the Licensure Examination for Teachers among the BEED and BSED graduates of a State College through binary regression analysis. The Licensure Examination for Teachers is a comprehensive examination which digs up the stored knowledge of the examinees. The result shows that among the identified four predictors considered, the GPA of the graduates in General Education subjects, Professional Education subjects, the over-all GPA, and the time spent for review classes not one is found to be significant predictor for passing the Licensure Examination for Teachers. These indicators do not guarantee likelihood of passing the examination. It can be concluded, that passing the licensure examination can be more attributed to the intellectual capacity and the stock knowledge of the examinees.

The Inter-Correlation of the Criteria of Student Evaluation of Teaching (SET)

*Resil N. Baterna, Jay Jumar R. Bacunawa, and
Eulogio S. Dublin
Cebu Normal University, Philippines*

The four criteria of the Student Evaluation of Teaching (SET) such as Teaching Effectiveness, Knowledge of the Subject Matter, Teaching for Inde-

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pendent Learning, and Management of Learning were the focus of the study. Data were based on the SET results of 18 faculty members of CNU-Medellin Extension for the academic year 2017-2018. The variables were inter-correlated and analyzed. Results showed a high inter-correlation among the four criteria of the SET. The findings revealed that the teacher's Teaching Effectiveness is the function of the other three criteria which means that the results in the teaching effectiveness has a halo effect to the following criteria. In general, the teachers' overall performance is measured solely by Teaching Effectiveness which makes the rest of the criteria irrelevant in the evaluation. Thus, it is recommended that the CNU's SET tool may be reviewed and recast leading to the independence of each component and consequently measuring each according to its own context.

The Lived Experience of Pre-Service Teachers in their Off-Campus Exposure

Kim Francis R. Rodriguez and Genalen M. Pepito
Cebu Normal University, Philippines

Practice teaching is said to be the ultimate assessment of all education students. It is where pre-service teachers showcase the competencies they have acquired in their teacher preparation program. Albeit independent from the control of the TEI, off-campus experiences must be able to complement the former in preparing PSTs for the teaching front as these experiences substantially influence the knowledge base of teaching they gradually construct. This descriptive phenomenological study aimed at describing the lived experience of pre-service teachers during their off-campus exposure. Utilizing an unstructured interview on 5 purposively selected participants who met the set inclusion criteria, five central themes emerged namely – opportunities, challenges, affect, ideal, and realities. The PSTs met opportunities to develop their personal and professional selves as well as challenges in terms of their own teaching competence and the particulars inside the classroom. They also felt positive and negative affects towards the experience. Further, they upheld the ideals that they have learned in specific and generic contexts and they witnessed realities that can be considered sad or harsh. These findings reveal the breadth and scope of the off-campus experience of the PSTs with implications on both the TEIs (sending party) and the basic education sector (receiving party). Recommendations for dialogue and collaboration between these two parties are then presented.

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STRAND SUMMARY LIST

Strand: **CULTURE, ARTS AND GOVERNANCE**

Session Chair: **Dr. Reynaldo B. Inocian**

Technical Manager: **Prof. Genara B. Pacaña**

Venue: **Teaching Arts Centrum, 7th Floor**

TITLE	AUTHOR(S)	INSTITUTION
<i>Beyond Beyoncé</i>	<i>Elvin E. Ruiz</i>	<i>Cebu Normal University, Philippines</i>
<i>Career Perspective of Bachelor of Public Administration Students: Basis for Public Administration Mainstreaming Program</i>	<i>Amber A. Paguray Del Mark C. Bomediano Jenessa C. Branzuela Ivy A. Ladislao Gary P. Manangkila</i>	<i>Bukidnon State University, Philippines</i>
<i>CILC of RRCY, Caraga Region: Exploring their Involvements and Influences</i>	<i>Shiela S. Badiang Chenielyn V. Esclamado Jazel D. Estoquia Jessa Mae D. Gohil</i>	<i>Caraga State University, Philippines</i>
<i>Community Extension Services of Cebu Normal University in Barangay Caputatan Norte, Medellin, Cebu: Basis for a Sustainable Community Program</i>	<i>Carlou John S. Letigio Charlene D. Padilla Conception T. Payao</i>	<i>Cebu Normal University, Philippines</i>
<i>Components of Ease of Doing Business Inferred from Macroeconomic Performance Indicators</i>	<i>Catherine M. Garcia Dolly E. Hinayon</i>	<i>Southern Leyte State University, Philippines</i>
<i>Contested Waters: Review of Literature on Water Contestations</i>	<i>Ryan Dave Rayla</i>	<i>University of San Jose-Recoletos, Philippines</i>
<i>Contractualization in the Philippine Government: A State University Practice</i>	<i>Louiechi Von R. Mendoza</i>	<i>Cebu Normal University, Philippines</i>
<i>Disaster Reduction and Emergency Assistance of Medellin (DREAM) Three-Component Framework: An LGU Resilience Modeling</i>	<i>Jay Jumar R. Bacunawa</i>	<i>Cebu Normal University, Philippines</i>
<i>Enabling Role of the Stakeholders in the School Based Management System: Experiences of Colawin National High School</i>	<i>Bonifacio S. Algonos, Jr.</i>	<i>Cebu Normal University, Philippines</i>
<i>Indigenous Knowledge of Ilokanos: Appreciation and Preservation</i>	<i>Wendelyn R. Talbo Henry U. Talbo</i>	<i>University of Northern Philippines, Philippines</i>
<i>Perceptions of the Displaced Workers in Boracay Island</i>	<i>Leigh Anne A. Mijares Darryl G. Rodriguez</i>	<i>Cebu Normal University, Philippines</i>
<i>Political Dynasty in Public Governance: A Close Encounter with the Cebuanos</i>	<i>Eron Anthony Guarde Rufina C. Rosaroso Fredrich Rama Rolan Batac Gerome L. Lasala</i>	<i>Cebu Normal University, Philippines</i>

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Strand: CULTURE, ARTS AND GOVERNANCE (cont'd)

Session Chair: Dr. Reynaldo B. Inocian

Technical Manager: Prof. Genara B. Pacaña

Venue: Teaching Arts Centrum, 7th Floor

TITLE	AUTHOR(S)	INSTITUTION
<i>Rhetorical Structures in Feature Articles of Local Ang National Papers</i>	<i>Carmel Vip C. Derasin</i>	<i>Cebu Normal University, Philippines</i>
<i>Social Progress Component and Indicators: Principal Component Analysis</i>	<i>Rodin M. Paspasan</i>	<i>Cebu Normal University, Philippines</i>
<i>The Socio-Cultural Impact of the Literary Works of Cebuano Writers and Poets</i>	<i>Rebecca Lesle J. Cabras Leonora T. Dotillos Ma. Fe. Y. Gocotano</i>	<i>Cebu Normal University, Philippines</i>

Beyond Beyoncé

Elvin E. Ruiz

Cebu Normal University, Philippines

This paper investigates the stylistic features of Beyoncé’s five (5) select songs as written forms of a passive feminist revolution. Specifically, this paper aims to look into the (1) prevalent formalistic features: theme, women images, persona, and addressee; (2) distinct lexico-semantic characteristics in the songs’ lyrics; and (3) social and cultural relevance (truths) of the songs’ lyrics. As the analyzed data shows, the female persona in contrast with the male addressee is prevalent in all five songs, as well as the various images of a woman being depicted in each of the songs are vivid and very much reflective of the women of today. The themes of the five select songs revolve around issues and concepts that directly concern women such as gender empowerment and equality. All five songs explore not only the established feminist realm such as equality and equity in the workplace, right to vote, but also the domains of feminism that have not been given sufficient attention such as female sexuality and femininity. Therefore, Beyoncé’s five select songs are written forms of passive feminist revolution.

Career Perspective of Bachelor of Public Administration Students:
Basis for Public Administration Mainstreaming Program

Amber A. Paguray, Del Mark C. Bomediano, Jenessa C. Branzuela, Ivy A. Ladislao, and Gary P. Manangkila
Bukidnon State University, Philippines

This study attempted to determine the career perspectives of the Bachelor of Public Administration students in Bukidnon State University as well as their notions on the public administration program which were taken as basis for the establishment of mainstreaming program. The study made use of a qualitative research design utilizing focus group discussions and interview in gathering data. The participants of the study were the Bachelor of Public Administration students across all year levels. Results revealed that the Bachelor of Public Administration students desired to be government employees, to engage in business, to become civil society practitioners, to work in the academe and pursue advance studies, to serve as peacekeepers and defenders of the state, and to become leaders. Their notions on the public administration program include the idea that the program is an ideal preparation for public policy practice and for law studies; the program is an appropriate formation and training for public services, administration and leadership; and that a number of them just simply desire to earn any college degree. Mainstreaming programs and activities are offered to strengthen public administration as an academ-

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ic program and to entice students to love the program more.

CILC of RRCY, Caraga Region: Exploring their Involvements and Influences

*Shiela S. Badiang, Chenielyn V. Esclamado,
Jazel D. Estoquia, and Jessa Mae D. Gohil
Caraga State University, Philippines*

The prevalence of Juvenile Delinquency should be given attention by every social institution to uphold total protection of the children of today's generation and to the approaching eras as well. This study sought to know the involvements and factors influencing delinquencies of CILC of RRCY, Caraga Region. The study is quantitative and qualitative in nature. It is qualitative method since it aimed to identify the correlational aspects of some variables to juvenile delinquencies and qualitative to further explore their experiences and validate the data from the 62 informants. The study is anchored to Differential Association and Social Learning theories. The findings revealed that there is a significant relationship of the involvements of CILC especially to variables like social and personal related factors. The study concludes that all forms of social institution such as family, school, religion and government play vital roles in the lives of these youths. It is said so because these institutions are the ones being observed and associated by the youths who are so vulnerable to absorb what is given, provided and presented in the society where learning takes place through observation, imitation and association to people and to their environment.

Community Extension Services of Cebu Normal University in Barangay Caputatan Norte, Medellin, Cebu: Basis for a Sustainable Community Program

*Carlou John S. Letigio, Charlene D. Padilla,
and Conception T. Payao
Cebu Normal University, Philippines*

The directive of this study was to assessed CNU's community extension services in Barangay Caputatan Norte along with the programs of education, health and nutrition, environmental awareness, livelihood, and peace governance (E-HELP) during the

School Year 2016-2017 as basis for sustainable community development program. The quantitative type of research and descriptive method were used with a survey questionnaire. It was supported with direct interviews which were utilized in gathering data. The statistical tools used were mean computation, percentage, frequency and t-test of difference. There were forty-seven (47) respondents of which there are 15 implementers and 32 beneficiaries in the study. The results of the study revealed that the extension program of CNU was outstandingly implemented and perceived as moderately high involvement with both implementers and beneficiaries. There was no significant difference on the ratings of implementation for both implementers and beneficiaries along with education, health and nutrition, environmental awareness, livelihood and peace governance. However, there was significant difference in the extent of their involvement on the extension programs in terms of the indicators of health and nutrition, environmental awareness and livelihood generation of Cebu Normal University. Therefore, the extension programs should continue to be implemented with project monitoring and evaluation, and continue to reach out other beneficiaries in order to develop and sustain the assessed needs of the community. This study recommends the empowered involvement of the beneficiaries and the increased participation of the school implementers along with a comprehensive package of extension programs.

Components of Ease of Doing Business Inferred from Macroeconomic Performance Indicators

*Catherine M. Garcia and Dolly E. Hinayon
Southern Leyte State University, Philippines*

This study attempts to find a significant relationship between macroeconomic performance and the Ease of Doing Business indicators. The Principal Components Analysis method was utilized to reduce the macroeconomic performance indicators into fewer dimensions for multinational companies to easily refer to in assessing the business environment and economic performance of a country. Results show that the changes in the principal components can explain 73% of the total variations in the Ease of Doing Business (data to frontier) score. Among the four principal components, 'economic growth' had the highest positive impact on

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the ease of doing business. However, an adverse effect is expected when 'economic growth' is more than doubled.

Contested Waters: Review of Literature on Water Contestations

Ryan Dave Rayla

University of San Jose-Recoletos, Philippines

The present paper reviews the literature on the politics of water and the involvements of key water actors in the shaping of water policies across various contexts and cases. The existing literature on the politics of water are predominantly cases involving contestations on water and how it is utilized or supplied. The Literature cited in this paper are cases from the developing world, particularly in the Philippines, with the exemption of a few that have been included due to the significance of their proposed theoretical frameworks on understanding contestations of water. The said cases points to a pattern common in developing states: Governments are the dominant actors on water while informal sectors of society are excluded from participating in water policies and issues. Water Contestations found in the literature are directly linked with government policies that have impacted communities adversely due to lack of consultation or lack of consent regarding water utilization. The key insight of this paper is that the discourse on the politics of water has significantly been hampered by a deficiency in finding common ground for collaboration and governance between formal institutions of governments implementing water policies and the largely unrecognized and untapped informal sectors of society.

Contractualization in the Philippine Government: A State University Practice

Louiechi Von Rama Mendoza

Cebu Normal University, Philippines

This study made use of qualitative design as method in describing the observance of contractualization in a state university as a government institution. The researcher utilized narratives as qualitative data gathered through interviews. Interviews are made with persons directly involved with the practice of contractualization in the administrative and academic offices of the state university. There are a total of 10 key informants

for the study. The key informants are composed of the following: three (3) guest lecturers, three (3) agency-based administrative staff and four (4) janitor or maintenance staff. Today, contractualization has become a global, regional, national and local trend as it gives temporary job opportunity to few some. Contractualization is now practiced in government institutions such as in the state university. However, in the state university practice, the observance of contractualization negatively affects the overall productivity and efficiency of the delivery of service and convenience to the public. Issues on knowledge-transfer, proper transition, turn-over, commitment and even honesty outweighed the advantages of contractualization. These made respective offices; which has contract-based employees (not item or regular ones), less productive at the end of the day. Overall impact of the practice of contractualization in the government is often overlooked if not obscure. The pros and cons of the observance of contractualization in the government is debated and remains unresolved.

Disaster Reduction and Emergency Assistance of Medellin (DREAM) Three-Component Framework: An LGU Resilience Modeling

Jay Jumar R. Bacunawa

Cebu Normal University, Philippines

The public is now in the era of performance, all Local Government Units (LGUs) count in this journey. The passing of Provincial Ordinance No. 2013-03 established the Our Sustainable Cebu Program and the scaled up version of the Department of the Interior and Local Government's (DILG'S) Seal of Good Local Governance (SGLG) in 2014 urged for good governance. One must show efficiency and effectiveness not only through infrastructure and business, but also on disaster preparedness. This paper is another take on DILG's program on enhancing Disaster Risk Reduction (DRR) capacity by looking into the different governing statutes on DRR management through a qualitative approach of investigation heading to crafting a model of DRR initiatives of the study's environment. Results showed that a number of LGU belong to Needing Improvement Category on DRRM efforts (PDDRMO, 2015-2017) which implied more enhanced work to reduce exposure and vulnerability at all levels. The Disaster Reduction and Emergency Assistance of Medellin (DREAM) Three-Component

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Framework Model as benchmarked on the best practices of the Most Resilient LGU of 2018 is hereby recommended for adoption.

Enabling Role of the Stakeholders in the School Based Management System: Experiences of Colawin National High School

Bonifacio S. Algonos, Jr.

Cebu Normal University, Philippines

This study provides an in depth description of the enabling roles of the stakeholders in the implementation of the School Based Management as experienced in Colawin National High School. Using qualitative case study, interviews and Focus Group Discussion (FGD) were conducted. Findings revealed that the enabling roles of the school stakeholders in the implementation of School Based Management are as follows: for the school administrator, they believe that they are the policy implementer of the Department of Education, the teachers believe that their role is to be the facilitator of learning, for the president of the Parents and Teachers Association (PTA), they are the representative and voice of the association, for the parents, they believe that they are the supporter and provider of technical expertise, and lastly for the Local Government Unit (LGU), assistance provider be it financial or material. Although the spirit of democratization and citizen participation had been practiced in School Based Management of the school, certain limitations are manifested like lack of capacity of the stakeholders and financial constraints. Consequently, this paper recommends that the Department of Education will grant fiscal autonomy and provides training and seminar to the school stakeholders for a better participation and implementation of the system.

Indigenous Knowledge of Ilokanos: Appreciation and Preservation

Wendelyn R. Talbo and Henry U. Talbo

University of Northern Philippines, Philippines

This study aimed to identify the indigenous knowledge of Ilokanos residing in the selected agricultural and coastal areas of the Province of Ilocos Sur. This qualitative research employed informal interviews and observation to gather the data needed. Results of

the study unveil that men and women in both agricultural and coastal areas in the province of Ilocos Sur rely heavily on indigenous knowledge (IK) that includes predicting weather plan as basis for planting and storing harvested crops, ripening fruit crops, the best time for fishing, as well as their disaster prevention. In addition, their IK includes the use of medical plants amidst the existence of commercial medicines in this modern age. Farmers use these knowledge derived from observations of atmospheric and astronomic conditions, behavior of animals (insects, birds and mammals) which signify the onset of rain. While fishermen observe the wind direction, the moon appearances, and months of the year to foretell what type of fish would appear. Farmers and fishermen both use medicinal plants found in their localities thinking these are natural or organic and less expensive for their illness treatment.

Perceptions of the Displaced Workers in Boracay Island

Leigh Anne A. Mijares and Darryl G. Rodriguez

Cebu Normal University, Philippines

Boracay Island is known for being a world's beach destination. Rapid infrastructures development and wanton disregard to the physical environment eventually lead to a six-month temporary closure of the Island for rehabilitation purposes based on Presidential Proclamation No. 475. As a consequence, emergence of displaced workers in the Island occurred. In this paper, the researchers aimed to know the perceptions of the displaced workers in terms of their stances, feelings and opportunities relative to the issue. The researchers used Phenomenological study, a qualitative research, to deeply know the lived experiences of the workers in Boracay. Key informants were selected through purposive sampling. This study evinced that the displaced workers carry on their indomitable spirits of survival. Hence, the displaced workers were amenable of the closure of the Island for the next generation. Moreover, they established business in their respective places, while others are looking for new opportunities. Nevertheless, they still have plans to go back to the Island because of innermost and better opportunities that await them. It is strongly recommended that all stakeholders must strictly enforce environmental laws owing to the fact that the main attraction of Boracay is their

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pristine nature; without it, everything about Boracay goes nil.

Political Dynasty in Public Governance: A Close Encounter with the Cebuanos

*Eron Anthony Guarde, Rufina C. Rosaroso, Fredrich Rama,
Rolan Batac, and Gerome L. Lasala
Cebu Normal University, Philippines*

This is a qualitative study which described the existence of political dynasties in Cebu, Philippines. The prevailing issues on political equality and perennial rule of political families were also investigated unfolding the Cebuanos' perceptions of political dynasty and its impact on Cebuano bureaucracy. The method of data analysis used in the study was narrative inquiry where storytelling among the selected key informants served as data collection technique. Purposive sampling was used in the selection of key informant politicians while random sampling for key informant voters was determined. The instruments used in data gathering were interviews and observations. The study revealed the true meaning of political dynasty, its advantages and drawbacks to its constituents. Varied rejoinders and call for democracy motivated the selected key informant politicians to continue serving the citizenry. This study recommends that an anti-individualistic voting preferences campaign be promoted by the government, education and youth sectors in transforming intelligent Filipino voters.

Rhetorical Structures in Feature Articles of Local and National Papers

*Carmel Vip Conejos Derasin
Cebu Normal University, Philippines*

This study analysed the rhetorical structures of selected feature articles printed in the local and national newspapers. The study employed the qualitative research method which focused on the textual and interpretative analysis of the data. The texts were analysed to determine the dominant rhetorical structures employed by the writers. These six texts were representatives of the different types of feature articles namely: human interest story, travelogue, personality sketch, entertainment, informative, and practical guidance. It is revealed that varied techniques were utilised in the introduction and the conclusion. The travelogue and entertainment

articles had the same introductory technique while the personality sketch and the informative article had the same concluding technique. Description was the most common method used in developing the body of these articles, although purposes and topics were varied. As to rhetorical structures, in writing the different feature articles, there were many techniques and methods that can be employed in order to achieve effective writing. Moreover, the descriptive method in writing was found to be dominant in the representative features, which suggests that more activities along descriptive writing be given emphasis in the language classrooms. It was also found out that the scope, purpose and style employed in feature writing were remarkably varied as reflected in the techniques and methods used by the writers. This suggests a degree of freedom on the part of the students to choose their topics which are suited to their purpose. This also leads to the idea that writing essays could be easier if learners adhere to the guidelines and suggestions advocated by writing experts and authorities.

Social Progress Component and Indicators: Principle Component Analysis

*Rodin M. Paspasan
Cebu Normal University, Philippines*

Economic growth has brought hundreds of millions of people out of poverty and improved the lives of many more in the last half-century. A society that fails to address basic human needs, imbues citizens to improve their quality of life, helps protect the environment and provides an opportunity for many of its citizens is ineffective. The Social Progress Index provides a practical tool for government and business leaders to benchmark country performance and to prioritize those areas where social improvement is most needed. It is the most comprehensive framework developed to measure social progress and the first to measure social progress independently of GDP. Thus, from an ideal point of view, the index of social progress should reflect GDP. The main variables identified in the system show the various inter-relationships that exist between them. The aim of this paper is to identify the key social progress indicators of the selected countries for the year 2018, which has a leading social progress index. The instrument used to measure social progress in the context of long-established economic measures such as Basic Human

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Needs, Shelter, Nutrition and Basic Medical Care, Well-being Foundation, Access to Basic Knowledge, Access to Information and Communications, Personal Rights, Access to Advanced Education has shown that some of the country's social progress index of life is global but wears down on personal rights. Thus, Social Progress consequently demands the relinquishment of personal rights. You should give your personal rights for the detriment of the general public.

The Socio-Cultural Impact of the Literary Works of Cebuano Writers and Poets

Rebecca Lesle J. Cabras, Leonora T. Dotillos, and Ma. Fe. Y. Gocotano
Cebu Normal University, Philippines

This study focused on the literary genres of Cebuano to find out its socio-cultural impact and awareness to the Cebu community. As such research, this is revealed in the socio-cultural histories of literary works which serve as imagination of creativity of genres like stories, poems, folklore and other oral traditions. This study aimed to identify the level of awareness and acceptance of the respondents to Cebuano writers' works and oral traditions; strengthen the effects of the past and the present literary works; signify the cultural impact and preservation on the youth's perspectives and the evidences of the forms of Cebuano socio cultural literary dimensions. The study used quantitative- qualitative research method in which the sources of data were collected from northern and southern parts of Cebu province; and the researcher-made questionnaire results were tabulated, tallied, and interpreted using Likert scale. The results revealed that most of the younger respondents were not very highly aware of some of the literary works. Only the elder respondents stated these literary works had been practiced since time immemorial and that folk life is influenced by the mental, cultural, and interaction of mode of Cebuanos. They were more on crafting poems and short stories. Thus, respondents agreed to preserve the literary works of famous Cebuano writers. The findings of the study revealed the respondents' influence on the socio-cultural impact of the literary works on the literary skills of the Cebuanos and reflected the interconnection and the linkage of the works of arts to Cebuano culture. Based on the findings, recommendations to encourage students to compile varied genres, exhibit literary works and establish mini-library of Cebuano writers and poets and their literary works were recommended.

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STRAND SUMMARY LIST

<i>Strand: ECOLOGY, BIODIVERSITY, CLIMATE CHANGE AND MODELLING</i> <i>Session Chair: Dr. Cristina B. Corcino</i> <i>Technical Manager: Prof. Jake Joshua C. Garces</i> <i>Venue: College of Nursing - E-Classroom</i>		
TITLE	AUTHOR(S)	INSTITUTION
<i>Antagonistic Activity of Metarhizium anisopliae against Phytopathogenic Fusarium oxysporum as Biological Control</i>	¹ Marchee T. Picardal ² Ed Daniel L. Tundag ³ Gladwin B. Goc-ong ¹ Jay P. Picardal	¹ Cebu Normal University, Philippines ² Don Vicente Rama Memorial National High School, Philippines ³ Visayas State University, Philippines
<i>Biosorption Ability of Starfruit (Averrhoa carambola L.) in Removing Cadmium and Lead in Contaminated Water Samples</i>	Pierre Kendrick L. Gosiaco Luke Carlyle Alvin L. Calvo Junarie C. Bregente Michael A. Ponce Joje Mar P. Sanchez	Cebu Normal University, Philippines
<i>Design, Construction and Evaluation of Refrigeration and Air-Conditioning Servicing Unit</i>	Victor P. Mohamad Bonnie A. Andabon	Zamboanga City State Polytechnic College, Philippines
<i>Fabrication Design of a Binary Heat Exchanger Tray Dryer that Utilizes Geothermal Energy</i>	Johann Heinrich Piñero Malongo	Negros Oriental State University Philippines
<i>Forcing dr-Power Domination Number of Graphs</i>	Cris L. Armada	Cebu Normal University, Philippines
<i>Green Synthesis of Silver and Other Metal Oxide Nanoparticles Using Kulitis (Amaranthus spinosus L.) Leaf Extract and Its Antibacterial Activity</i>	John Clifford A. Adlaon Abigail Samson Melody Lou Villaplaza Melany Lei Villaplaza Rey Y. Capangpangan Florence Jhun F. Almadin	Caraga State University, Philippines
<i>Hankel Transform of the Second Form (q; r)-Dowling Numbers</i>	Roberto B. Corcino Jay M. Ontolan Gladys Jane S. Rama	Cebu Normal University, Philippines
<i>Performance of Pandan Aromatic Rice (Oryza sativa L.) as Influenced by Soil Types and Water Levels Under Rain Sheltered Conditions</i>	¹ Ulysses A. Cagasan ² Carmencita E. Tumaca ³ Purisima P. Juico	¹ Visayas State University, Philippines ² Aklan State University, Philippines ³ Central Luzon State University, Philippines



STRAND SUMMARY LIST

Strand: **ECOLOGY, BIODIVERSITY, CLIMATE CHANGE AND MODELLING (cont'd)**

Session Chair: **Dr. Cristina B. Corcino**

Technical Manager: **Prof. Jake Joshua C. Garces**

Venue: **College of Nursing - E-Classroom**

TITLE	AUTHOR(S)	INSTITUTION
<i>The Quadratic Lambert and an Application</i>	¹ István Mező ² Cristina B. Corcino ² Wilson D. Castañeda, Jr.	¹ Nanjing University of Information Science and Technology ² Cebu Normal University, Philippines
<i>Vegetation Analysis of Rehabilitated and Old Growth Forest in Taguibo Watershed Forest Reserve (TWFR) as Basis for Ecological Restoration</i>	Kenneth Joy V. Villa Liane Lee R. Cubio Ellajean E. Gallogo Archie Along Florence Jhun Almadin Chennie L. Solania	Caraga State University, Philippines

Antagonistic Activity of *Metarhizium anisopliae* against Phytopathogenic *Fusarium oxysporum* as Biological Control

¹Marchee T. Picardal, ²Ed Daniel L. Tundag,
³Gladwin B. Goc-ong, and ¹Jay P. Picardal

¹Cebu Normal University, Philippines, ²Don Vicente Rama Memorial National High School, Philippines, and
³Visayas State University, Philippines

The search for the most effective and organic biological control against fungal-related diseases of economically-important crops such as banana is still being encouraged in the Philippines. This study compared the antagonistic activity of beneficial endophytic fungi, *T. viride* and entomopathogenic fungi, *M. anisopliae* against *F. oxysporum* (causative agent of Banana Wilt disease) using dual culture method for 10 days incubation period. The study employed Complete Randomized Design (T1= *T. viride* vs. *F. oxysporum*; T2= *M. anisopliae* vs. *F. oxysporum*; and control plate = *F. oxysporum* alone) in five replications. Radial growth and percent inhibition of radial growth (PIRG) as well as Bell rating across treatment groups were analyzed using ANOVA ($p < 0.05$) and T-test ($p \leq 0.05$), respectively. Results showed that both biological control fungi (*T. viride* and *M. anisopliae*) manifested an-

tagonistic activity against *F. oxysporum*, where *T. viride* registered stronger inhibition (PIRG=72.37%; Bell Rating=2) than *M. anisopliae* (PIRG=31.27%; Bell Rating=3). The superior antagonistic action of *T. viride* against *F. oxysporum* may be attributed to their production of hydrolytic enzymes which facilitated growth inhibition of *F. oxysporum*. To observe stable antagonistic interaction among these fungi, future studies may consider longer incubation period as well as in vivo field trial on infected banana crops.

Biosorption Ability of Starfruit (*Averrhoa carambola* L.) in Removing Cadmium and Lead in Contaminated Water Samples

Pierre Kendrick L. Gosiaco, Luke Carlyle Alvin L. Calvo,
Junarie C. Bregente, Michael A. Ponce,
and Joje Mar P. Sanchez
Cebu Normal University, Philippines

Starfruit (*Averrhoa carambola* L.) is a common fruit found in the tropics, particularly in the Philippines. Due to it having chelating agents in its fruit composition, the study determined the ability of unripe and ripe starfruits to filter heavy metals, cadmium Cd^{2+} (aq) and lead Pb^{2+} (aq), in contaminated water samples. Twenty water samples were prepared during the study, where ten samples were contami-

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nated with Cd^{2+} (aq), and the other ten samples with Pb^{2+} (aq). 15% unripe starfruit solutions were introduced to five Cd^{2+} - and five Pb^{2+} -contaminated samples, and ripe starfruit solutions were introduced to the remaining samples. Findings revealed that both Cd^{2+} (aq) and Pb^{2+} (aq) were significantly reduced when the starfruit extract was introduced to the contaminated samples. It was also found out that the bio-sorption abilities of unripe and ripe starfruits were comparable with each other, and that starfruit filtered more Pb^{2+} (aq) than Cd^{2+} (aq). Thus, starfruit is capable of removing significant amounts of heavy metals, thereby indicating metal ion concentration reduction. Studies are recommended to investigate further this ability of starfruit.

Design, Construction and Evaluation of Refrigeration and Air-Conditioning Servicing Unit

Victor P. Mohamad and Bonnie A. Andabon
Zamboanga City State Polytechnic College, Philippines

The purpose of the study was to design and construct the Refrigeration and Air-conditioning Servicing Unit (RACSU), and evaluate its functionality and effectiveness in terms of recovery of refrigerants, flushing and cleaning, evacuation and charging RAC-MAC units with refrigerant, and testing electrical components and accessories. The study is developmental research and descriptive-evaluative design. It is developmental because the first phase was the designing and construction of the unit. After the unit was constructed it underwent series of evaluation among certified experts as technicians, supervisors, instructors and professors in Refrigeration and Mobile Air-conditioning Technology with positive remarks as indicated in their agreement as "strongly agreed" after testing the functionality and effectiveness using the servicing unit. The unit was designed similar to the commercial recovery machine and vacuum unit. The construction and the assembly of this unit uses surplus hermetic compressor, improvised water, air, and refrigerant tanks-served as storage. It has an installed instrument such as multi-tester; ammeter; gauge manifold; copper tubes and structural frame. It was found

out that the RACSU is effective in analyzing unit's problems, refrigerant recovery, flushing and cleaning, evacuation and charging of refrigerant to the units. Parts and components are available in the local market. The developed unit is low-cost because majority of the parts are available in the junk and surplus shops. It was recommended that instructors and professors are encouraged to develop tools, equipment and servicing units to improve their research capabilities, and enhance teaching materials and equipment in the shop and laboratory.

Fabrication Design of a Binary Heat Exchanger Tray Dryer that Utilizes Geothermal Energy

Johann Heinrich Piñero Malongo
Negros Oriental State University, Philippines

This research is a design and fabrication of a geothermal tray dryer that will indirectly utilize heat from geothermal streams by diverting the flow of water to a dual-conduit or binary heat exchangers installed in the dryer. To test the efficiency and effectiveness of the machine, three types of fruits were dried, namely: papaya, mango and pineapple. The duration of drying to achieve a 15% moisture content was recorded. The geothermal-dried fruits were later on compared to fresh fruits and commercially available dried fruits in terms of Vitamin C content. Results showed that the fabricated dryer can dry fruits 24/7 and maintain the Vitamin C at 15 percent moisture content. In terms of comparison, the geothermal-dried pineapple and papaya showed more Vitamin C content compared to fresh and commercially dried fruits. On the other hand, mango only showed a better result against fresh fruits and not on commercially available dried mango. Accordingly, the average moisture removal rate (% per hour) for geothermal drying method on mango, papaya, and pineapple were 7.27, 4.74, and 7.34 respectively, while on sun-drying method shows 5.19, 3.66, and 5.12 in the same order. Consequently, test had shown 1.40, 1.30, and 1.43 correspondingly for mango, papaya, and pineapple for its relative yield values. Since the calculated yield variance had above one values, then it was there-

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fore favorable. For the extent of acceptability of the dryer in terms of eight dimensions of quality, all aspects got an average weighted mean of above 3.67, which means Very Acceptable. Henceforth, the dryer is recommended for technology adoption.

Green Synthesis of Silver and Other Metal Oxide Nanoparticles Using Kulitis (*Amaranthus spinosus* L.) Leaf Extract and Its Antibacterial Activity

John Clifford A. Adlaon, Abigail Samson,
Melody Lou Villaplaza, Melany Lei Villaplaza,
Rey Y. Capangpangan, and Florence Jhun F. Almadin
Caraga State University, Philippines

Nanotechnology is an emerging field in the area of interdisciplinary research, specifically in the field of biotechnology. Nowadays, medicinal plants are commonly utilized for the synthesis of nanoparticles (NPs). In this study silver and other metals oxide nanoparticles are synthesized by using a plant leaf extract of *Amaranthus spinosus* L. Synthesized NPs were characterized using FTIR and UV/Vis spectroscopy techniques. Antibacterial activity of NPs was assessed against *Escherichia coli* and *Staphylococcus aureus*. CuNPs showed higher antibacterial/ activities in comparison to AgNPs and FeNPs. UV-Visible spectrophotometric measurements of AgNPs were showed a great absorption peak at 418 to 428 nm. In the other hand, CuNPs UV-vis measurement shows a strong absorption peak at 800nm respectively. The IR spectra rum of Fe nanoparticles shows a bond at 3244.47 cm⁻¹, 1633.20 cm⁻¹, and 1347.97 cm⁻¹ at different functional groups like carboxylic acids (O—H stretch) amides (C=O bend) and nitro compounds (N—O symmetric stretch). The IR spectrum of Copper nanoparticles shows a bond at 3150.53 cm⁻¹, 1597.97 cm⁻¹, 1066.77 cm⁻¹, and 608.45 cm⁻¹ at different functional groups like alkene (=C-H bending, C=C stretch) amides (N-H bend) ethers (=C-O-C sym) and alkyl halides (C—Br stretch). Therefore, Kulitis (*Amaranthus spinosus* Linn) plant can be effectively utilized for the production of Silver nanoparticles, Copper nanoparticles, and Iron nanoparticles and can be used for many pharmaceutical applica-

tions. Further researches are recommended to include SEM and TEM analysis to identify the morphology, topography, and composition of the nanoparticle.

Hankel Transform of the Second Form ($q; r$)-Dowling Numbers

Roberto B. Corcino, Jay M. Ontolan,
and Gladys Jane S. Rama
Cebu Normal University, Philippines

In this paper, using the rational generating for the second form of the q -analogue of r -Whitney numbers of the second kind, certain divisibility property for this form is established. Moreover, the Hankel transform of the corresponding second form of the q -analogue of r -Dowling numbers is derived.

Performance of Pandan Aromatic Rice (*Oryza sativa* L.) as Influenced by Soil Types and Water Levels Under Rain Sheltered Conditions

¹Ulysses A. Cagasan, ²Carmencita E. Tumaca,
and ³Purisima P. Juico
¹Visayas State University, Philippines,
²Aklan State University, Philippines,
and ³Central Luzon State University, Philippines

One important consideration in crop production is to know the soil characteristics, water requirement and crop suitability. This study was conducted to determine the growth and yield performance of pandan aromatic rice grown in different soil types and water levels under rain sheltered conditions. The experiment was laid out in a 2 x 3 split plot, Completely Randomized Design (CRD) with three replications. Four pails per treatment (20 cm x 25 cm pail size) were used filled with 10 kg of soil. The different soil types designated as the main plots, S1= Clay Loam, S2= Clay and different water levels, W1= 0-1.5 cm, W2= 0-2.5 cm, W3= 0-5.0 cm were considered as the subplots. Results revealed that number of tillers per hill, panicle length (cm) and total grain yield (g pot⁻¹) of aromatic rice were significantly increased when rice was planted in clay loam soil regardless of the water levels except on the number of

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days from sowing up to 50% flowering. Moreover, there was a significantly higher number of weeds per pot present in treatment (W1=0-1.5 cm water level) compared to other treatments (W2= 0-2.5 cm, W3= 0-5.0 cm).

The Quadratic Lambert and an Application

István Mező, Cristina B. Corcino, and Wilson D. Castañeda, Jr.

Cebu Normal University, Philippines

The quadratic Lambert function is the solution to the equation $ye^{ay^2+y} = x$. In this talk, the Taylor series of the function along with its derivative and integral will be presented. Moreover, its application to the to the plane symmetric einstein equation will be discussed.

Vegetation Analysis of Rehabilitated and Old Growth Forest in Taguibo Watershed Forest Reserve (TWFR) as Basis for Ecological Restoration

Kenneth Joy V. Villa, Liane Lee R. Cubio, Ellajean E. Gallogo, Archie Along, Florence Jhun Almadin, and Chennie L. Solania

Caraga State University, Philippines

To mitigate the rapid lost that old growth tropical forest is experiencing due to expansion of human population and anthropogenic disturbances, reforestation program was implemented by the government. One way to evaluate the ability of a rehabilitated area to recover is through comparing it to old growth forest in terms of forest community structure. An inventory at Barangay Anticala, Butuan City is conducted to know the conservation status of the 5-year-old rehabilitated areas of the Butuan City Water District. This research also aims to know what area has higher regeneration potential between the two sites. There is slow recovery in species richness of understory vegetation in the old growth forest since it differs significantly from the 5 year-old reforested area. Moreover, old growth forest has higher regeneration count having a mean value of 138.75 than in the rehabilitated area with a mean value of only 100.25. The composition and structure of plant species in the two areas were about 68.61% dissimilar. This will serve as a baseline study to policy formulation of the current status of the rehabilitation program and which aspect in the rehabilitated area should be adjusted to potentially hasten its recovery towards the old growth forest status or to at least form a new ecosystem.

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Forcing dr -Power Domination Number of Graphs

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Abstract

Let $G = (V, E)$ be a graph representing the electrical power system, where a vertex represents an electrical node and an edge represents a transmission line joining two electrical nodes. In order to monitor the power system, some measurement devices must be placed at selected locations so that all the state variables of the system can be measured. A Phase Measurement Unit (PMU) is a measurement device placed on a vertex and has the ability to measure the state of the vertex and the edges connected to the vertex. The vertices and edges that are measured by PMU's are said to be observed. But because of the high cost value of a PMU, it is desirable to minimize their number while maintaining the ability to monitor the entire power system.

Let $G = (V, E)$ be a simple graph. Let $P \subseteq V(G)$. An edge $e = uv$ of G is directly observed by P if $u \in P$ or $v \in P$. A vertex u of G is directly observed if u is incident to a directly observed edge. An edge $e' = xy$ is remotely observed by P if $x, y \notin P$ and x, y are directly observed vertices or at least one of x and y is incident to k edges where $k - 1$ of these edges are directly observed by P . A non-directly observed vertex u of G which is incident to a remotely observed edge is called remotely observed vertex. Let $O_V^P(G)$ be the set of all directly and remotely observed vertices and $O_E^P(G)$ be the set of all directly and remotely observed edges. Then $P \subseteq V(G)$ is a dr -power dominating set (dr -pds) of G if $O_V^P(G) = V(G)$ and $O_E^P(G) = E(G)$. The minimum cardinality of a dr -power dominating set is called the dr -power domination number of G and is denoted by $\gamma_{pw}^*(G)$. A subset P of $V(G)$ with cardinality $\gamma_{pw}^*(G)$ is called a γ_{pw}^* -set of G . Moreover, there exists a graph G such that $\gamma_{pw}^*(G) \leq \gamma(G)$. Let S be a γ_{pw}^* -set of a graph G . A subset D of S is said to be a forcing subset for S if S is the unique γ_{pw}^* -set containing D . The forcing dr -power domination number of S is given by $f\gamma_{pw}^*(S) = \min\{|D| : D \text{ is a forcing subset for } S\}$. The forcing dr -power domination number of G is given by

$$f\gamma_{pw}^*(G) = \min\{f\gamma_{pw}^*(S) : S \text{ is a } \gamma_{pw}^*\text{-set of } G\}.$$

In this paper, the forcing subsets for dr -power dominating sets in the join of graphs and some special graphs such as path, cycle and complete graph are characterize. Furthermore, the forcing dr -power domination number of each of these graphs were determined.

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STRAND SUMMARY LIST

Strand: **HEALTH PROMOTION AND INNOVATION**

Session Chair: **Prof. Jillian A. Bejoc**

Technical Manager: **Ms. Joana Mariz C. Castillo**

Venue: **EMMA Center**

TITLE	AUTHOR(S)	INSTITUTION
<i>A Validation of a Non-linear Relationship on the Predictors of Violence Against Women (VAW) by Symbolic Regression</i>	Lovelyn G. Tipon Ernyl Henry E. Redula	Cebu Normal University, Philippines
<i>Adolescents with Separated Parents: Disclosures on Family Dynamics, Challenges and Coping Strategies</i>	Shiela S. Badiang Jessa G. Go Diana Rose O. Casindac Sharmine C. Pahit	Caraga State University, Philippines
<i>Art Drawing Group Therapy for Depression in Elderly</i>	¹ Irna Kartina ² Riantina Luxiarti ¹ Dewi Suryandari ¹ Atiek Murharyati ¹ Febriana Sartika Sari ¹ Muhammad Rais Prasetyo ¹ Nanda Yusril Rizal Mahendra	¹ STIKes Kusuma Husada Surakarta, Indonesia ² STIKes Mahardika Cirebon, Indonesia
<i>Art Therapy for Reducing Stress Level of Children With HIV-AIDS</i>	Sahuri Teguh Kurniawan Isnaini Rahmawati	STIKes Kusuma Husada Surakarta, Indonesia
<i>Assessment of Defecation Practices in Selected Barangays in the Cities of Cebu and Talisay: Basis for Web-Based UI Design</i>	Dane Katherine Cabaña Erlyn Ivy O. Rago Cheradee Ann M. Cabanlit	Cebu Institute of Technology-University, Philippines
<i>Awareness, Compliance and Implementation of Disaster Risk Reduction and Management of Flood-Prone Public Elementary Schools in Butuan City Division</i>	Ariel U. Cubillas Glenn M. Aviles	Caraga State University, Philippines
<i>Consuming Beans After Foot Gymnastic for Reducing Blood Glucose</i>	S. Dwi Sulisetyawati Setiyawan Irna Kartina Tutut Anggraini	STIKes Kusuma Husada Surakarta, Indonesia
<i>Counterpressure Technique with Lavender Essential Oil for Relieving Pain Intensity of Woman Post-Sectio Cesarean</i>	Uswatun Ikhsaniyah Yunita Wulandari Sahuri Teguh Kurniawan	STIKes Kusuma Husada Surakarta, Indonesia
<i>Effect of Combination of Acupressure Therapy and Watermelon Juice on Blood pressure in Hypertensive Patients</i>	Galih Setai Adi Noerma Shovie Rizqiea Septia Rizqi Ardhini	STIKes Kusuma Husada Surakarta, Indonesia

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STRAND SUMMARY LIST

Strand: HEALTH PROMOTION AND INNOVATION (cont'd)

Session Chair: **Prof. Jillian A. Bejoc**

Technical Manager: **Ms. Joana Mariz C. Castillo**

Venue: **EMMA Center**

TITLE	AUTHOR(S)	INSTITUTION
<i>Effect of Safety Checklist in Addressing Nurse Handoff Communication Divergence</i>	<i>Symebelle G. Aguiman Mark Vincent P. Sarigumba Rocky M. Camaligan</i>	<i>Governor Celestino Gallares Memorial Hospital, Philippines</i>
<i>Effect of Spiritual Emotional Freedom Technique (SEFT) Therapy on Depression Level of Cervical Cancer Patients</i>	<i>Dewi Suryandari Isnaini Rahmawati Sari Istiqomah</i>	<i>Kusuma Husada Surakarta School of Health Science, Indonesia</i>
<i>Improve Mental Health Status by Practicing Arabic Calligraphy</i>	<i>Irna Kartina Setiyawan Muhammad Rais Prasetyo Nanda Yusril Rizal Mahendra</i>	<i>STIKes Kusuma Husada Surakarta, Indonesia</i>
<i>Nurses' Perception of Traffic Accident Pre Hospital Care</i>	<i>¹Maria Wisnu Kanita ²Retty Ratnawati ²Retno Lestari</i>	<i>¹Kusuma Husada Surakarta School of Health Science, Indonesia ²Brawijaya University, Indonesia</i>
<i>The Assessment of the Health Services Delivered to the Internally Displaced Person's (IDP's) of Barangay Sagonsongan Temporary Shelters, Marawi City, Lanao del Sur</i>	<i>Hanina H. H.Haron Raihana D.H. Rashid Norhanny A. Macadato Hasnima S. Malawani Prof. Marecon C. Viray</i>	<i>Mindanao State University, Philippines</i>
<i>The Effect of Mirror Therapy Toward the Upper Extremity Grip Strength of Non Hemoragic Stroke Patient in Dr. Moewardi Hospital</i>	<i>Isnaini Rahmawati Gatot Suparmanto Axel Aseta Winona</i>	<i>STIKes Kusuma Husada Surakarta, Indonesia</i>
<i>The Effect of Salak Seed Sandals to the Foot Sensitivity Level of Diabetes Meletus Patients at Sibela Public Health Center</i>	<i>Ika Subekti Wulandari Christin Selyana Putri Nur Rakhmawati</i>	<i>STIKes Kusuma Husada Surakarta, Indonesia</i>
<i>The Persistence and Perspectives of "Bohot": A Traditional Medicine Practiced in Liloan, Southern Leyte</i>	<i>Max Teody T. Quimilat</i>	<i>Southern Leyte State University, Philippines</i>
<i>Training Factors Affecting Pattern of Use of the RxBox 100 in Pilot Rural Health Units in the Province of Iloilo</i>	<i>Aretha Gacutan-Liwag</i>	<i>West Visayas State University, Philippines</i>
<i>Use of Mobile Text Messaging in Breast Cancer Health Promotion</i>	<i>¹Leodoro J. Labraque ²Jolo Galabay ³Angie Anastacio</i>	<i>¹Sultan Qaboos University, Oman ²Isabela State University, Philippines ³St. Paul University, Philippines</i>

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A Validation of a Non-linear Relationship on the Predictors of Violence Against Women (VAW) by Symbolic Regression

*Lovelyn G. Tipon and Ernyl Henry E. Redula
Cebu Normal University, Philippines*

Violence against women is a global public health problem that has serious adverse effects on women's physical, mental, and reproductive health. It is increasingly recognized as a public health issue because of the expanding evidence base and growth of research documenting the magnitude and health effects of violence against women. Utilizing the symbolic regression the researcher was able to determine the non-linear relationship of the variables (physical injury and rape case) in the total incidence rate of violence against women across the globe. It also shows which among the predictors greatly affect the high incidence rate of violence to its total number of violence.

Adolescents with Separated Parents: Disclosures on Family Dynamics, Challenges and Coping Strategies

*Shiela S. Badiang, Jessa G. Go, Diana Rose O. Casindac,
and Sharmine C. Pahit
Caraga State University, Philippines*

The growing body of literature on marriage conflicts, dissolution and separation are palpable observations in this modern society. This turns out that understanding about family dynamics of disruptive family is now more intricate since variabilities of factors are also being recognized as society evolves. The core purpose of this study is to explore how the patterns of family dynamics in terms of relational, personal diversities, emotional, and economical aspects before and after the separation of parents changed. Further, coping strategies along with the encountered challenges caused by the status quo of parents' separation are also highlighted. This study is Qualitative in nature and had used Thematic Analysis supported by the AGIL theory. To ensure dependable information, the data gathered were purposively taken from fifteen (15) adolescent students in CSU who have separated

parents for at least six (6) months and maximum of ten (10) years. General findings revealed that family dynamics based on the identified variables are observed to have distinct patterns once parents are separated. The top three (3) encountered challenges are related to adjustments on emotional, academic, and economic concerns. These challenges are being coped with the use of Appraisal-Focused, Problem-Focused and Emotion-Focused strategies. This study concludes that family disruption measured by separation of parents does not only affect the ideal picture of family structure but also on various aspects to the lives of all members of the family.

Art Drawing Group Therapy for Depression in Elderly

*¹Irna Kartina, ²Riantina Luxiarti, ¹Dewi Suryandari,
¹Atiek Murharyati, ¹Febriana Sartika Sari,
¹Muhammad Rais Prasetyo,
and ¹Nanda Yusril Rizal Mahendra
¹STIKes Kusuma Husada Surakarta, Indonesia and
²STIKes Mahardika Cirebon, Indonesia*

Depression is one of mental condition which can cause of decreasing quality of life. There were some treatments to face this condition in health management, such as medicine therapy, psychosocial support, cognitive therapy and also assisting in case of hospitality for depression people (World Health Organization, 2014). Depression number in 2012 was reported by WHO in big number, 500 million elder who aged 60 years old. Based on Evy, 2012 there were 100 cases of depression found in every year. This study aims to explore elder people feeling by using Art Drawing Group Therapy, who has mild and severe level of depression. The method was using qualitative study, with descriptive approach, there were 6 elders who included to the study criteria, then followed art drawing group section completely (4 times). There were 3 main categories of exploring feeling in elderly with depression, they were exploring feeling about their intimate people (spouse, children and grandchild), house and treasure (gold, vehicle and pets) and job or working related issue. In short, Art Drawing Group can be one of tools for

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helping elderly with depression in exploring their feeling.

Art Therapy for Reducing Stress Level of Children With HIV-AIDS

Sahuri Teguh Kurniawan and Isnaini Rahmawati
STIKes Kusuma Husada Surakarta, Indonesia

The stigma address by community to people with HIV-AIDS causes them to be discriminated by their school, residential, and work environments. Such a discrimination is also experienced by children with HIV-AIDS so that they show some stress signs and symptoms. The prolonged stress experienced by the children with HIV-AIDS based on the psychoneuroimmunology will trigger their adrenal glands to produce cortisol (immunosuppressive) that may lead to the immune system function failure. Therefore, an alternative to decline their stress level should be attempted through positive activities such as painting art therapy. The objective of this research is to investigate the effect of painting art therapy administration on stress level of children with HIV-AIDS at Indonesia. This research used the quantitative pre-experimental research method with one group pre-test-posttest design. Purposive sampling was used to determine its samples. They consisted of 20 children. The stress level was measured with the questionnaire of Perceived Stress Scale for Children (PSS-C). The average stress level of the children with HIV-AIDS prior to the administration of painting art therapy was 15.20, and following the treatment, it became 13.15. Thus, the administration of painting art therapy had an effect on the stress level of the children with HIV-AIDS with the $p\text{-value} = 0.013$ ($\alpha < 0.05$).

Assessment of Defecation Practices in Selected Barangays in the Cities of Cebu and Talisay: Basis for Web-Based UI Design

Dane Katherine Cabaña, Erlyn Ivy O. Rago,
and Cheradee Ann M. Cabanlit
Cebu Institute of Technology-University, Philippines

Poor sanitation and hygiene because of open defecation (OD) have been linked to specific negative

health outcomes. OD is defined as the practice of passing feces outside the latrine or toilet, or in a natural environment (open field, body of water, etc.) and leaving the fecal matter exposed. With the aim to promote local solutions in reducing and ultimately eliminating the practice of open defecation, the study involved the assessment of existing defecation practices of selected barangays in the cities of Cebu and Talisay. The study involved an interview of 122 respondents about their sources of water, sanitation facilities and views on open defecation, as well as the common sanitation-related health issues present in the communities, and the relationship of household monthly income and ownership of private sanitation facility. Results showed the extent of knowledge of residents in Cebu City and Talisay City with regard to the health implications of practicing improper sanitation. These results were then used to design a user interface (UI) of a web-based application that can crowdsource solutions to address the needs of the particular community at the grassroots level toward improved health and sanitation.

Awareness, Compliance and Implementation of Disaster Risk Reduction and Management of Flood-Prone Public Elementary Schools in Butuan City Division

Ariel U. Cubillas and Glenn M. Aviles
Caraga State University, Philippines

The purpose of this study was to identify the level of awareness, compliance and implementation of the Disaster Risk Reduction and Management (DRRM) of the flood-prone public elementary schools in the division of Butuan City. Moreover, the study also aimed to determine the relationship between the level of awareness and the level of compliance of the teachers in DRRM program particularly in flood disaster and its consistency in the level of implementation as basis for localized intervention plan. It utilized quantitative and qualitative methods of research. Survey questionnaires were administered to obtain information on the study. The analyses of data acquired from the survey revealed that the participants have very satisfactory awareness in the fields

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of enabling environment, safe learning facilities, disaster risk management, and risk reduction and resilience education and have shown satisfactory compliance on the same fields. The implementation of the flood DRRM was satisfactory. Thus, it further showed that the level of awareness and the level of compliance have significant relationship but none of them has a significant relationship with the level of implementation. Findings indicated that flood DRRM is not emphasized in the schools. It was concluded that giving focus and conduct of relevant activities to flood DRRM are important to establish flood resilience in the schools.

Consuming Beans After Foot Gymnastic for Reducing Blood Glucose

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and Tutut Anggraini
STIKes Kusuma Husada Surakarta, Indonesia*

Diabetes Mellitus (DM) is a group of metabolic disorders characterized by an increase in glucose levels in the blood. Efforts made for handling DM are with 4 pillars handling DM. The study aims to determine changes in glucose levels in the blood after intervention. This research is an experimental research. The research method used Pre experiment with pre test and post test without control group design. The research instrument used a glucometer, namely the examination of post prandial blood glucose levels in 27 respondents. Quantitative data analysis using saphirowilk test with 90% CI and using Wilcoxon test. The results obtained p value of 0,000 <0,1. This study shows that there is an effect of Diabetic Foot Gymnastic Combination and Consuming Beans (Phaseolus Vulgaris L) Against Changes in Blood Sugar Levels.

Counterpressure Technique with Lavender Essential Oil for Relieving Pain Intensity of Woman Post-Sectio Cesarean

*Uswatun Ikhsaniyah, Yunita Wulandari,
and Sahuri Teguh Kurniawan
STIKes Kusuma Husada Surakarta, Indonesia*

Cesarean section gives an impact in the form of pain in the abdominal area. The pain is the result of

an incision wound. one of the non-pharmacological interventions to reduce pain is the use of counterpressure techniques with lavender essential oil. This study aims to determine the effect of counterpressure techniques with lavender essential oil on the pain intensity of woman post-sectio cesarean in RSUD Surakarta. The study used Quasi-experiment method with pre-test and posttest without control. The sampling technique used purposive sampling with 31 respondents who measured the pain intensity using VAS (Visual Analog Scale) before and after receiving counterpressure with lavender essential oil. The data analysis used the Wilcoxon Test. The results showed that the p-value was 0,000 (p-value <0,05). It means that there is a difference in the intensity of woman post section Caesarea pain before and after counterpressure with lavender essential oil. The current study revealed that that there is an effect of counterpressure techniques with lavender essential oil on pain intensity of woman post-sectio cesarean in RSUD Surakarta.

Effect of Combination of Acupressure Therapy and Watermelon Juice on Blood Pressure in Hypertensive Patients

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and Septia Rizqi Ardhini
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Hypertension is called "the silent diseases", which do not show signs but have serious complications. The prevalence of hypertension is increasing every year, based on Riskesdas data, there were 25.8% in 2013 became 34.1% in 2018. One of the non-pharmacological therapies that can be implemented is complementary nursing therapy, namely acupressure and watermelon juice. This study aimed to determine the effect of a combination of acupressure therapy and watermelon juice on blood pressure in hypertensive patients. The research used quantitative research with Quasi-experiment design by Pretest and Posttest Nonequivalent Control Group. The sampling technique used total sampling. The samples population were 42 respondents divided into two groups, 21 respondents as the treatment group and 21 respondents as the control group. In the treatment group, acupressure and watermelon juice were treated. The

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results of the Wilcoxon test showed that there was an effect on the treatment group on the blood pressure of the respondents with a p-value of 0,000 systolic and diastolic 0.002. The results of the Mann Whitney test obtained p-value (systolic) 0,224 and (diastolic) 0,673. It showed that there were no significant differences between the two groups ($p > 0.05$). Based on the mean difference (7.14 mmHg) showed that the treatment group which was given the intervention of acupressure and watermelon juice were more recommended than the control group which was only given watermelon juice. It can be concluded that there is an effect of the combination of acupressure and watermelon juice on blood pressure in hypertensive patients in Wonorejo.

Effect of Safety Checklist in Addressing Nurse Handoff Communication Divergence

*Symbelle G. Aguiman, Mark Vincent P. Sarigumba,
and Rocky M. Camaligan*

Governor Celestino Gallares Memorial Hospital, Philippines

Ineffective handoff communication of patient information intra-operatively can result to lost information, misinterpretation, and misdirected or missed action, which in turn can jeopardize patient safety. In response to this phenomena, The Joint Commission required health care setting to use a standardized approach to handoff communication such as the use of checklist. The occurrence of endorsed surgeries (from one shift to the next) and the lack of a structured handoff checklist at GCGMH, as well as occurrence of missed patient data and the results of related studies have prompted the researchers to investigate the effect of the Intra-operative Handoff Safety Checklist on addressing nurse communication divergence during handoff between the outgoing and incoming operating room nurses. A pretest-posttest quasi-experimental (non-equivalent type) research design was used to examine the effect of the Intra-operative Handoff Safety Checklist in addressing nurse handoff communication divergence. There were two groups of research participants: the comparison group and the experimental group. Both groups were administered with an identical pre- and

post- intervention survey, but only the experimental group was given an intervention which is the Intra-operative Handoff Safety Checklist. The data were subjected to weighted mean and t-test. Results revealed that the Intra-operative Handoff Safety Checklist is effective in addressing nurse handoff communication divergence. The results of this study warrants for an innovation in the handoff process by introducing a safety checklist that can serve as a written guide during the verbal (face-to-face) endorsement of operating room nurses.

Effect of Spiritual Emotional Freedom Technique (SEFT) Therapy on Depression Level of Cervical Cancer Patients

*Dewi Suryandari, Isnaini Rahmawati, and Sari Istiqomah
Kusuma Husada Surakarta School of Health Science,
Indonesia*

Chemotherapy is one of the cervical cancer treatments with some psychological impacts. One of which is depression. When depression continues and is immediately untreated, it will worsen a patient. Spiritual Emotional Freedom Technique (SEFT) therapy is a therapy which combines Energy Psychology and Spiritual Power, which is alleged to decrease depression. The objective of this research is to investigate the effect of SEFT therapy on the depression level of cervical cancer patients at Dr. Moewardi Local General Hospital. This research used the quantitative quasi experimental research method with pre- and post-test non-equivalent control group design. Non-probability sampling with accidental sampling was used to determine its samples, which consisted of 44 respondents: 22 in the treatment group and 22 in the control group. The depression level of each group was measured with Beck Depression Inventory (BDI). Its data were analyzed by using the Wilcoxon's Test. The p-value of the treatment group was 0.000 while that of the control group was 1.000. The effect of the SEFT therapy on the depression level was analyzed by using the Mann Whitney's Test. The result of the test shows that the p-value of the effect of SEFT therapy on the depression level was 0.000 ($\alpha < 0.05$). Thus, there was an effect of the SEFT thera-

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py on the depression level of the cervical cancer patients at Dr. Moewardi Local General Hospital.

Improve Mental Health Status by Practicing Arabic Calligraphy

*Irna Kartina, Setiyawan, Muhammad Rais Prasetyo, and Nanda Yusril Rizal Mahendra
STIKes Kusuma Husada Surakarta, Indonesia*

Aging is physiologic stage of human life, when physical and mental function are changed, its changing could appear in lack of memory power, decreasing of cognitive and disease opportunity increasing. Based on Anette (1996) mental health status is the key of successful aging process adaptation. WHO mentioned that 20 % of elderly had unstable mental condition, such as depression, memory disorder and anxiety. So that it is important to find a way to treat the mental changing. This study aims to identify Arabic Calligraphy influence to elderly mental health status. This study is quantitative study with pre-experimental design. There were 30 elders practicing Arabic Calligraphy during the research period. The elder people who recruited in this study had no severe vision and hearing disorder, they also could draw and used every art drawing material that using in this study. The mental health status was measured by MMSE before practiced and after 3 sessions of practice Arabic Calligraphy. After drew in complete section, the elderly would share their meaning of calligraphy. Statistical analyzing showed that there was significant changes between pre-posttest time with p value 0,01 ($p < 0,05$), means that there was influence of practicing Arabic Calligraphy. Mental status mean score was increasing after elderly practiced the Arabic Calligraphy, from 21 to 26,1. In conclusion, Practicing Arabic Calligraphy could be one of treatment in improving metal health status of elderly.

Nurses' Perception of Traffic Accident Pre Hospital Care

*¹Maria Wisnu Kanita, ²Retty Ratnawati, and ²Retno Lestari
¹Kusuma Husada Surakarta School of Health Science, Indonesia and ²Brawijaya University, Indonesia*

Emergency Medical Services (EMS) is a comprehensive pre hospital care that provides patients with life-threatening treatment. Nurse facing the barriers while helping the traffic accident victims at the pre hospital care area. The existence of limited human resources against appropriate responses, limits of authority and different decisions of the team, and the presence of obstacles in the scene of the accident from the surrounding community during an accident on the victims of traffic accidents are the common barriers which faced by the nurse. The purpose of this research was exploring nurse's perception in handling traffic accident at pre hospital care area. The research was using qualitative method with interpretive phenomenology approach by using data analysis process based on Interpretative Phenomenological Analysis (IPA). Themes were obtained from 9 participants: feeling the contradictions in the self when dealing with victims, feeling the emergence of spirit in self, experiencing poor acceptance from the community, craving accurate service by a competent team, serving with wholeheartedly embodied with the priority of the victim. Nurses believed that nurses always try to do the pre hospital care by paying attention to the victim's safety. The nurses felt that appropriate handling must be given immediately to victims of traffic accidents despite many obstacles that occur, because that is their calling as a nurse in the pre-hospital care area.

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The Assessment of the Health Services Delivered to the Internally Displaced Person's (IDP's) of Barangay Sagonsongan Temporary Shelters, Marawi City, Lanao del Sur

*Hanina H. H.Haron, Raihana D.H. Rashid,
Norhanny A. Macadato, Hasnima S. Malawani
& Prof. Marecon C. Viray
Mindanao State University, Philippines*

Health as a human right does not mean the right to be healthy nor does it assert an unlimited right to be treated for every medical condition. Rather, the right to health may be seen as having two components: a right to health care and a right to healthy condition. This study is designed to assess the delivery health services by the Department of Health (FOH) through the City Health Office of Marawi City to the IDP's of Barangay Sagonsongan, Marawi City and to identify the various services being delivered by the agency. The study is important because it will provide insights and inputs of the effectiveness and efficiency of the City Health Office in responding to the basic health services of the IDP's. It will also inform to whether the IDPs are satisfies with the delivery system of the City Health Office of Marawi measured in terms of several factor.

The Effect of Mirror Therapy Toward the Upper Extremity Grip Strength of Non Hemoragic Stroke Patient in Dr. Moewardi Hospital

*Isnaini Rahmawati, Gatot Suparmanto,
and Axel Aseta Winona
STIKes Kusuma Husada Surakarta, Indonesia*

Stroke is the third cause of death, after heart disease and cancer. As many as 5% of Indonesians over 65 years old have experienced at least one stroke. As many as 28.5% of non-hemorrhagic stroke patients died and the rest experienced total or partial paralysis. Intervention that can be used to increase the strength of grip by relying on the patient's visual illusion is using mirror therapy. The aim of this research is to determine the effect of mirror therapy

toward the upper extremity grip strength of non hemoragic stroke patient. The research design used was experimental quasi by using pretest-posttest with non equivalent control group design. The sample of this research were 33 non-hemorrhagic stroke patients who were treated in the stroke unit and orchid room II Dr.Moewardi Hospital, which is selected by using purposive sampling technique. In the treatment group, mirror therapy intervention was given. Meanwhile, ROM therapy was given in the control group. The analysis result using Paired T-Test showed that there was no difference in upper extremity grip strength before and after mirror therapy was given in the control group ($p = 0.163$). Whereas, the analysis result using the Paired T-Test showed that there were differences in the upper extremity grip strength before and after mirror therapy in the treatment group ($p = 0,000$). The analysis result using the Independent T-Test showed that there was a difference in the upper extremity grip strength after applying mirror therapy in the treatment group and the control group ($P = 0,000$). The application of mirror therapy based on regular rehabilitation care can improve the function of motor extremities, one of them is the strength of grip. Thus, the increasing of patient's upper extremity grip strength can improve the function of daily activities using the upper extremity of non-hemorrhagic stroke patients.

The Effect of Salak Seed Sandals to the Foot Sensitivity Level of Diabetes Meletus Patients at Sibela Public Health Center

*Ika Subekti Wulandari, Christin Selyana Putri,
and Nur Rakhmawati
STIKes Kusuma Husada Surakarta, Indonesia*

Diabetes is a metabolic disease characterized by the onset of hyperglycemia because of impaired insulin secretion. Diabetic ulcer is one of the complications of diabetes mellitus in the integument system. The appearance of the diabetic ulcer is characterized by a decrease of foot sensitivity level. In order to prevent a sensitivity decrease, salak seed sandals therapy can be applied. Salak seed sandals are a sandal made from salak seeds using the concept of acupressure

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which can function to smooth blood flow in order to prevent blockage and decrease sensitivity. The purpose of this research is to determine the effect of salak seed sandals to the foot sensitivity level of diabetes mellitus patients. This type of research was quantitative research with a Quasi Experiment design using the Pre and Post Test Non-Equivalent Control Group. The sample selection was done by using purposive sampling method, the sample consisted of 66 respondents who were divided into 2 groups, intervention group as many as 33 respondents and control group as many as 33 respondents. The foot sensitivity was measured by using an observation sheet assessing foot sensitivity. The result of the research using the Mann Whitney test showed that the p value was 0.001 ($p < 0.05$). The conclusion of this research shows that there is an effect of salak seed sandals to the foot sensitivity level of diabetes mellitus patients at Sibela Public Health Center working area.

The Persistence and Perspectives of “Bohot”: A Traditional Medicine Practiced in Liloan, Southern Leyte

Max Teody T. Quimilat

Southern Leyte State University, Philippines

Medicinal plants have been a part of local health care even during the times of our ancestors. Several utilization of these plants through indigenous knowledge practices varies from different localities. This study exposes the persistence and the different perspectives of a tobacco based traditional medicine called “bohot” in Liloan, Southern Leyte, Philippines. A number of 200 Surveys, eight in-depth interviews and participant observation were utilized to capture a holistic view of the ethno-medicinal practice. Results showed that it has persisted because it is effective, non-costly and does not contradicts religious views. The study recommends, however, that “bohot” could stand to complement western medicine practice, more studies of the same kind should be pursued and towards a creation of a learning material.

Training Factors Affecting Pattern of Use of the RxBox 100 in Pilot Rural Health Units in the Province of Iloilo

Aretha Gacutan-Liwag

West Visayas State University, Philippines

The RxBox 100 is a medical grade telemedicine device with integrated physiologic sensors recording physiologic parameters of patients. The sensors are bundled with the Community Health Information Tracking System (CHITS), an electronic health record application. The RxBox is envisioned to supplement healthcare delivery in rural health units in geographically isolated and disadvantaged areas (GIDA). This study aims to determine training factors affecting training effectiveness in the eight (8) pilot RHU implementers of the RxBox 100. The WVSU as the training hub for the project need to develop a training program for future users of the RxBox 1000 units. This is a descriptive, mixed methods study. All pilot RHU staff were included in the focus group discussions to determine training effectiveness. Training and monitoring reports and onsite data were reviewed, abstracted and collated. Data included a) number of patients registered in CHITS, b) frequency of RxBox sensors (automatic and manually) use, and c) the number of times data generated by the RxBox was utilized in telemedicine. The RHU staff readily used the CHITS as the electronic health record. The presence of RHU birthing centers increased the frequency of RxBox sensors use. Presence of Doctors to the Barrios, NDP nurses and midwives increased use of sphygmomanometer, pulse oximeter and the maternal suite sensors. Ideal RHU set ups supported by LGU provided facilitative behavior, fast processors and internet connections to support the RxBox system. Onsite and booster trainings handled by the RTC increase the use of the RxBox by RHU staff.

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Use of Mobile Text Messaging in Breast Cancer Health Promotion

¹Leodoro J. Labrague, ²Jolo Galabay, and ³Angie Anastacio

¹Sultan Qaboos University, Oman, ²Isabela State University, Philippines and ³St. Paul University, Philippines

Educating women regarding breast cancer and increasing breast self-examination uptake continues to remain a major challenge despite the intensive campaigns. An innovative, cost-effective, and easily customized intervention is needed especially in under – resourced and hard to reach communities. This paper is a report examining the effects of mobile text messaging on women’s knowledge of breast cancer and breast self-examination, breast self-examination self – efficacy, and frequency of breast self-examination. A randomized controlled trial design was used. The study sample consisted of 123 women of reproductive age (63 in the experimental group and 60 in the control group) from two communities in the Philippines during the months of August to September 2018. Three to five short messages were sent to the participants in the experimental group daily for one month, while the control group did not receive the messages. Women who received mobile text messages had higher knowledge of breast cancer ($F = 21.756$, $p = 0.001$) and breast self-examination ($F = 6.776$, $p = 0.010$) than did the control group. However, no significant improvements were seen in the breast self-examination self-efficacy ($F = 1.446$, $p = 0.232$) and frequency of breast self-examination ($F = 3.374$, $p = 0.69$). Mobile text messaging significantly improved the knowledge on breast cancer and breast self-examination among women; however, it did not affect their breast self-examination self-efficacy and frequency. Mobile text messaging can be a viable tool that can be used by healthcare workers in order to educate women regarding breast cancer and breast self-examination.

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Technical Manager: Prof. Genalen M. Pepito		
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Gum Paste Enriched with Seaweed Eucheuma cottonii for Cake Décor	Charess E. Goles	Cebu Normal University, Philippines
Handheld Writing Board	Kim Francis R. Rodriguez	Cebu Normal University, Philippines
Process of Making Dark Chocolate Chip Porridge	Kim Francis R. Rodriguez	Cebu Normal University, Philippines
Process of Producing Gum Paste Enriched with Seaweed Eucheuma cottonii for Cake Décor	Charess E. Goles	Cebu Normal University, Philippines

Gum Paste Enriched with Seaweed Eucheuma cottonii for Cake Décor

Charess E. Goles
Cebu Normal University, Philippines

Disclosed is a gum paste comprising 90% sugar icing, 8% seaweed paste and 2% glucose for cake décor.

Handheld Writing Board

Kim Francis R. Rodriguez
Cebu Normal University, Philippines

Disclosed is a handheld writing board comprising a cardboard having a front surface provided with a plurality of colored grid lines. Said grid lines are preferably alternating blue and red lines suitable for primary learners. A transparent writing sheet is plastic material covering the front surface of said carboard.

Process of Making Dark Chocolate Chip Porridge

Kim Francis R. Rodriguez
Cebu Normal University, Philippines

Disclosed is a process of making dark chocolate porridge comprising the steps of: cooking the rice and water mixture over medium fire; stirring every now and then to avoid charring; boiling the rice until it is soft and fully incorporated to the water; pouring the

dark chocolate chips gradually to the boiling mixture when the mixture is already thick and slimy in consistency; stirring continuously until the chocolate chips are fully dissolved and incorporated to the boiling mixture; adding brown sugar; and serving the dark chocolate porridge with evaporated milk topping.

Process of Producing Gum Paste Enriched with Seaweed Eucheuma cottonii for Cake Décor

Charess E. Goles
Cebu Normal University, Philippines

Disclosed is a process of producing a gum paste enriched with seaweed Eucheuma cottonii for cake décor comprising the weighing of ingredients such as sugar icing, seaweed paste and glucose, combining the 90% sugar icing, 8% seaweed paste and the 2% glucose until it becomes a dough, kneading the dough until it becomes smooth and pliable, flattening the dough into thin sheets and molding the dough into the desired designs.

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<i>Indicators of Asian Achievement in Chemistry: Implications to the Philippine Setting</i>	<i>Joje Mar P. Sanchez</i>	<i>Cebu Normal University, Philippines</i>
<i>Political Dynasty in Public Governance: A Close Encounter with the Cebuanos</i>	<i>Eron Anthony Guarde</i> <i>Rufina C. Rosaroso</i> <i>Fredrich Rama</i> <i>Rolan Batac</i> <i>Gerome L. Lasala</i>	<i>Cebu Normal University, Philippines</i>
<i>The Lambert W Function</i>	¹ <i>István Mező</i> ² <i>Cristina B. Corcino</i> ² <i>Roberto B. Corcino</i> ² <i>Wilson D. Castaneda, Jr.</i>	¹ <i>Nanjing University of Information Science and Technology</i> ² <i>Cebu Normal University, Philippines</i>
<i>The Social Determinants of Under-Five Immunization Services Uptake in the Urban and Rural Areas in Cebu City</i>	<i>Cindy Thuy Duong G.Huynh</i> <i>Gamaliel F. Lumapas</i> <i>Candice A. Macasero</i> <i>Helmina Dale J. Merin</i> <i>Jillian A. Bejoc</i>	<i>Cebu Normal University, Philippines</i>
<i>The Untold Stories Of Childhood To Parenthood</i>	<i>Laurence L. Garcia</i> <i>Ma. Mayla Imelda M. Lapa</i> <i>Joni Inocencia F. Gonzaga</i>	<i>Cebu Normal University, Philippines</i>

Indicators of Asian Achievement in Chemistry: Implications to the Philippine Setting

Joje Mar P. Sanchez
Cebu Normal University, Philippines

This paper aimed to determine the indicators, which could contribute to the Chemistry achievement of selected Asian countries according to the data set provided by the 2015 Trends in Mathematics and Science Survey results. Educational data mining was employed to capture patterns, comparison and correlation among selected Asian countries (Hong Kong, Japan, Malaysia, Singapore, South Korea, Taiwan and Thailand) using TIMSS results in Chemistry and other Science domains achievements, learning resources, school climate, instructional considerations, and student affective aspects. This study found out that the average Chemistry achievement of the Asian countries was significantly higher than the world achievement. Through exploratory analysis, it was revealed that high achievers among the Asian countries have moderate to high perspective towards school climate, instructional considerations and student affective aspects, while those average or low achievers had high perspective towards the said factors. The study concluded that, out of the 15 factors included in the study, nine had positive correlation yet only prior achievement in Science, home educational resources, Science laboratory resources, computer use and prevalence of bullying could significantly determine the achievement of learners in Chemistry. Implica-

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tions on spiral progression, resource allocation, safe, orderly and harmonious environments, and inspiring stories in instruction were derived for application in the Philippine context to maximize and enhance learning in Chemistry.

Political Dynasty in Public Governance: A Close Encounter with the Cebuanos

*Eron Anthony Guardo, Rufina C. Rosaroso,
Fredrich Rama, Rolan Batac, and Gerome L. Lasala
Cebu Normal University, Philippines*

This is a qualitative study which described the existence of political dynasties in Cebu, Philippines. The prevailing issues on political equality and perennial rule of political families were also investigated unfolding the Cebuanos' perceptions of political dynasty and its impact on Cebuano bureaucracy. The method of data analysis used in the study was narrative inquiry where storytelling among the selected key informants served as data collection technique. Purposive sampling was used in the selection of key informant politicians while random sampling for key informant voters was determined. The instruments used in data gathering were interviews and observations. The study revealed the true meaning of political dynasty, its advantages and drawbacks to its constituents. Varied rejoinders and call for democracy motivated the selected key informant politicians to continue serving the citizenry. This study recommends that an anti-individualistic voting preferences campaign be promoted by the government, education and youth sectors in transforming intelligent Filipino voters.

The Lambert W Function

¹István Mező, ²Cristina B. Corcino, ²Roberto B. Corcino,
and ²Wilson D. Castaneda, Jr.

¹Nanjing University of Information Science and Technology and ²Cebu Normal University, Philippines

The Lambert W function is one of the significant transcendental functions which have a remark-

able property arising from diverse scientific problems. This function is defined as the solution of the transcendental equation . In this video, a close analytic solution via this function is presented for the predator-prey model. Moreover, we present a brief description of the Lambert W function and its application as a solution to some problems in different fields.

The Social Determinants of Under-Five Immunization Services Uptake in the Urban and Rural Areas in Cebu City

*Cindy Thuy Duong G. Huynh, Gamaliel F. Lumapas,
Candice A. Macasero, Helmina Dale J. Merin,
and Jillian A. Bejoc
Cebu Normal University, Philippines*

In the Philippines, vaccination has been a major form of health care service given by the government. Social determinants may have an important effect on the utilization of immunization services, although attracting most attention are those of biological, epidemiological, economic and logistical origins. Hence, this study determines the relationship between social determinants and the uptake of under-five immunization services in urban (Carretta and Labangon, Cebu City) and rural (Babag and Busay, Cebu City) areas utilizing quantitative descriptive correlational design. Additionally, significant differences between urban and rural areas' under-five immunization services utilization vis a vis social determinants are also investigated specifically: demographics, awareness on immunization services and attitude towards immunization services. Result shows that there is a significant relationship between the uptake of immunization to age, level of awareness, and attitude of respondents with Pearson R correlation significance of less than 0.05. In conclusion, most respondents in the study are young adults with ages ranging from 20-30 years old with most proactively seeking to have their their children vaccinated. Remarkably, high levels of awareness on immunization programs and excellent

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attitude toward immunization services significantly influence the desire of families to submit their children for the needed vaccinations.

The Untold Stories of Childhood to Parenthood

Laurence L. Garcia, Ma. Mayla Imelda M. Lapa, Joni Inocencia F. Gonzaga
Cebu Normal University, Philippines

Adolescence as a transitory period is a fascinating stage in the life of an individual. Together with this fascination is also the proclivity for experimentation due to peer influence and inherent curiosity, among others which characterizes this era. Thus, as consequence is the occurrence of pregnancy. This study inquired into the phenomenon of teenage pregnancy. Using key informant interview the researchers were able to gleaned into the journey of the teenage parent. The journey revealed a transition from a young girl full of vigor and enthusiasm to young mother who faced with the responsibility of child rearing at a time where she is supposed to grow and flourish.

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<i>Captives of the Mind: Prevalence of Mental Health Problems in Children who are in Conflict with the Law</i>	Lyca Marie Bayo Avriel Grances Bihag Alexa Rae Dunque Christine Joy Hordista Ma. Mayla Imelda M. Lapa	Cebu Normal University, Philippines
<i>Dengue Epidemiology</i>	Edward Laurence L. Opena	Cebu Normal University, Philippines
<i>Hankel Transform of Some Special Numbers and Functions and some of their Applications</i>	Roberto B. Corcino Jay M. Ontolan Gladys Jane S. Rama	Cebu Normal University, Philippines
<i>Panalangin Sa Patay: "Imaginary Transaction"</i>	Catalina M. Canasa Rowena C. Largo Janet A. Mananay	Cebu Normal University, Philippines
<i>The Foreign Students' Intercultural Communicative Experiences</i>	Janet A. Mananay	Cebu Normal University, Philippines

A Validation of a Non-linear Relationship on the Predictors of Violence Against Women (VAW) by Symbolic Regression

Lovelyn G. Tipon and Ernyl Henry E. Redula
Cebu Normal University, Philippines

Violence against women is a global public health problem that has serious adverse effects on women’s physical, mental, and reproductive health. It is increasingly recognized as a public health issue because of the expanding evidence base and growth of research documenting the magnitude and health effects of violence against women. Utilizing the symbolic regression the researcher was able to determine the non-linear relationship of the variables (physical injury and rape case) in the total incidence rate of violence against women across the globe. It also shows which among the predictors greatly affect the high incidence rate of violence to its total number of violence.

Captives of the Mind: Prevalence of Mental Health Problems in Children who are in Conflict with the Law

Lyca Marie Bayo, Avriel Grances Bihag, Alexa Rae Dunque, Christine Joy Hordista, and Ma. Mayla Imelda M. Lapa
Cebu Normal University, Philippines

Juvenile delinquency has always been a social problem over and above the fact that it’s a legal prolem. This study serves as the basis for the planning of future interventions on how to properly handle and care for these children. And for all of us to realize and make mental health a reality. This study utilizes descriptive comparative design. This aims to find out the differences of seemingly similar objects. Thus this is used to describe and explain the invariance of the subjects. Standardized mental health tools were distributed to detained respondents who are 18 years of age and below. The data gathered was then given to the licensed psychometrician and statistician for further interpretation. The



INFOGRAPHIC

results of the study show that the top 3 most prevalent mental health problems that these children suffer from are depression (26%), psychosis (24%), and bipolar (23%). Mental health problems are indeed present among the children in conflict with the law detained at operation second chance center and my hope rehabilitation center. Depression is the most prevalent among the mental health problem assessed. There's also a significant difference between the percentages of anxiety, bipolar, PTSD, and addiction of the foreign and local group. Depression and psychosis remained the same for both of the environments.

Dengue Epidemiology

Edward Laurence L. Opena
Cebu Normal University, Philippines

Dengue fevers are some of the most prevalent viral diseases in Metro Cebu which includes the city of Lapu-Lapu. This infographic presents some of the details of the epidemiology of dengue fevers in the aforementioned locality that were admitted in two hospitals from 2008-2013. Results showed 85% of the total admission is dengue fever (15% is dengue hemorrhagic fever and dengue shock syndrome). Further, the year 2011 showed the highest admission. The second half of the year (July-December) tallied the highest number of cases. Lastly, there are more male that were admitted in the covered period. The continuous monitoring of the dengue fever cases from 2014 onwards is the primary recommendation of the study.

Hankel Transform of Some Special Numbers and Functions and Some of their Applications

Roberto B. Corcino, Jay M. Ontolan, and
Gladys Jane S. Rama
Cebu Normal University, Philippines

Finite Hankel transforms and the corresponding infinite series are introduced. The Hankel transform arises naturally in the discussion of problems posed in cylindrical coordinates and hence, as a result of separation of variables, involving Bessel functions. So, it has found wide range of applications related to the problems in mathematical physics. The method introduced in this presentation involves Hankel matrix and Hankel determinants.

Panalangin sa Patay: "Imaginary Transaction"

Catalina M. Canasa, Rowena C. Largo, at Janet A. Mananay
Cebu Normal University, Philippines

Ang pagdarasal sa mga patay ay bahagi na ng kultura nating mga Pilipino, ngunit higit sa lahat ng mga Cebuano. Ang pagtuklas sa pinanggalingan ng tradisyong ito ay malaking bagay upang maunawaan ang nangyayari sa kasalukuyan at masagot ang agam-agam kung paano ito nagsimula at ano ang nagtulak upang ito'y patuloy na ginagawa. Malalim man ang ugat ng pinagmulang ito, ngunit makikita mo ang lalim ng pinaghuhugutan ng pananampalataya ng mga tao. Inalam sa pag-aaral ang imaginary transaction sa panalangin sa patay na nakasulat sa teksto at ang imaginary transaction ng mga taong nagdarasal gamit ang teksto. Content analysis and metodolohiyang ginamit sa pag-aaral. Sa pamamagitan ng pag-susuri sa nilalaman ng mga datos na nakalap mula sa panalangin sa mga patay na nasa teksto gamit ang Content Analysis na may tatlong dulog: ang kumbensiyunal (conventional), direktiba (directive) o paglalagom (summative). Lumabas sa pag-aaral na magkapareho ang mensaheng nais iparating ng teksto sa pinag-uukulan ng dasal at ang mensaheng nais iparating ng mga nagdarasal at nagpapadasal. Ngunit sa kabila na sila ay magkatulad ng mensahe sa kanilang idinadasal nagdulot naman ito ng kakaibang paniniwala na hindi namang tahasang ibinanggit sa teksto, ngunit naranasan ng mga taong nagdarasal at nagpapadasal. Lumalabas sa pag-aaral na ang imaginary transaction na bunga ng imahinasyon ng isip ng mga nagdarasal ay pinagtibay ng pananampalataya sa pinag-uukulan na hindi naman nakikita. Sa kabilang banda, makikita ang likas na pagkamapaniwalaing ng mga Cebuano na hindi naman lantad na nabanggit sa tekstong nabasa. Samakatuwid, may ibang nagaganap na imaginary transaction sa taong nagdarasal at nagpapadasal na taliwas sa nababanggit sa nakasulat na teksto. Dahil dito nagkaroon ng konklusiyong ang imaginary transaction na nagaganap sa mga nagdarasal at nagpapadasal ay may kinalaman sa aktwal na karanasan nito na naging sanhi ng kanyang patuloy na pagdarasal. Ang pagiging mapaniwalain, masunurin at ang matibay na pananampalataya ng mga Cebuano ang siyang nagtulak sa kanila na ipagpatuloy ang tradisyong nasimulan na at naging bahagi na ng kanilang kultura.

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The Foreign Students’ Intercultural Communicative Experiences

Janet A. Mananay
Cebu Normal University, Philippines

This study analyzed and explored the lived experiences of the foreign students in the higher education in their intercultural communications. Employing Hursserlian qualitative design in phenomenological studies and Colaizzi’s 7 steps in data analysis, this study made use of in-depth interview to extract quality data. The foreign students who were the informants of the study have shared candidly their sojourn in the Philippines as regular college students in Southwestern University- PHINMA. Generally, their over-all experiences during their pre and actual sojourn were more on their acknowledgement of cultural differences, adjustments and understanding and how they have coped with the challenges of being in a foreign land especially in terms of expression and communication. Thus, the study came up with 3 significant themes: (1) I love it here, (2) I adjust to cultural differences, and (3) I am never the same person. Based on the data and the organized themes, three propositions were formulated (1) Positive environment leads to ease in communication, (2) Adapting to different cultures requires space and time, and (3) Personal transformations entail motivation, determination and improved perspectives and value of self.

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The CNU Festival on Innovations in Research 2019 (CNU FIRe 2019)

"Complexity and Adaptation in the Era of the Fourth Industrial Revolution"

17-19 OCTOBER 2019

CEBU NORMAL UNIVERSITY



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- ♦ **Culture, Arts and Governance**
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- ♦ **Health Promotions and Innovations**

