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# SCIENCE

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## **Detoxifying Properties of *Peperomia pelucida* (Pansit Pansitan)**

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(Adviser: Mark Anthony Rellores)

### **Abstract**

#### **INTRODUCTION**

The influence of career choice has a lasting impact on an individual. It serves to be a settling factor or determinant of their prospective level of salary, nature of work and outlook to one's personality, thus one wrong decision can change the fate of an individual. Choosing a career does not only have a great effect on an individual but also to the country it lives to as it is connected to the economic prosperity of a nation. In this study, Pansit-partisan or *Peperomia pellucida* were tested if it has the detoxifying ability.

#### **METHODS**

There are nine (9) set-ups that were prepared to test the study, set-ups number 1 to 3 have the leaves of the pansit- pansitan, set-ups 4 to 6 have the stem, and set-ups 7 to 9 have the root part of the plant. Set-ups 1, 4, and 7 were placed to extreme temperature; direct sunlight, set-ups 2, 5, and 8 were placed to room temperature; indirect sunlight, and set-ups 3, 6, and 9 were placed to room temperature; without sunlight.

#### **RESULTS**

After preparing the set-ups, the researcher then waited for two (2) days before testing the pH level of the vinegar and water solution that serves as the acidic water that has a pH level of three which is acidic. Set-ups 1 to 3 yielded to a pH level ranging from 3.1 to 3.4, while set-ups 4 to 6 have a pH level ranging from 3.6 to four and the set-ups 7 to 9 resulted to pH level ranging from 4 to 5. As the acidity level of the set-ups after two days, the root part of pansit-pansitan was the best part to detoxify acidic water.

#### **DISCUSSIONS**

The results proved that *Peperomia pellucia* (Pansitan-pansitan) exhibits detoxifying property, the root part to state best. Based on the table of results, the root part of the said plant, in room temperature with no direct sunlight, gave the best result as its roots developed dark spots that indicated the absorption of water impurities. Hence, the effectivity of the detoxifying properties of *Peperomia pellucia* Linn (Panist-pansitan) can be affected by the temperature, amount of sunlight and amount to be detoxified.

**KEYWORDS:** detox properties, acidic water, pansit-pansitan, ph level, antibacterial, antioxidant

**SUBMISSION ID: R04A-CAVITP-0353**

## **"Kutingting Ko, Adal Ko" in the Mastery Level of Grade V Science Least Learned Competencies**

Maryjane Bayeng, Department of Education CAR

### **Abstract**

#### **INTRODUCTION**

The action research used "Kutingting Ko Adal Ko" as an intervention to improve the mastery level of grade V learners in the identified least learned competencies in Science. The researcher made manipulative materials to use along with worksheets on the following competencies: describe the function of the parts of the human reproductive system; explain the menstrual cycle; describe the mode of reproduction in animals and describe the parts and function of the reproductive organs of plants.

#### **METHODS**

The study made use of the mixed research design specifically the explanatory. The researcher utilized the cognitive test results and survey questionnaire to gather pertinent data in the study, back up with interviews. Total enumeration is at the same time utilized where the 32 grade V learners of Suyoc Elementary School for the school year 2017-2018 were the participants of the study. The criteria set by NETRC in evaluating results were utilized to analyzed results.

#### **RESULTS**

The pre-test competency level of the grade V learners in the aforementioned Science least learned competencies is 13.80% with a descriptive rating of very low. Learners have limited knowledge on the competencies. It shows that learners are not familiar with the parts and functions of each part of the reproductive system of human, animals, and plants.

The post-test competency level of the grade V learners has notably raised to 88.23% with a descriptive rating of close approximate mastery. It shows great improvements in the performance of the learners after the introduction of the intervention.

The use of manipulative model along with worksheets had improved the performance and mastery level of the learners.

#### **DISCUSSIONS**

The results provided information about the amount of learning that had taken place. It assessed the effectiveness of instructional materials, methods, and strategies used to address the least learned competencies. The intervention "Kutingting Ko, Adal ko" which made use of teacher-made manipulative models with worksheets is an effective way of improving learners' performances and attitudes towards learning. Further, it provided opportunities for the pupils to have an idea of intangible through tangible things and a better understanding of the lessons and retention of knowledge and processes. Learners, when given opportunities to discover learning through exposure to appropriate instructional materials, will bring positive outcomes.

**KEYWORDS:** Manipulative, teacher-made, least learned competencies, intervention

**SUBMISSION ID:** CAR1-BENGUE-0000



## **Versatility Of Pomelo (Citrus Maxima) Peeling**

Ugat, Jeanelene C., Laguna Senior High School

### **Abstract**

#### **INTRODUCTION**

Waste disposal has become the main concern of the society today. The waste generation increases in proportion to the rise in population and urbanization. The focus of the research is to investigate and develop a product such as box, picture frame and cup holder from the Pomelo (*Citrus maxima*) peelings. The researcher find ways on how these wastes can be turned into more useful products to make it more valuable. This study will help Filipinos especially those in the agricultural and marketing sector to realize that pomelo peelings can be used in various purposes. This in particular will contribute to minimize at least if not to eradicate the adverse effect of the increasing amount of waste.

#### **METHODS**

Experimental and descriptive methods of research were used in the study. Purposive Sampling is the technique used to 30 evaluators composed of ten (10) Science teachers, ten (10) office workers of Pedro Guevara Memorial National High School, and ten (10) manufacturers. Rating scale was used to determine the evaluation of the respondents based on the sensory qualities of the products. The data were tallied, tabulated, and statistically treated using weighted mean, standard deviation, p-value, and Scheffe method.

#### **RESULTS**

The study revealed that the (3) three products in terms of appearance was rated as highly acceptable and acceptable by the group of evaluators. While in terms of durability, the products were rated highly acceptable and acceptable by respective groups of respondents. For being environmentally friendly, the pomelo peel products were rated as highly acceptable among Science teachers and acceptable by the office workers. When it comes to functionality, the pomelo peel products were highly acceptable to both science teachers and office workers and acceptable among manufactures. In terms of texture, the by-products was rated both Science teachers and office workers as highly acceptable and acceptable among the manufacturers. The significant difference on the level of acceptability of pomelo peeling products in terms of its sensory qualities as rated by Science teachers, office workers, and manufacturers were found to be different. The results showed that the Test of Analysis of Variance (ANOVA) permits the researcher to reject the null hypothesis.

#### **DISCUSSIONS**

The results suggested that Pomelo peeling was effective in making peel box, picture frame and cup holder. It was also recommended that modification of the method in making pomelo (*Citrus maxima*) peel box, picture frame and cup holder specifically increase the amount of water if thin paperboard is desired while for thicker paperboard, less water is necessary. Enhance the sensory qualities of the product by improving the texture by adding binders like waste paper to make it also more durable.

**KEYWORDS:** Pomelo Peelings, Cup Holder, Picture Frame, Box

**SUBMISSION ID: R04A-LAGUNA-0424**

## **The Comparison and Effectiveness of Fermented Plant Juice and Fermented Fruit Juice versus Commercial Fertilizer on the Growth and Fruition of Eggplant**

Anjeannette M. Gonzaga, Malandag NHS

### **Abstract**

#### **INTRODUCTION**

A global population began to show rapidly. Thus, the need for those sustainable farm practices scared only towards fields but additional pressure of growth. The organic agriculture method is believed to be more environmentally control that intensive agriculture which is dependent on the routing use. This study focuses on the determination of the effectiveness of fermented plant juice (FPJ) and fermented fruit juice (FFJ) to vegetables specifically in eggplant (*Solanum melongena*) in contrast to commercial fertilizers found in the market as one of the most common practice of local farmers in the area.

#### **METHODS**

This study is a quasi-experimental research to determine the effectiveness of fermented plant juice and Fermented Fruit Juice on growth and fruition of eggplant. In the experiment, a split-plot design was used with two treatments and one control replicated three times. Data gathered in this study was analyzed using the mean, two-way analysis of variance with replication and T-test.

#### **RESULTS**

Based on the variation of samples, the study shows that there is a significant difference between the growth of eggplants. Based on the variation of time by week, it also shows significant differences with respect to the growth of the plant. This means that by using the organic fertilizer (FPJ) there is a positive and advantageous impact to the growth of the plant with respect to time. There are interactions or difference in the control response over the 3 weeks compared to the treatment response over the 3 weeks. Moreover, in terms of the fruit of the eggplant, the application of FFJ shows higher percentage of yield and vibrant appearance. The treated plants with FFJ produced early flowers as early as 4 weeks than the other experiments since the usual harvest time of eggplant was 16 to 24 weeks from sowing. It was also observed that the organic treated plants pest resistance was highly noted. This concludes that the use of organic concoctions significantly differs and most beneficial from the usual practice of growing eggplant.

#### **DISCUSSIONS**

The results demonstrates the effectiveness of organic fertilizers such as fermented plant juice (FPJ) and fermented fruit juice (FFJ) to vegetables specifically in eggplant (*Solanum melongena*) in contrast to commercial fertilizers. There is a significant difference between the growth of eggplants and its fruit production with respect to time, labor of work and budget wise. This study is similar to Alam, Md. Amirul. (2017). Which states that the treated plants with FPJ and FFJ produced early flowers and fruits compared to untreated plants due to the enhanced production auxin and essential nutrients. This research may provide additional literature on the importance of organic concoctions and extracts as natural farming and ensuring future sustainable eco-friendly agriculture practices.

**KEYWORDS:** Sustainable farm practices, organic agriculture, intensive agriculture, effectiveness of fermented plant juice and fermented fruit juice, eggplant, *Solanum melongena*, fertilizers, farmers

**SUBMISSION ID: R012-SARANG-0201**

## **Snake Plant (*Sansevieria Trifasciata*) Fiber As Alternative Matting In Making Fiberglass**

Cabral, Arnie B., Laguna Senior High School

### **Abstract**

### **INTRODUCTION**

The growing environmental awareness led to the insight on the use of natural fibers as a sustainable alternative in the composite industry. Continuous research and development in the reinforcement of natural fibers in making composites like fiberglass panels is at its highest trend for engineers and researchers. All of these are for the goal of producing a cost effective with acceptable mechanical properties natural fibers reinforced composites. With the same objective, in this study, the researcher utilized the snake plant (*Sansevieria trifasciata*) fibers as alternative matting in making fiberglass panels for different industrial application.

### **METHODS**

The researcher used descriptive and experimental research design in constructing the product, conducting the quality testing, testing the hypothesis and systematically analyzing the data gathered from the ratings of 30 respondents composed of teachers, parents and fiberglass makers from Sta. Cruz and Pagsanjan, Laguna. The statistical tools used were the weighted mean, standard deviation, and ANOVA (F test).

### **RESULTS**

In terms of the Moisture Expansion Test, samples had increased its dimensions with an average percentage of 2.78 %. With regard to the thickness-swelling test of the product, samples increased their dimensions with an average value of 0.83 %. The water Absorption Test of Snake Plant Fiberglass gave the water absorption percentage of the samples an average percentage of 0.22%. The results indicated that the product was water resistant as it can only absorb very little amount of water for a day. However impact test results for snake plant fiberglass suggested that the product could withstand greater forces as the data yields that with 2.75 lbs, 4.96 lbs and 6.61 lbs, recorded descriptions are "no damage", "slightly deformed", "deformed" , and "having a crack" . With regard to the buckling point, it was recorded that the product could withstand loads until 250 N before it buckled. It was also found out that there was no significant difference among the ratings made by teachers, parents, and fiberglass makers on the acceptability of Snake Plant Fiberglass in terms of quality, while there was a significant difference on the acceptability of Snake Plant Fiberglass in terms of strength and durability.

### **DISCUSSIONS**

The results suggested that Snake Plant Fiber, which served as alternative matting in making fiberglass, have various uses aside from the focus of this study. The product could be used as construction materials such as decorative tiles, windowpanes etc. Snake plant fiberglass could also be used as alternative materials in making boats, ships, aeronautic materials and the like which uses fiberglass. Researchers were encouraged to use organic materials other than snake plant fiber as reinforcement on such materials.

**KEYWORDS:** Snake plant, Composites, Fiberglass, Fibers, Matting

**SUBMISSION ID: R04A-LAGUNA-0422**

## **Production of Biodegradable Plastic from Biga (*Alocasia macrorrhizos*) Tuber Starch**

Clieza Mae Remas, Keziah Joy A. Gallarde, & Lore Grace L. Masiad, Glan Padidu NHS

### **Abstract**

### **INTRODUCTION**

Each year, about 500 billion plastic bags are utilized globally. The improvement of short-lived biodegradable plastic is realized as a major objective and so the usage of starch as a natural, raw material for degradable thermoplastics is seen as an important goal (Karimi et al., 2014). The increase in the productivity of agricultural products caused an increase in the deposition of "Biga" tubers wastes in the locality of Glan. This can be considered as bio-waste products of the industry. Aside from utilizing "biga" as chips, no other products were made out of biga tubers. From the aforementioned issues above, the researchers aimed to investigate the potential of biga (*Alocasia macrorrhizos*) tubers starch as biodegradable plastic. In addition, it aimed to compare significant differences between biga bio plastic and the commercially produced plastic in terms of flammability, biodegradability, and tensile strength.

### **METHODS**

The researchers collected biga (*Alocasia macrorrhizos*) tuber in one of the researchers' backyard where it is found available. The biga (*Alocasia macrorrhizos*) tuber was then peeled and washed off with distilled water. It was then subjected for starch production. After starch was obtained from the biga (*Alocasia macrorrhizos*) tuber, the samples underwent flammability test, tensile strength, and biodegradability test.

### **RESULTS**

For the flammability testing, it obtained a mean average of 130.66s. While for the biodegradability test, it obtained 1.03g as the mean average of the change in mass. These results were subjected to t - test to find out if there is a significant difference between the commercial bio plastics and the biodegradable plastics from biga (*Alocasia macrorrhizos*) tuber. The result of t - test indicates that there is a significant difference because the P is lesser than ( $P < 0.05$ ). However, for the tensile strength testing, it obtained a p - value of 0.37, which is greater than 0.05. Result indicates that it has no significant difference between the commercial one when results were analyzed using t - test.

### **DISCUSSIONS**

(*Alocasia macrorrhizos*) tuber starch has high potentials in terms of these two tests associated to the commercial bio plastics. Nevertheless, tensile strength test conducted obtained no significant difference between the experimental and the control group. Still, biga (*Alocasia macrorrhizos*) tuber starch may be a potential material for biodegradable plastics. Because of the limitations being set in this study, this research urges future researchers to test for the resistivity to check for the electrical resistance potentials of biga (*Alocasia macrorrhizos*) tuber starch. Thus, it is recommended to conduct clarity test for the samples also. Practicability test should be conducted to compare its practicality with that of commercial biodegradable plastics. Lastly, development processes to produce plastic bags from biga (*Alocasia macrorrhizos*) tuber starch should be studied.

**KEYWORDS:** Biodegradable Plastic, Biga Tuber Starch, *Alocasia macrorrhizos*, plastic bags

**SUBMISSION ID: R012-SARANG-0203**

**Phytochemical and Sun Protection Investigation of *Hibiscus rosasinensis***

Hanah Collado, Malungon NHS

**Abstract**

**INTRODUCTION**

Phytochemical investigation of the plants is critical commercially and has incredible enthusiasm for pharmaceutical organizations for the creation of the new product. The main objective of this investigation was to analyze the presence or absence of different phytochemicals in *Hibiscus rosa-sinensis* that can be used for skin protection.

**METHODS**

The method used in the research design of the study was experimental analysis. Phytochemical analysis was conducted to assure the presence of skin protection agent.

**RESULTS**

The result shows that out of five tested compounds during the phytochemical analysis, only two were found present in *Hibiscus rosa-sinensis*; the steroids and flavonoids (anthocyanin). While the remaining compounds like alkaloids, saponins, and tannins were found negative.

**DISCUSSIONS**

Base on the results of the study, it shows that *Hibiscus rosa-sinensis* contains anthocyanin, a type of flavonoid with antioxidant effects. In addition to acting as antioxidants and fighting free radicals, anthocyanins may also offer anti-inflammatory, anti-viral, and anti-cancer benefits (Wong 2019). For recommendations, the researcher recommended an SPF test for the lotion that will be made out of pure hibiscus extract. This is to see the effectiveness of the product as sunblock lotion.

**KEYWORDS:** Phytochemical, plants, pharmaceutical, skin protection, *Hibiscus rosa-sinensis*

**SUBMISSION ID: R012-SARANG-0199**

## **Pesticidal Property of Siam Weed Leaves (*Chromolaena odorata*) on Houseflies (*Musca domestica*)**

Abegail Alfar, Banate NHS

### **Abstract**

#### **INTRODUCTION**

Houseflies are some of the hated and the most problem pests in the Philippines because they could transmit bacteria and disease to the local citizens. Siam weed (*Chromolaena odorata*) locally known as hagonoy or hagonoi is a highly invasive plant species which is poorly studied in spite of the fact that it's hard to eradicate, a nuisance in plantations and known to harm agriculture farm and commercial plantations. It contains bioactive chemicals suitable and alternative biocontrol substance and also contain phytochemicals that serve as repellent or may kill insects. In this study, we extracted the Siam weed leaves and create a solution to minimize this problem since there is no existing alternative in the locality.

#### **METHODS**

An experimental method was used to test the pesticidal properties of Siam weeds leaf. Three trials were conducted to three treatments to test the effectivity of Siam Weed leaves extract. The same amount of solution was measured and houseflies were tested during the trials on Baygon (Positive control), Siam Weed (Experimental group) and water (Negative control).

#### **RESULTS**

Two treatments had an effect in eradicating the insects. In terms of the time survival of houseflies, they have different results. However, tap water treatment indicated no effect.

#### **DISCUSSIONS**

**KEYWORDS:** There is a significant effect on the trials applied using the extract of Siam Weed leaf on houseflies. It implies that it can be an alternative pesticide. It is more convenient since it is available in our surroundings, less expensive and organic.

**SUBMISSION ID: R012-SARANG-0208**

## **Patchouli (Pogostemon cablin Blanco) Oil-Based Products as Housefly Repellent**

Leonardo, Janice Joy P., Laguna Senior High School

### **Abstract**

#### **INTRODUCTION**

Vector-borne diseases rely upon most of the insects. Because of this, commercial insecticides and repellents in any forms are readily available in the market. However, use of synthetic chemical may also affect the person exposed to it. Therefore, use of organic material that has an ability to repel insects specifically housefly is the outmost concern of this study. This study aimed to determine the acceptability of Patchouli (Pogostemon cablin Blanco) Oil-Based Products as Housefly Repellent in terms of number of housefly repelled at a given reaction time, duration of efficiency, odor and functionality.

#### **METHODS**

The study employed experimental research design in developing and testing the acceptability of Patchouli (Pogostemon cablin Blanco) Oil-Based Products as Housefly Repellent in terms of number of housefly repelled at a given reaction time and duration of efficiency. Bioassay testing was used to test the repellency activity of Patchouli Oil-based products. The gathered data were treated using Analysis of Variance (ANOVA). Whereas, the descriptive research design was utilized to determine the acceptability of these products in terms of odor and functionality. The data gathered were treated using Mean and Standard Deviation.

#### **RESULTS**

Bioassay test showed that electric mat has the highest housefly repellency activity followed by oil burner, candle, reed diffuser, and essential oil. Spatial repellent devices using heat source repel housefly instantly however they evaporate faster. With respect to duration of efficiency, Patchouli essential oil, reed diffuser, electric mat, and candle last longer compared to oil burner. This conformed the above results that concentrated oil with direct contact to heat diffused faster. In addition, the duration of efficiency depends on substance and type of diffuser to be used. The higher temperature and concentration of substance have higher rate of diffusion. Because of this, Patchouli Oil-based products were very acceptable in terms of odor and functionality. They have the ability to repel housefly with no irritating smell and harmful chemicals that might harm human and even animals exposed to it.

#### **DISCUSSIONS**

Based on the findings, Patchouli (Pogostemon cablin Blanco) showed repellency to housefly. Spatial devices using source of heat and concentrated substance diffuses faster. This resulted to repel more houseflies. Therefore, research hypothesis, which states that there is no significant difference in the acceptability of the Patchouli (Pogostemon cablin Blanco) oil-based products as housefly repellent in terms of number of housefly repelled at a given reaction time, duration of efficiency, odor, and functionality was partially sustained.

**KEYWORDS:** Patchouli, Oil-based products, housefly repellent

**SUBMISSION ID: R04A-LAGUNA-0425**

## **Papaya Body Scrub**

Bartolome, Marites B., Gov. Felicisimo T. Sanluis Integrated Senior High School

### **Abstract**

#### **INTRODUCTION**

In the Eastern world, a century-long tradition exists whereby a light complexion is regarded as equivalent to youth and beauty. Therefore, the development of preparations for bleaching or to safely achieve overall whitening is one of the challenges for the cosmetic industry influencing other countries including the Philippines as well. This is why, in recent years, the interest in skin whitening has grown tremendously. Nowadays, skin whitening products are on the rage in the market. While glutathione is gaining more and more popularity, a lot of people still go for products with papaya extracts because it is rich in papain. An enzyme that is good for exfoliating dead skin cells. This study focused on the development and acceptability of papaya body scrub since it is a good source of papain extract that whitens and exfoliate the skin. In addition, papaya has always been abundant and readily available in the country, thus, makes it easier to collect for use.

#### **METHODS**

This study was anchored on several theories. One theory that would best support this research paper was the Production theory and the Theory of Inventive Problem Solving with a goal of establishing desired characteristics and gathering proof about the level acceptability of papaya body scrub from the respondents composed of 45 randomly selected individuals to assess the product; hence, the relationship among variables was determined, described, and further analyzed.

#### **RESULTS**

Results showed that there was a significant difference on the ratings of the TLE teachers, spa staff, and housewives on the acceptability of the papaya body scrub in terms of texture, appearance, and color. However, it was found that TLE teachers, spa staff, and housewives gave similar ratings on the aroma and exfoliating property of the papaya scrub.

#### **DISCUSSIONS**

The null hypothesis stating that there is no significant difference on the assessment made by the three groups of respondents was partially accepted. The researcher recommended the following that the families and consumers to try using the papaya body scrub as an alternative to commercial body scrub products. The product can be enhanced through advance research and study that would eventually lead to the improvement of its quality. Trade of Industry approval should be considered to legally advertise the product. Local government such as community organizations can use the papaya body scrub as a profitable product for small business within the community. And future studies can be done along this line considering herbal components of other whitening products using the same ingredient.

**KEYWORDS:** Commercial Body Scrub, Acceptability, Production, Inventive Problem Solving

**SUBMISSION ID: R04A-LAGUNA-0458**



## **Microbial Communities with Lagbasan Cave Speleothems**

Chryselle Cameros & Justin Flores, Department of Education - Sarangani

### **Abstract**

#### **INTRODUCTION**

An inventory of speleothems and the bacterial community associated with the different types of speleothems was carried out in Lagbasan Cave.

#### **METHODS**

Seven sampling stations inside the cave based on unique geologic formations were established where three soil samples, two rock samples, one water sample and one calcite powder sample were collected. Cultivation technique was used to isolate and characterize bacteria morphologically, culturally and biochemically based on the BIO ID Kit. Stalagmites, stalactites, cave corals, splattermittes, dog tooth, flowstones, draperies, straws, helictites, and needlemites formations were found inside the cave. Among all the formations found inside Lagbasan Cave, splattermittes, stalactites and stalagmites were the dominant formations.

#### **RESULTS**

From the seven samples, a total of eleven bacterial species were isolated. The three soil samples have bacterial species that may belong to *Moraxella* spp, *Alcaligenes* spp and *Streptobacillus* spp. The two rock samples which are part of the stalagmites have bacteria possibly belonging to *Streptobacillus* ssp, *Bacillus* spp, and *Moraxella* spp. The water sample from drippings of stalactites may have bacteria from *Pseudomonas* and *Enterobacter* spp. The calcite powder may contain bacteria from *Streptobacillus* and *Enterobacter* spp. Bacterial load of three soil samples was also calculated. Soil sample 1 has an average bacterial population of  $5.835 \times 10^5$ , soil sample 2 has an average of  $4.45 \times 10^5$  and soil sample 3 has an average of  $2.81 \times 10^5$ .

#### **DISCUSSIONS**

The values imply the average bacterial population of the three soil sample. The majority of the bacterial species were gram-negative, motile, can ferment glucose, catalase positive, and are facultative anaerobes.

**KEYWORDS:** Microbial communities, cave speleothems, stalactites, stalagmites, Lagbasan Cave

**SUBMISSION ID: R012-SARANG-0087/ R012-SARANG-0212**

## **Luffa Dalandan (Citrus Aurantium) Bath Soap**

Alano, Mellany S., Gov. Felicisimo T. Sanluis Integrated Senior High School

### **Abstract**

#### **INTRODUCTION**

This study was conducted for the school year 2016-2017 and focused mainly on Luffa Daladan (citrus aurantium) bath Soap. The respondents of the study were fifteen (15) selected Senior High School students, fifteen (15) selected faculty members of Pila Senior High School, Pila, Laguna and fifteen (15) housewives of Brgy. Bliss Patimbao Santa Cruz, Laguna for a total of 45 respondents.

#### **METHODS**

The processed used in making caustic soap are: preparing, measuring, extracting, mixing, molding, finishing and packaging while in glycerin soap are: the preparing, measuring, extracting, melting, mixing, molding, finishing, and packaging.

#### **RESULTS**

The level of acceptability of luffa dalandan (citrus aurantium) bath soap in caustic solution and glycerin solution in terms of texture, odor, appearance, color, the safety of use and antifungal property. There was a significant difference on the ratings on an appearance on the glycerin solution as perceived by the teacher's respondents obtain a mean score of 4.44ab. as for the housewives on the other hand rated 4.71a and students 4.02b with an F ratio of 5.798 and p-value of 0.006 which is "Significant" by the three groups of respondents. The appearance of the glycerin soap is significant because it looks like a transparent soap. The materials used to produce luffa dalandan bath soap in caustic soap are: caustic soda, coconut oil, luffa, dalandan extract while in glycerin soap are: glycerin bar, luffa, extracted dalandan juice, citrus oil. The result showed that there is no significant difference in the ratings given by the three groups of respondents as to its appearance, texture, odor, color, the safety of use and antifungal property of caustic and glycerine soap.

#### **DISCUSSIONS**

Based on the conclusion and findings of the study the following are hereby recommended that the family members and all persons having a fungal infection may use luffa dalandan (citrus aurantium) bath soap. Further researchers may use this as their reference when doing another research about luffa dalandan (citrus aurantium) bath soap. People may plant dalandan tress and patola in their backyards: it will be of great use to them not only as bath soap but many great uses as well. Future researchers may conduct another experiment using another raw material available in their community as substitute to dalandan bath soap with the help of DOST.

**KEYWORDS:** Sanofication, caustic soda (lye), glycerin, innovation

**SUBMISSION ID: R04A-LAGUNA-0439**

## **Lanzo-Neem Mosquito Coil**

Ganggay, Chelo P., Pagsawitan Elementary School  
(Adviser: Cambel, Aimee V.)

### **Abstract**

#### **INTRODUCTION**

This study aimed to test the effectiveness of Lanzo-Neem mosquito coil as alternative repellent that can replace the commercial branded coil. Specifically, it aimed to answer the following questions: (1) What is the level of acceptability of the Lanzo-Neem mosquito coil as perceived by the respondents in terms of burn quality and odor? (2) How many mosquitoes became slumberous and lifeless within the following time interval: 15 minutes, 30 minutes, 45 minutes? (3) Do the proportion and time duration affect the mortality rate? (4) Is there a significant difference in the level of acceptability between the Lanzo-Neem Mosquito Coil and the commercialized brands?

#### **METHODS**

The instrument used in this study was the Randomized Complete Blocking Design (RCBD). The experimental method was used to determine the feasibility of Lanzo-Neem mosquito coil with respect to the mortality rate in the given elapsed time as applied to mosquito wrigglers. This experimental method validated the effectiveness of Lanzo-Neem mosquito coil in terms of different criteria. The questionnaire served as the main source of data with 20 respondents. After the retrieval of the answer sheets, the data were tabulated and analyzed.

#### **RESULTS**

Based on the gathered data, the mean level of Lanzo-Neem mosquito coil was "very acceptable" as revealed by the computed mean of every criterion. In terms of mortality rate, a number of mosquitoes became slumberous and lifeless. There is no significant difference in the level of acceptability between the two coils in terms of effectiveness. Lanzo-Neem mosquito coil is also organic that can be used as an alternative to commercialized brands. Therefore, there is no significant effect between the two coils in terms of burning time, odor and effectiveness.

#### **DISCUSSIONS**

Everybody is encouraged to use this product to save money because this alternative mosquito coil is cheaper and the materials are available in the locality. Other researchers should develop products from available resources in the community like the making of mosquito coils from the Lanzones peels and Neem leaves which are also proven effective in repelling mosquitoes. Farmers should cultivate insect-repelling plants in their backyard like Neem trees not only for protection against mosquitoes but at the same time to provide them with additional income. Medical manufacturers should produce insect-repellents that are plant-based or natural for the consumer's safety which are cheaper than the branded products. Future researches will be conducted by the proponent to improve this investigatory project for the local government to support its production.

**KEYWORDS:** Lanzones peels Neem leaves mosquito repellent invention

**SUBMISSION ID: R04A-LAGUNA-0385**

## **Garmeric - Mc Skin Herbal Oil**

Falcon, Angelie S., Gov. Felicisimo T. Sanluis Integrated Senior High School

### **Abstract**

#### **INTRODUCTION**

"Around the world, our ancestors have a lot of knowledge about the folkloric alternative medicinal plant. Traditional medicine has been practiced since the old times in different culture throughout the world. In addition, it has been an essential part of human evolution and development. This study aimed to produce and determine the acceptability of Garmeric-MC Skin Herbal Oil, Specifically, In the Philippines, alternative medicinal plants are considered to be one of its natural living treasures. The Philippine archipelago is abundantly fertilized that any plant like different kinds of the alternative medicinal plant can grow easily. Most of the alternative medicinal plants can be prepared by boiling, decoctions and extracting juices.

#### **METHODS**

The experimental research design was employed in testing the acceptability of Garmeric - MC skin herbal oil product. All the data gathered were analyzed using Non-Parametric Analysis of Variance (ANOVA) and were treated using Weighted Mean and Standard Deviation.

#### **RESULTS**

The study revealed that the overall acceptability of Garmeric-MC Skin Herbal Oil in terms of appearance ( $x = 3.82$ ), odor ( $x = 3.67$ ), texture ( $x = 4.06$ ), packaging ( $x = 4.08$ ) and safety ( $x = 3.98$ ) was interpreted as acceptable. There was significant difference on the rating on safety of the Garmeric-MC skin herbal oil as perceived by the three group respondents which obtain a mean score of 4.35 as for the teacher, housewives on the other hand rated 4.13 and students 3.83 with the F - ratio 4.901 and p-value of 0.012 with a remark "Significant". The safety of Garmeric - MC Skin Herbal Oil is significant because not all people can be pleased to trust the product. Laboratory Tests also divulged significant information about the Garmeric-MC Skin Herbal Oil that every main ingredient found in the product had a high content against bacterial (staphylococcus aureus) which is good to fight against and other skin problems.

#### **DISCUSSIONS**

Garmeric M-C skin herbal oil is a combination of freshly extracted garlic, turmeric, made cacao leaves which serve as the base ingredients of the skin herbal oil. These are highly active property against bacterial, fungal and other skin problem. The researcher aims to make an effective and cheaper alternative medicinal plant product that is beneficial to health specifically for skin diseases.

Herbal oil is composed of different herbal plants that generally contain medicaments and are intended to be applied externally to the body. Garlic, turmeric and Madre cacao in the country are always available and abundant almost all year round. The antibacterial and antifungal skin herbal oil made from Garmeric M-C can greatly help everyone who relies on alternative medicine for skin problems.

**KEYWORDS:** Garmeric -MC, Herbal Oil, Acceptability, Madre Cacao

**SUBMISSION ID: R04A-LAGUNA-0459**

## **Feasibility of the Proposed Kapatan Seaweeds Farm: Basis for the Guso para sa Puso Application Project**

Kurt Catolico, Department of Education Sarangani

### **Abstract**

#### **INTRODUCTION**

A fishing village in the Municipality of Glan, Barangay Kapatan has the potential of becoming the Seaweed Capital in the municipality even in the entire province of Sarangani. A body of water possibly suited for seaweeds production is just a stone's throw away from Hadji Musa Integrated School (HMIS). The school which offers Senior High School Technical-Vocational Livelihood track in Agri-Fishery strand with a specialization in Aquaculture can benefit immensely from the proposed Kapatan Seaweeds Farm. This income generating project seeks to address the school's target in attaining 100 participation of its grade 12 learners to the Industry Immersion Program. The school year 2018-2019 posted 2 out of 35 grade 12 learners who were not able to participate in the said immersion program due to the distance of the immersion venue. Hence, this study is pursued.

#### **METHODS**

The study utilized the descriptive research particularly the project feasibility design. This method was employed to determine the viability of the proposed Kapatan Seaweeds Farm.

#### **RESULTS**

The proposed project is feasible in terms of the marketing, technical, financial, socio-economic, organization and management aspects of the study. It is projected to earn a gross sales income of up to Php775,000.00 annually. The proceeds are seen to supplement the improvement of the school's aquaculture programs, activities, and projects as well as spur economic growth in the area. It is also a viable venue for the Industry Immersion of Program of grade 12 learners and can serve as a laboratory for Junior High School aquaculture learners.

#### **DISCUSSIONS**

The result of the study can, therefore, be used as the basis for the Guso para sa Puso Project which poses an opportunity for the school to solve its prior concern of achieving 100 participation of its grade 12 Senior High School learners in the Industry Immersion Program for the next school year and for the school years to come. Not only that, the project will serve as a venue for learners to enhance and improve their skills and competence in aquaculture. This project looks forward to initiating the transformation of the school into a center of excellence in aquaculture in the entire province of Sarangani. Moreover, it is seen to help in alleviating the plight of the people of Kapatan, most especially the parents of our learners since it will spur economic activities through agri-fishery industry which is very potential in the area.

**KEYWORDS:** Seaweed Farm, Guso, Hadji Musa Integrated School (HMIS), Glan, Sarangani,

**SUBMISSION ID: R012-SARANG-0216**

## **Extracted Organic (Madre De Cacao and Ipil Ipil) Household Insecticide**

Lucena, Monalie S., Gov. Felicisimo T. Sanluis Integrated Senior High School

### **Abstract**

#### **INTRODUCTION**

The study aimed to determine the effectiveness of extracted organic (Madre de Cacao and Ipil Ipil) insecticide in eliminating household insects within the elapsed time using different solutions. It sought to answer the following question: What are the processes/ procedures involved in preparing extracted organic insecticide using different solutions such as 70% extracted organic insecticide + 30% water, 70% extracted organic insecticide + 30% vinegar and 70% extracted organic insecticide + 30% liquid soap. What is the level of effectiveness of extracted organic insecticide in terms of household insects eliminated within the elapsed time? Is there a significant difference in the level of effectiveness of extracted organic insecticide in eliminating household insects within the elapsed time using different solutions?

#### **METHODS**

Experimental and descriptive research was used to test and evaluate the product. The study was made through washing, pounding/ grinding, extracting, straining, measuring, mixing, and packaging and testing.

#### **RESULTS**

The F value was 0.000 given by the respondents stated that the extracted organic insecticide was significant in eliminating household insects such as ants, flies, mosquitoes, and termites with an F value of 0.007 within the elapsed time using different solutions, however, not significant in eliminating cockroach with an F value of 0.295 within the elapsed time using different solutions.

#### **DISCUSSIONS**

The study revealed that there is a significant difference in the level of effectiveness of extracted organic (Madre de cacao and Ipil Ipil) insecticide using different solutions in eliminating household insects such as ants, mosquitoes, flies and termites. This infers that the extracted organic insecticide is equally effective in eliminating insects. While there is no significant difference in eliminating cockroach within the elapsed time using different solutions. This means that cockroaches eliminated regardless of elapsed time. In this case, the hypothesis was rejected and was partially sustainable. Students, teachers, and housewives may use extracted organic insecticide as a substitute for commercial and expensive insecticide. The local government may support the findings or giving free seminars for the production of extracted organic insecticide in the community as an alternative insecticide to help its constituents. Community people should plant Madre de cacao and Ipil Ipil trees in their locality; it will be a great use to them as an insecticide. Further study should be made to improve the quality of extracted organic insecticide. Also, further researchers may use this as their reference when doing another research about insecticide.

**KEYWORDS:** Household Insecticide, Extracted Organic Insecticides, Madre Cacao

**SUBMISSION ID: R04A-LAGUNA-0438**

## **Ethnobotanical Study Among the B'laans of Sarangani Province: Basis for a Resource Manual**

Shiela P. Butil, Ph.D

### **Abstract**

#### **INTRODUCTION**

This study primarily aims to collect information from local populations concerning the different medicinal plants used by the B'laans of Sarangani Province for the different treatment of common diseases.

#### **METHODS**

It had three phases. The ethnographic phase conducted from September 2011 to January 2012 which involved extensive fieldworks focusing on the usage of plants by the B'laans of Sarangani Province. The laboratory phase which focused on the assessment of the antimicrobial properties of the plants, the toxicity screening and the determination of the secondary metabolites through phytochemical screening. The third phase is on the development of the resource manual based on the series of a survey conducted.

#### **RESULTS**

Results show that there were 86 plant species that were identified by the B'laan healers to have medicinal properties. Twenty four were prescribed for respiratory system diseases, 28 for the digestive system, 21 for the integumentary system, 28 for the circulatory system and 14 for the disorders of the nervous system. Most of these plants have already been documented for their medicinal properties by authorities in the study of Philippine Medicinal Plants. They are classified into 45 families of varied taxonomic properties. Families Leguminosae, Euphorbiaceae, Gramineae and Compositae have the most number of representative species. Leaves are commonly used in the process of preparation. A decoction is commonly prepared for the said leaves and is taken internally. Other plant parts like roots and bark are also used by the healers.

In terms of distribution, *Artemisia vulgaris* L., which is intentionally propagated is the densest while *Chromolaena odorata* (Linn.) King & H. Rob, *Euphorbia hirta* Linn, and *Imperata cylindrica* L. Beauv are the most abundant considering their highly invasive characteristics which ensure their reproductive success. More than half of the plants identified are not intentionally propagated; rather they are just allowed to grow within the vicinity. In terms of antimicrobial activity, the three bacterial species specifically *Staphylococcus aureus*, *Bacillus subtilis* and *Escherichia coli* and the two fungal species namely *Aspergillus niger* and *Candida albicans* show sensitivity to the 10 plants that were subjected to antimicrobial assays. Some plants do not possess antibacterial activity against *Pseudomonas aeruginosa*. Toxicity levels in terms of LC50 varied, with *Ficus* sp. and *C. odorata* display the highest toxicity. All six secondary metabolites namely saponins, alkaloids, tannins, flavonoids, leucoanthocyanins, and steroids are present in *Ervatamia pandacqui* (Poir.) Pichon, *Antidesma ghaesembilla* Gaertn. Va. *Ghaesembilla* and *Ficus* sp.

#### **DISCUSSIONS**

The researcher recommends that a similar Ethnobotanical investigation be done to other ethnic groups and that other plants that were identified be subjected to the different assays to establish their antibacterial and antifungal activities, toxicity level and the active secondary metabolites present.

**KEYWORDS:** Ethnobotanical investigation, ethnic group, B'laan, B'laan healers

**SUBMISSION ID: R012-SARANG-0195**

## **Development and Acceptability of "Ampalunggay Brewed Coffee"**

Vergara, Christine H., Gov. Felicisimo T. Sanluis Integrated Senior High School

### **Abstract**

#### **INTRODUCTION**

Ampalunggay, the combination of ampalaya seeds and malunggay seed combined together to produce an alternative coffee to the commercially sold copy in the market to make it a cheaper and better product in the future. The researchers conducted a study about Ampalaya seeds and malunggay seeds as a substitute for Coffee beans. This study aimed chiefly to determine the acceptability of Ampalunggay brewed coffee between three groups of respondents.

The respondents were forty-five (45) randomly selected respondents including fifteen (15) TLE teachers, fifteen (15) coffee drinkers and fifteen (15) entrepreneurs from Santa Cruz, Laguna.

#### **METHODS**

The experimental method of research was employed. In conducting this study which involved the gathering of the essential data and information to meet the objectives and answer the questions concerning the level of accessibility of Ampalunggay brewed coffee.

Questionnaire in the form of checklist and statistical treatments were applied in the study consisted weighted mean, standard deviation and the single factor analysis of variance (ANOVA) which determined the level of accessibility of the product. Related readings on the literature and studies were gathered in the formulation of the hypothesis and the conceptual framework which was presented in a form of paradigm. The definition of terms was formulated based on the variables presented in the paradigm.

#### **RESULTS**

Study showed that the product is healthy but easy to do, the audience can either cook or bake the Ampalaya and malunggay seeds by using an oven or pan. The researchers performed three trials and showed that there is no much difference with the commercially available coffee, based on the aroma, taste, appearance and texture. Therefore, the researchers conclude that ampalaya seeds and malunggay seeds can be an alternative source for coffee.

#### **DISCUSSIONS**

Based on the drawn conclusions, these are highly recommended. The researcher recommends based from the findings, families and consumers can try drinking Ampalunggay brewed coffee as alternative to commercial coffee. The product can be enhanced through advance research and study that would eventually lead to the improvement of its quality. DTI approval should be considered to legally advertise the product. Local government such as community organizations can use the Ampalunggay brewed coffee as profitable product for small business within the community. Future studies should be done along this line considering other kinds of herbal products using the same ingredients

**KEYWORDS:** Ampalunggay Brewed Coffee, Development and Acceptability

**SUBMISSION ID: R04A-LAGUNA-0462**



## **Bamboo Shavings (*Bambusa Blumeana* Schultes F.) and Water Hyacinth (*Eichornia Crassipes*) as Particle Board**

Selda, Roderick P., Laguna Senior High School

### **Abstract**

#### **INTRODUCTION**

Intelligent use of natural resources to maintain sustainability is one of the issues that must be addressed nowadays. The forests covering in the Philippines continue to deplete as time goes by because of excessive cutting of trees to harvest different forest products. Many continue to find ways to answer this problem by experimenting and formulating composite materials using wood particles, and other agricultural waste products and transforming it into an engineered wood in place of more expensive plywood, this is known as particle boards. Its successful production will lessen the volume of agricultural wastes as well as water hyacinths and people will have profitable income out of unnoticeable treasures.

#### **METHODS**

This study was conducted to find out the level of quality of bamboo shavings and water hyacinth through different tests such as: internal bond, modulus of rupture (MOR), screw withdrawal, moisture content, thickness swelling, and water absorption; the mean level of acceptability of the product in terms of its appearance, quality and durability; and the significant difference among the ratings given by the groups of respondents on the level of its acceptability in terms of appearance, quality and durability. Descriptive and experimental research designs in testing the hypothesis were used and analyzing the data gathered from the ratings of 30 respondents composed of carpenters, painters, and distributors of particle board from Santa Cruz, Laguna. The statistical tools used were weighted mean, standard deviation, and ANOVA (F-test).

#### **RESULTS**

For the internal bond test, the only specimen with 30/70% water hyacinth and bamboo shavings passed the standard. All specimens passed the modulus of rupture test. For screw withdrawal test, only samples 50/50% and 30%/70% of water hyacinth and bamboo shavings passed the standard value. For moisture content test, mixtures having 30/70% and 70/30% passed. On thickness swelling test, a specimen with 30/70% water hyacinth and bamboo shavings passed. In the water absorption test, none of the specimens passed. The overall mean ratings on the level of acceptability of bamboo shavings and water hyacinth as particle board clearly revealed that the respondents rated the product in terms of appearance, quality, and durability as "highly acceptable."

#### **DISCUSSIONS**

The results show that bamboo shavings and water hyacinth served as an alternative in making low-density particle board.

**KEYWORDS:** Particle Board, Bamboo Shavings, Water Hyacinth, Acceptability, Specific Test

**SUBMISSION ID: R04A-LAGUNA-0431**

## **Bamboo Vinegar: Liquid Organic Fertilizer**

Pasahol, Erarose L., Gov. Felicisimo T. Sanluis Integrated Senior High School

### **Abstract**

#### **INTRODUCTION**

The Philippine is a well-known supplier of bamboo furniture and handicrafts all over the world. The country is the fifth largest bamboo exporter in the world with export revenues amounting to 3.2 million U.S. dollar per year (Carillo, 2017). With the demand in this fast-growing industry, many Filipinos entered the bamboo furniture and handicrafts business for export and local use hence scraps and waste from the shops and factories are added to the tons of garbage produced in the country. This study may help Filipinos especially those in the agricultural and marketing sector to realize that scrap bamboos can be utilized as an organic fertilizer. This will at least minimize if not eradicate the adverse effect of the increasing amount of waste at the same time promote organic farming.

#### **METHODS**

The experimental method of research was applied in the collection of data needed in the study. Using various concentrations of bamboo vinegar was drenched on the soil samples planted with mustard. In terms of soil essential nutrients, the soil analysis tests showed that there was a change in the number of nutrient contents on the soil. The result also revealed that there was a significant difference between the effectiveness of Bamboo vinegar in different concentrations on the plant growth as indicated by the color of leaves, height and weight but not the leaf count.

#### **RESULTS**

Bamboo vinegar liquid organic fertilizer significantly improved soil chemical properties. The appropriate amount of bamboo vinegar liquid organic fertilizer enhanced the amount of nutrient presents in the soil: nitrogen, phosphorus, and potassium, but excess amount made the soil acidic that catalyzed the degradation of the nutrients. The findings also revealed that the difference in the concentration of bamboo vinegar liquid organic fertilizer had different effects on the color, height, and weight of the tested plant.

#### **DISCUSSIONS**

Soil Essential Nutrients, the soil analysis test implies that there is a change in the amount of nutrients content on the soil due to the treatment of bamboo vinegar at different concentrations. Color and Number of Leaves, the result reveals that the chlorophyll content of the leaf can be observed through its color and appropriate dilution of applied bamboo vinegar improved the chlorophyll content of leaf as well as its color but not on the number of leaves. Weight and height, bamboo vinegar had a good effect on plant growth in terms of weight and height. As reflected on soil laboratory test results. Bamboo vinegar improved the soil nitrogen which was essential to improve plant weight and height.

**KEYWORDS:** Bamboo Vinegar, Liquid Organic Fertilizer, Acceptability

**SUBMISSION ID: R04A-LAGUNA-0448**

## **Acceptability of Impure Dilute Acetic Acid (IDAA) Shampoo Using Different Flower Scents**

Papa, Maricel S., Gov. Felicisimo T. Sanluis Integrated Senior High School

### **Abstract**

#### **INTRODUCTION**

Many Filipinos are conscious and aware of the different ways on how to treat the hair in traditional and in modern ways. One of these hair treatments is the transition of shampoo to vinegar. The practice of using vinegar as a shampoo dates back to ancient Roman times and with good reason -- the vinegar can help remove residue build up and close the cuticle, helps hair achieve that shiny, clean look that all are striving for. This study was conducted to encourage and inform the people that vinegar could be used to clarify and condition hair. These observations inspired the researcher to study and to test how the IDAA shampoo can be added different flower scents like rose, sampaguita, and ylang-ylang in terms of scent, color, and consistency.

#### **METHODS**

The instrument questionnaire checklist was the tool used to gather information or data for the research. Percentage, weighted mean and standard deviation were used to determine the acceptability of the Impure Dilute Acetic Acid (IDAA) Shampoo in terms of scent, color, and consistency. ANOVA was used to determine the significant difference on the acceptability of IDAA Shampoo using rose, sampaguita, and ylang-ylang scents as rated by the students, faculty, and beauticians.

R results. It was found that in terms of rose scent and consistency, there were significant differences among the ratings given by the students, faculty, and beauticians. While in terms of color, there was no significant difference in the IDAA shampoo. In terms of sampaguita scent, color, and consistency, there were significant differences among the ratings given by the respondents on the IDAA shampoo. In ylang-ylang scent, there were no significant differences among the ratings given by the respondents. And, in terms of color and consistency, their ratings indicated that there was a significant difference.

#### **DISCUSSIONS**

The future researchers can enhance the scents by adding ready-made flower essential oils in making IDAA shampoo should be established to be able to produce quality products; teachers who will prepare this product or the researchers may secure an approval from the Department of Trade and Industry for authenticity; researchers may improve the color and consistency, since the IDAA Shampoo was not given highly acceptable ratings; parents and consumers may use IDAA Shampoo as an alternative for commercial shampoo; and that further study on the awareness of the community on the benefits gained from vinegar in relation to medical and domestic purposes and as an ingredient may be done.

**KEYWORDS:** Impure Dilute Acetic Acid Shampoo, Flower Scent, Color and Consistency, Acceptability

**SUBMISSION ID: R04A-LAGUNA-0443**

## **Vinegar and Salt (VSALT) Solution and Its Reaction to Copper Wire and Zinc Nails: Basis for the Development of a Vsalt Cell**

Crisden K. Recena & Ria Anne H. Cortel, Cabuyao Integrated National High School

### **Abstract**

#### **INTRODUCTION**

The Philippines is situated in a number of potential sources of electricity, yet many Filipinos do not have access to it, especially the remote areas. As response to this social crisis, purchasing of battery helps them to still operate their devices while spending too much on their budget. Moreover, the improper disposal of batteries contributes to air pollution as well as land and water contamination. These social concerns led the researchers to study the feasibility of vinegar and salt solution and its reaction to copper wire and zinc nails as basis for the development of a VSALT Cell, which is less harmful to both humans and environment.

#### **METHODS**

This study utilized a true experimental research design, which is regarded as the most accurate form of experimental research that tries to prove or disprove a hypothesis mathematically. The researchers collected materials needed for the development of the VSALT cell, namely the vinegar, salt, copper wire, and zinc nails. Vinegar and salt were mixed with different concentrations. The researchers prepared five sets of empty beakers with two metals attached. Each beaker contained copper and zinc and filled with the varying concentration of the solution. A multi-meter was connected at both ends of the metal and as it read the voltage, the data were recorded in an observation sheet.

#### **RESULTS**

The vinegar and salt solution yields Hydrochloric Acid (HCl) and Sodium Acetate (CH<sub>3</sub>NOONa), which are the common electrolytes used in a battery. Different amount of voltages were obtained from varying concentration of the solution: at 0.57 Molar, 4.5 volts is generated; 1.13 Molar produced 4.6 volts; 1.70 Molar drawn 4.7 volts; 2.27 Molar projected 4.8 volts and 4.9 volts is obtained by 2.87 Molar of the VSALT Solution. In addition, through the utilization of the Pearson R Correlation, the computed coefficient r value states that there is a significant relationship between the voltages measured and the varying concentrations that indicates that the higher the molarity of the solution, the greater the amount of voltage it generates.

#### **DISCUSSIONS**

This implies that the solution of vinegar and salt and its reaction to copper wire and zinc nails can be a possible source of electricity in a form of a battery. Thus, it can also be accessed by anyone since the materials are easy to find. On the other hand, the researchers recommend to increase the concentration of the solution to further attain higher amount of voltage that can be used in a large scale setups.

**KEYWORDS:** VSALT Cell, Electricity, Electrochemistry, Voltage, Concentration

**SUBMISSION ID: R04A-CABUYA-0043**

## **Utilization of Extracted Coconut Embryo Juice as a Natural Beverage**

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Alexis S. Baran, Langkaan II National High School  
(Adviser: Louise A. De Guzman)

### **Abstract**

#### **INTRODUCTION**

The coconut palm (*Coco nucifera*) is one of the most important crops in our country since most of its parts from the leaves down to its roots can be manufactured into different products. Yet the coconut palm has still a lot to offer. Coconuts that are mature are sold in the market for their milk, and occasionally, when a mature coconut is cracked open, one will find a white, juicy and spongy mass inside which we locally call "tumbong" or referred to as the coconut embryo, coconut apple or coconut cotyledon. Coconut embryos can be eaten raw but are generally regarded as waste by the coconut sellers in the market although it has lots of nutritional value.

This study was conducted to make a juice or natural beverage out of the supposed-to-be waste coconut embryos in the market. This study specifically aims to identify the sensory acceptability of the extracted juice of coconut embryo in terms of appearance, aroma, and taste and test if there is a significant difference between the extracted juice of coconut embryo in terms of its appearance, aroma and taste.

#### **METHODS**

An experimental method was used in the study to determine the sensory acceptability of the extracted coconut embryo juice as a natural beverage in different ratio 1:1:1, 1:1:2 and 1:1:3 of water, sugar and extracted coconut embryo juice. The researchers conducted a survey to test for the sensory acceptability of the coconut embryo juice in terms of appearance, aroma and taste.

#### **RESULTS**

Based from the result of the study, the over-all computed mean for the appearance is 3.6833 which falls into the scale of Seem Appetizing. For the aroma, the over-all computed mean is 4.8500 which falls into the scale of having Pronounced Coconut Embryo Odor. And finally, for the taste, the over-all computed mean is 3.9333 which falls into having a Moderately Pleasing Taste. Based from the result of the ANOVA, there is no significant difference between the treatments in terms of appearance, aroma and taste.

#### **DISCUSSIONS**

In line with the findings of the study, future researchers should conduct a study on how to utilize the pulp residue upon the extraction of the coconut embryo juice, conduct a study using different concentrations of water and coconut embryo puree, and test it for standardization and lastly, future researchers should conduct more research on how to improve the taste, aroma, and appearance of the coconut embryo juice (such as putting other alternative and healthier sweetener like mascuvado, honey, coconut sugar etc.)

**KEYWORDS:** COCONUT EMBRYO, COCONUT EMBRYO JUICE

**SUBMISSION ID:** R04A-DASMAR-0006

## **Utilization of Carabao Manure and Polyethylene Waste as Brick**

Sarah Marcelin M. Evasco, Balian INHS  
(Adviser: Leilani Vizarra)

### **Abstract**

#### **INTRODUCTION**

The study aims to develop a new brick through the utilization of carabao manure and polyethylene waste. Specifically, this research aimed to analyze, investigate, and observe the level of performance of the developed bricks of carabao manure and polyethylene waste with respect to the following aspects:

- A. density test
- B. drop test
- C. water absorption test

#### **METHODS**

Three kilograms of carabao manure was dried first to lessen bacteria and to avoid moisture. Shredding Polyethylene waste- plastic bottles were shredded into very small pieces manually by the use of scissors and cutters.

##### **Mixing Casting**

The researchers mixed the carabao manure and shredded polyethylene waste in a mixture. The researchers used the toy bricks which served as mold of the mixed carabao manure and polyethylene plastic. The mixture (carabao manure and polyethylene waste) is then put into the mold.

##### **Drying**

##### **Weighing**

The mold was transferred to a tray and was dried in the sunlight. Weighing scale was then used to measure the weight of the dried carabao manure with polyethylene bricks.

#### **RESULTS**

1. Utilizing carabao manure with polyethylene waste as brick with shredding, mixing, sun-drying, and, cast making procedure is feasible
2. The durability of the carabao manure with polyethylene waste brick decreases with increasing the polyethylene waste ratio. Despite this, the durability of the carabao manure with polyethylene waste brick is almost equivalent with the common brick.
3. The data has also shown that carabao manure with polyethylene waste brick demonstrated comparable density with that of the lightweight aggregate bricks.
4. The brick passed the water absorption test after being immersed in water for 10 minutes. The carabao manure with polyethylene waste brick increased weight by 14.08 %.
5. The brick highly decreases in compressive strength after a period of time.
6. Carabao manure with polyethylene waste brick promotes healthier building material and cost reducing not only in production but also in service cost.
7. This kind of building material has great potential in the future for low to medium cost housing construction and contribute on sustainable development.

#### **DISCUSSIONS**

1. Use compression machine to enhance its compressive strength hence, improving its potential as a building brick.
2. Appropriate construction specification is necessary to prevent carabao manure with polyethylene waste bricks from coming into any prolonged direct contact with rainwater

**KEYWORDS:** Carabao Manure project

**SUBMISSION ID: R04A-LAGUNA-0000**

## **Utilization of Coconut Husks (*Cocos Nuciferas*) Into Fiberboards**

Princess Kimberly Limjoco, Student  
(Adviser: Claire P. Rosarda)

### **Abstract**

#### **INTRODUCTION**

Coconut trees play a very important role in various aspects of industry. Coconuts serve as a great tool considering its various uses as it provides human's basic needs such as clothing, shelter, foods, source of income, among others. It is very abundant in tropical regions including the Philippines. One of coconut's substantial part is the coconut husk where fibers that are rich in lignin content serves as a natural adhesive in producing binderless fiberboards.

#### **METHODS**

The coconut husks were collected from Trece Martires City, Dry Market and Indang Road. The husks underwent decorticating machine provided by the Philippine Coconut Authority and were filtered using a screen to obtain coconut dusts as the main raw material in producing fiberboards. The two treatments were mixed manually with different binders and molded before it undergone hot hydraulic press machine while the other treatment was pressed directly after molded. Produced fiberboards were cooled down and trimmed into 30cm by 30 cm.

#### **RESULTS**

Based on the result of the study, fiberboards can be produced with coconut husks. The results were evaluated and tested by the Forest Products and Research and Development Institute or FPRDI. The best treatment for the two evaluated properties such as thickness swelling and water absorption was Treatment 1 which was made up of grinded plastics and coconut dusts while for mechanical property namely Modulus of Rupture, Treatment 2 which was made up of isocyanate and coconut dusts.

#### **DISCUSSIONS**

Based on the results obtained at FPRDI laboratory, the researchers concluded that there are significant differences between the physical properties and mechanical properties of the produced fiberboards and the commercial fiberboard. Therefore, the fiberboard produced is a great help in the construction industry because it is an efficient substitute for installing interiors uses and decorations such as furniture and cabinets. Lastly, this can be a source of income. It can be used as an alternative plywood because it is more unique. People know that there is always a huge demand for these types of natural handicraft all over the world. It is a good alternative to wood and helps to prevent deforestation for the production of known fiberboards.

**KEYWORDS:** Fiberboard

**SUBMISSION ID:** R04A-CAVITP-0980

## **Used and Broken Hangers as a Substitute for Commercially Produced Calcium Carbonate (CaCO<sub>3</sub>) in Making Ceramic Tiles**

Nico Antonio Sayre, Student

### **Abstract**

#### **INTRODUCTION**

Philippines is the third world's largest contributor of various garbage, specifically plastics. Using plastics in producing various materials, such as floor tiles, is one of the ways to lessen garbage and pollution. This experimental research determined the feasibility of the used and broken hangers as a substitute for CaCO<sub>3</sub> in making ceramic tiles. Specifically, the characteristic of the produced floor tiles in terms of flexural strength was tested. Likewise, the significant difference between the physical properties of the produced floor tiles of the two treatments was emphasized.

#### **METHODS**

This study is a quantitative type of research. It involved two treatments with three replications each. Both treatments were tested to determine the flexural strength of the tiles. T1 contains 12.5g of hangers, 87.5g of bentonite, 50g of cement, and 50mL of water while T2 contains 25g of hangers, 75g of bentonite, 50g of cement, and 50mL of water. The data was then prepared for analysis.

#### **RESULTS**

In analysing the characteristic of the produced floor tiles in terms of flexural strength, the results showed that the mean score of T1 is 256 MPa while T2 has a mean score of 200 MPa. Furthermore, the two treatments were compared using independent t-test with a critical value of 2.13, where a t-value of 0.359056 was obtained which shows that there is no significant difference between the flexural strength of the two treatments. Based on the results, it can be inferred that T1 has a higher flexural strength than T2.

On the other hand, in comparing T1 to the commercially available ones in terms of flexural strength, independent t-test with a critical value of 2.13, where a t-value of 0.675177 was obtained which implies that there is no significant difference between the flexural strength of T1 and the commercially available ceramic floor tiles.

#### **DISCUSSIONS**

Thus, this study found out that ceramic floor tiles out of used and broken hangers and the commercially available ones show no significant difference. Also, it can be concluded that it is feasible to produce ceramic floor tiles out of broken plastic hangers.

**KEYWORDS:** ceramic floor tiles, hangers, flexural strength

**SUBMISSION ID:** R04A-CAVITP-1144



## **The Use of Plastic and Coffee Husks in Making Composite Boards**

Cris Jerico Romulo, Eliza Luth Novelo, & Neri Chryseis Gahoy

### **Abstract**

#### **INTRODUCTION**

Composite board is used in a variety of home construction projects, trimming, exterior shutters, and other home products. It's an ideal material choice due to the many benefits you can leverage. The materials used for making the composite boards are plastic sheets and coffee husks from coffee liberica and robusta. The researchers used coffee husks because the production and consumption of coffee generates huge amounts of low value waste with relatively little recycled, otherwise it will end up in landfills. It is also intended that the material created is durable and washable, with prospects of extending the realities in which it can be used. "Lightweight and strong" can translate into "less impact on the environment." Composite boards can be identified either as lightweight or strong.

#### **METHODS**

By using an accurate electrical weighing scale, the researchers divided the coffee grounds into 9 parts and 3 of them are 23 grams, 3 are 46 and the remaining 3 are 69 grams. The three 23 grams of coffee got 207 grams of plastic each, then three grams of 46 grams of coffee got 184 grams of plastic each, and the three 69 grams of coffee each got 161 grams of plastic. Then, the conductor of the Two-Roll Mill Machine and the Compression Machine started the process of using the said Two-Roll Mill Machine. The conductor used a square metal mold plate to put the processed plastic and coffee grounds in for an average time of 5-10 minutes. Lastly, the conductor took out the already complete Composite Boards and by using a heat resistant glove.

#### **RESULTS**

Tensile strength was used as methods for determining the convenience and to know whether the Coffee is compatible to be an additional material in making composite boards or not. Specimens are placed in the grips of a Universal Test Machine at a specified grip separation and pulled until failure. For ASTM D3039 the test speed can be determined by the material specification or time to failure (1 to 10 minutes). A typical test speed for standard test specimens is 2 mm/min (0.05 in/min). An extensometer or strain gauge is used to determine elongation and tensile modulus. The results showed that Coffee grounds can be an alternative material for making composite material.

#### **DISCUSSIONS**

The results indicated that the coffee husks and HDPE can be formed into composite boards. The composite boards sustained enough forces to be considered stronger than average pure HDPE made composite board.

**KEYWORDS:** Composite, Boards, HDPE, Coffee, Husks, Plastics

**SUBMISSION ID: R04A-CAVTP-1630**

## **Science and Mathematics Academic Achievement Among Incoming Stem Senior High School Students**

Lorc Mc Wil Perucho, Naic NHS

(Adviser: Loida Arce)

### **Abstract**

#### **INTRODUCTION**

Science, Technology, Engineering, and Mathematics are intertwining disciplines when applied in the real world. The difference of the STEM curriculum with the other strands and tracks is the focus on advanced concepts and topics. This strand helped to enhance or to apply in our daily living. Education at all levels in science, technology, engineering, and mathematics (STEM) develops, preserves, and disseminates knowledge and skills that convey personal, economic, and social benefits. However, many students are afraid of taking STEM strand because of its two main subject, Science and Mathematics, which a challenging subject that needs a critical and logical thinking effort. Therefore, this study aims to determine the attitudes and difficulty level of incoming STEM learners towards Science and Mathematics.

#### **METHODS**

Thirty-five (35) students who wants to take STEM strand and those selected students that will take STEM Strand in Senior High was given a multiple choice type of questionnaires that will measure their knowledge in Mathematics and Science and a survey questionnaire that will measure their attitude towards Mathematics and Science.

#### **RESULTS**

The subject of the study was thirty-five (35) G10 Students that were purposively selected and were given a Science and Mathematics Qualifying and Attitude test to identify their proficiency levels. The attitude test of the participants in Science gathered an overall mean of 3.7 a satisfactory level, the attitude test in Mathematics they got an overall mean of 3.5 which is in satisfactory level. On the other hand, the academic achievement of the participants in Science got an overall mean of 24.69, which indicates that they got a satisfactory level, but the academic achievement in Mathematics got an overall mean of 20.69 that is only in fairly satisfactory level.

#### **DISCUSSIONS**

The incoming STEM Students are having a satisfactory level when it comes to academic achievement in Science and fairly satisfactory in Mathematics, but their attitude towards this two subjects are positive. It proves that there is a significant relationship on the academic achievement and attitude of incoming STEM student towards Science and Mathematics. Therefore, the students still have inadequate in knowledge about the different theories in science and still lack the ability to use different formulas to solve mathematical problems yet this deficiencies can be surpassed if the students enjoy studying both Science and Mathematics.

**KEYWORDS:** STEM, SCIENCE ACADEMIC ACHIEVEMENT, MATH ACHIEVEMENT

**SUBMISSION ID:** R04A-CAVITP-0046

**ROBOCAM**

Lalaine Vicedo, Student

**Abstract**

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**KEYWORDS:** CCTV, robot, camera, touch sensor, ultrasonic sensor, remote control, 360°, trial, LEGO,

**SUBMISSION ID: R04A-CAVITC-0042**

## **ROBOLLECTOR - the Common Garbage Collector**

Mariel Ladanio, Student

### **Abstract**

### **INTRODUCTION**

Robots have been used all over the world to help make things easier and faster. With the advent of technology among us to make our lives easier, the researchers constructed a robot that collects garbage using Ev3 Lego Mindstorms and named it the Robollector. This robot has claws that collect the garbage into the conveyor inside it and ends in a fish net or garbage storage of the robot.

### **METHODS**

Robollector is a robot that collects garbage with a dimension of 330 cm length, 165 height and width, excluding the garbage storage. The robot was divided into 3 different parts; namely, the claw or the front part, the body or the middle part where the conveyor was placed, and the storage or the end part. The Robollector was programmed using the Ev3 Programming Software. The pallets (please check if this is the right word here) are connected to each other properly to ensure that tasks are carried out correctly. The action control specifically the move tank and medium motor pallets were used for the robot to move, the conveyor to perform, and the claw to rotate.

### **RESULTS**

The researchers tested the Robollector in different places in the school's covered court, robotics center, and inside the classroom. The robot ran smoothly as expected. The robot encountered a problem however regarding the arrangement of the chairs when it was tested in the classroom because there was a lot of obstacles causing the robot to lose its path. The performance of the robot was still good after all. The robot's ability to collect garbage also helped the researchers to maintain the cleanliness inside their training ground, which was the robotics center. The robot successfully picked up the Lego elements that were scattered on the floor using the claw. Each part of the robot worked successfully.

### **DISCUSSIONS**

The program of the robot performed properly because the appropriate pallet was used. The outside factor that affected the performance of the robot was the friction caused by the surface texture in different terrains. The smooth surface of the classroom with tiles led the robot to run fast and not collect all of the wastes, the rough surface made it slow and it just passed by the garbage, and the normal surface a traditional cement coating gave the robot its best performance where all the garbage were collected.

**KEYWORDS:** robots, garbage, collector, Ev3, lego, mindstorms, softwares, pallet, conveyor, claw

**SUBMISSION ID: R04A-CAVITP-0711**

## **ROLEG: a 3-IN-1 Robotic Leg Prosthesis for Above-Knee Amputees**

Jarell Ralf Halili & Paj Keifel Guliman, Student

### **Abstract**

#### **INTRODUCTION**

Amputation is the intentional surgical removal of a limb or any body part. It is projected that the incidence of amputation in the Philippines will more than double by the year 2050 to 3.6 million. To help the above-knee amputees fulfill their daily needs, leg prosthesis is prescribed. Conventional leg prostheses are intended usually for one specific function: for walking purposes only. However, there is a need specifically for above-knee amputees to perform other movements aside from walking, such as bending or brisk walking. Due to the limitation of leg prosthesis, the researchers developed a Roleg, a 3-in-1 robotic leg prosthesis for above-knee amputees.

#### **METHODS**

In the fabrication of Roleg, Gyro sensors were integrated and the Arduino UNO was programmed. The other components were assembled in the component box. The robotic leg prosthesis was then worn on the amputated leg. There were buttons for each mode: normal-paced walking, bending, and brisk walking. For normal-walking mode, the robotic leg functioned in forward and backward stance phase. For bending, the motor served as a knee joint in order for the robotic leg to bend in any given angle. For brisk walking, the robotic leg functioned just like the walking mode but in faster phase.

#### **RESULTS**

The robotic leg prosthesis was tested in terms of its accuracy, response time, and acceptability. For the accuracy, 18 out of 20 trials (90%) were performed correctly in normal-paced walking and brisk walking mode while 17 out of 20 trials (85%) in the bending mode. The average response time of normal-paced walking mode was 1.6s, 1.8s for the brisk walking mode and 1.4s for the bending mode. Based on the 5-point Likert Scale, the robotic leg prosthesis was highly acceptable without revision when it comes to functionality, safety and aesthetics. When it comes to durability and comfortability, it was very acceptable with one or two revision/s.

#### **DISCUSSIONS**

Roleg is equipped with microprocessor that controls normal-paced walking, brisk walking, knee bending, rechargeable and powered by 15V that could last for 5-6 days, has a foot-angle design for balance, speed, lightweight (1.1 kg) and cheaper (Php 8, 6750.00) than commercial prosthetic leg in the country. This study could greatly help the above-knee amputees and can be a novel solution to the different problems especially when it comes to comfortability and function of the commercial leg prosthesis. This can also be a good source of income by educating certain people on how to fabricate and operate the device.

**KEYWORDS:** Arduino-based, Gyro sensors, Leg Prosthesis, Above-knee Amputees

**SUBMISSION ID: R006-NEGROS-0002/ R006-NEGROS-0006**

**Project ULING (Unlimited sources of Innovative and Nature friendly resources use for Cooking)**

Loulie Angel P. Mateo, Dipintin High School  
(Adviser: Marie Eugenie Soriano)

**Abstract**

**INTRODUCTION**

Reduction of papers used in school has been initiated through paperless communications but still, the use of it is indispensable since it is the major resource of the students' outputs, thereby creating a volume of waste if not properly addressed. Rice hull is also a raw material in most rice mills in the Philippines. Recycling and reusing are effective ways to reduce the wastes generated. However, the volume of it still contributes to the wastes generated in schools. This is the reason why the students of Dipintin High School thought of an alternative source of energy entitled "PROJECT ULING" in response to Republic Act 9003 Ecological Solid Waste Management Act of 2000. Instead of selling paper waste with the amount of P 2.00 pesos per kilo, it is better to turn it into charcoal with the amount of five pesos per kilo. It requires no money, all we need is the effort in making charcoal out of waste paper and rice hull. This project helps the students and their parents, especially the low income families who cannot afford to buy LPG for their cooking. Thus it will alleviate their standard of living.

**METHODS**

The problem solving method was used as a strategy for this innovation. Used papers (magazines, manila papers, brochures) and rice hull were collected from the students and the community. The papers were then cut into strips and weighed. The strips of paper were soaked in water until it dispersed. The rice hull was then mixed with the soaked paper with a ratio of 2:1 (2 kilos of paper and 1 kilo of rice hull) then squeezed tightly to mold it into circular shape. The resulting balls were dried under the sun until it was ready to use.

**RESULTS**

From our sample, out of 2500 grams of waste paper and 1500 grams of rice hull, a total of 4500 grams of finished paper charcoal was made. Two kilos of paper charcoal was used to boil one liter of water in 28 minutes and 11 seconds. It was also observed that the charcoal did not generate much smoke compared to its wood charcoal counterpart. Since the time the project was implemented, the amount of waste paper has been reduced. The community had already shown support of the project. It also helped solve the problem of garbage, which is unhealthy and unsafe for the students.

**DISCUSSIONS**

The use of Project ULING in cooking is an alternative source of energy aside from the costly LPG that ordinary families could hardly afford. This helps to not only alleviate the cost of cooking but also in the reduction of waste. The community joined together to utilize this resource.

**KEYWORDS:** Rice hull, Waste papers, solid waste management, charcoal

**SUBMISSION ID: R002-QUIRIN-0013**

## **Processed Corn Oil as Potential Additive to Commercial Printer Ink**

Julina Cacao, Tagaytay City Science National High School

### **Abstract**

#### **INTRODUCTION**

The study was conducted to determine the effectiveness of corn oil as an additive to commercial printing inks instead of the more commonly used petroleum products. The corn oil was extracted from the corn kernel and its extract was mixed with the commercial ink based on the varying ratio to provide the best results.

#### **METHODS**

The researcher conducted a research where oil is used as an additive to commercial printer ink. The oil was bought in the supermarket and then mixed with the correct ratio of the amount of corn oil to the amount of ink, and then injected into the printer cartridge.

#### **RESULTS**

The result shows that given the correct ratio, the corn based ink was equal to commercial printing ink which is petroleum based. The researcher concluded that corn oil can be a great alternative additive to commercial printing ink.

#### **DISCUSSIONS**

The corn based ink can help local farmers to generate more income and also to help the environment. In using corn based ink, it will lessen the amount of VOC released by the ink when drying unlike some petroleum based ink which is being used today.

**KEYWORDS:** Corn based ink, local farmers, additive, petroleum, corn kernel, ratio

**SUBMISSION ID:** R04A-CAVTP-0725

## **Production of Ethanol From Sugarcane Bagasse (*Gramineae Saccharum Officinarum* L.)**

Rusell Vincent Sison, Angelo Levardo Loyola Senior High School

### **Abstract**

#### **INTRODUCTION**

Sugarcane bagasse (*Gramineae Saccharum officinarum* L.) are considered as solid waste materials which is not that much important and no longer necessarily needed in environment. This waste was used to produce ethanol and to lessen the amount of solid waste in our country. The aim of this study is to produce bioethanol from sugarcane bagasse using fermentation process and determine the physical and chemical properties of bioethanol yield.

#### **METHODS**

Cellulase was used to break down the cellulose in sugarcane bagasse. *Saccharomyces cerevisiae* (yeast), was used in the experiment for fermentation. Three samples were prepared with the same treatments to determine the physical and chemical properties of the crude extract. The study was done in De La Salle University of Dasmariñas with the supervision of Sir Gideon Legazpi. The physical and chemical properties was measured using different materials and apparatus. Density was measured using an analytical balance to convert milliliters into grams/milliliters. Volatility was measured by isolating the three treatments inside a fume hood for one hour then weighed using the analytical balance. Flammability was measured by adding different amount of the crude extract to the commercial ethanol and clocked the ignition.

#### **RESULTS**

The percentage yield of the ethanol is 1.5% that was computed using the formula, actual yield/ theoretical yield multiplied to 100%.

#### **DISCUSSIONS**

The result show that there is no significant difference of ethanol between commercialize and the harvested crude extract in terms of its physical and chemical properties. This indicates that there is a presence of ethanol of sugarcane bagasse.

**KEYWORDS:** ethanol, sugarcane bagasse, physical and chemical properties, percentage yield.

**SUBMISSION ID: R04A-CAVITP-1281**



**Production of Starch-Based Plastics Derived from Taro (*Colocasia esculenta*) Peelings, Purple Yam (*Dioscorea alata*) Peelings, and Sweet Potato (*Ipomoea batatas*) Peelings**

Ana Maria Jenina Andaya, Jess Mar De Guzman, & Pauline Escalona, Bucal National High School

**Abstract**

**INTRODUCTION**

Nowadays, plastics are used in virtually all aspects of our daily living and it is considered convenient. Unfortunately, one concern that needs to be addressed is its safety, most especially to our environment. This research is an initiative to producing alternative plastics using peelings from taro, purple yam, and sweet potato. Results of this study may be used to avoid damages to our environment that is caused by continuous usage and utilization of plastics.

**METHODS**

This study made use of the following treatments: (a) treatment 0 consisting of 75 g corn starch, 300 mL water, 25 mL vinegar, and 75 mL glycerol; (b) treatment 1 consisting of 45 g taro peelings, 15 g purple yam peelings, 15 g sweet potato peelings, 300 mL water, 25 mL vinegar, and 75 mL glycerol; (c) treatment 2 consisting of 15 g taro peelings, 45 g purple yam peelings, 15 g sweet potato peelings, 300 mL water, 25 mL vinegar, and 75 mL glycerol; and (d) treatment 3 consisting of 15 g taro peelings, 15 g purple yam peelings, 45 g sweet potato peelings, 300 mL water, 25 mL vinegar, and 75 mL glycerol. Resulting plastic samples were tested for tensile strength, water resistance, biodegradability, and effects of strong acid.

**RESULTS**

Data shows that the tensile strength of the plastic samples are as follows: T0= 0.258 N, T1= 0.247 N, T2= 0.448 N, T3= 0.799 N. Water resistance were: T0= softened, T1= dissolve, T2= softened T3= dissolve. Resulting plastic samples were also shown to be biodegradable as they were observed to break down into pieces. Lastly, test for effects of strong acid show that the plastic samples were able to decompose and totally dissolve.

**DISCUSSIONS**

Based from the various test results employed, resulting plastic sample from treatment 3 has higher tensile strength than the other treatments. In terms of water resistance, plastics from treatment 0 and 2 are both softened, while plastics from treatment 1 and 3 both dissolved in water. For biodegradability and effects of strong acid, all the treatments have the same results. They broke down into pieces and become totally dissolve.

**KEYWORDS:** Starch-based plastic derived from peelings

**SUBMISSION ID:** R04A-CAVITP-1548

## **Productivity of Farmers through the Influence of Limited Technology Progress in San Juan, Batangas**

Kristine J. Sulit, San Juan Senior High School  
(Adviser: Stephen Sabile)

### **Abstract**

#### **INTRODUCTION**

Farming is a great contribution to every nation. People are demanding for a sustainable supply of agricultural products, more specifically of rice, for their food security. Thus, the Filipino farmers should find ways to improve and innovate their farming system. Since advanced technology was used, it provided more opportunities for the farmers to enhance their productivity. The purpose of the study was to describe the productivity of farmers in San Juan, Batangas through the influence of limited technology progress. The research sought to determine the conflicts faced by the farmers due to lack of proper equipment, ways of the farmers on solving problems through the resources they have, and reasons why the farmers couldn't cope up with the advancement of technology.

#### **METHODS**

The descriptive research design was used to know the productivity of farmers through the influence of advanced technologies. This study was conducted with 28 selected farmers of San Juan, Batangas through random sampling. Statistical tools used in this study were composite mean, ranking, and weighted mean.

#### **RESULTS**

The study revealed that this kind of work is harder and requires a lot of time and effort in farming due to lack of proper equipment. The production is also slow when working manually and the product they produced is less or just enough for their needs. The farmers considered man power instead of machines. They were asking for the help of their relatives and/or neighborhoods when having hard time in the work field then agreed for an amount of distribution either tangible money or harvested product as return. The advanced machines were expensive thus, it is difficult for them to decide if they will spend money for it regarding its benefits.

#### **DISCUSSIONS**

Based on the results of the study, farmers' productivity was greatly affected by lack of proper equipment. Farmers should be provided with at least one equipment that would be a great help to them, so they can work easier and make the production faster. Cultivate more land areas to have larger amount of production every season and provide high yielding crops. The farmers should attend some agricultural programs to have more knowledge in terms of using different kinds of fertilizers, if there is a need. Farmers must know how to use different kinds of farming machines. They must also know how to fix it, if there's something went wrong while using the machine.

**KEYWORDS:** Productivity, Farmers, Farming, Equipment, Limited Technology, Progress

**SUBMISSION ID: R04A-BATANP-0060**

## **Piezoelectric Transducers as Source of Electricity for LED Streetlights**

Jethro Mel P. Santos, Joshua D. Riego De Dios, & Leoneil Jenz B. Erna,  
Cavite National Science High School

### **Abstract**

#### **INTRODUCTION**

One regular streetlight consumes 1.8 kW-hr per day, thus resulting to a greater budget allotment to power all these lights around the Philippines. This research study aimed to harness electricity from the piezoelectric transducers to power up a streetlight that was represented by a Light Emitting Diode (LED). The effect of the wheel mass on the voltage generation of these transducers and the accuracy of the Light Dependent Resistor (LDR) to trigger the lighting system when the light value was less than 400 lux were also studied.

#### **METHODS**

A schematic diagram was tested on a breadboard and was later made into a circuit. Three piezoelectric transducers were placed into a cement road model and were connected to the circuit where the rechargeable battery and streetlight model were also connected. Three wheels with weights 10, 20, 30 kg were rolled over the transducers, 10 times each wheel. An LDR was used to function and light up the LED when the light value was less than 400 lux. Data were analyzed using two-tailed t test and One-Way ANOVA.

#### **RESULTS**

The piezoelectric transducers generated an average voltage of 3.85V. Since the computed  $t$  1.93 was greater than the  $t_{critical}$  1.6715,  $H_0$  was rejected. Therefore, the average voltage that the piezoelectric transducers produced was greater than 3V. The mean voltages generated by the piezoelectric transducers for the wheel weights 10, 20, and 30 kg were 1.22, 4.45, and 5.89V respectively. Since the computed  $F$  value 8.03 was greater than the  $F_{critical}$  3.35, we reject  $H_0$ . Therefore, there was a significant difference among the generated voltages of the piezoelectric transducers from the wheel weights 10 kg, 20 kg, and 30 kg. The means of accuracy rates of the LDR on 6:00 A.M., 10:00 A.M., 2:00 P.M., 6:00 P.M., and 10:00 P.M. were 90, 100, 100, 90, and 100% respectively. The computed overall accuracy rate was 96%. Since the computed  $t$  39.19 was greater than the  $t_{critical}$  2.1319,  $H_0$  was rejected. Therefore, the accuracy rate of the LDR as a light sensor to trigger the system was greater than 0%.

#### **DISCUSSIONS**

This study showed that the piezoelectric transducers could power up an LED in response to applied mechanical stress from the passing of wheel and it was concluded that the greater the mass of the wheel, the greater the voltage generation of the transducers. This research study could help save money for electricity and prevent vehicular accidents during night times.

**KEYWORDS:** Piezoelectric transducers, voltages, LED, LDR, streetlight

**SUBMISSION ID: R04A-CAVITP-0645**

## **Oregano Extract: Organic Pesticide for "Gulayan sa Paaralan"**

Shiela Mae Bigata, San Juan Senior High School

### **Abstract**

#### **INTRODUCTION**

It is acknowledged that the benefits of pesticides outweigh the risks, which is evident in the continuing demand for more products to solve an ever-increasing array of pest problems. Organic pesticide will help farmers to reach the affordability and safety of their health using the oregano pesticide. Oregano is a common herb that can serve as a pesticide to maintain the safety of the users. Since it will reduce chemical composition, it will be a big help especially to those who work in farms. The researchers conducted an oregano organic pesticide research to reduce the detriment on the plants receiving the pesticide and the human who will use or eat it. This study is undertaken to create effective and fighting agent to kill pests in a reduced chemical components pesticide. This will help in diminishing destructive pests for the farmers.

#### **METHODS**

This research is an action research that aims to find the solution to the problems of farmers in pests and the problem in the pollution of the environment. This study used convenience sampling from non-probabilistic sampling.

#### **RESULTS**

Through gathering oregano leaves and the different ingredients, the researchers made the product themselves in the science laboratory, sprayed on the plants in Gulayan sa Paaralan, and observed and tested on the remaining days. In terminating pests, there are only few differences between the effectiveness of the usual synthetic pesticides to the organic pesticide. Although the synthetic pesticide gives a high effectiveness to the plants, organic is more efficient and affordable based on the data gathered. Most of the participant stated that the researchers must improve the oregano pesticide. The findings helped the researchers to know the other process on how to have a very effective pesticide. In overall data gathered through observing and interviewing, the effectiveness of the oregano organic pesticide in terminating pests is proven true.

#### **DISCUSSIONS**

Based on the obtained data through experimenting, observation and interview, it is feasible that the effectiveness of the oregano organic pesticide is highly proven. Oregano essential oil gives an activity or reaction opposing the pests and insects in plants. The researchers also found out that lessening the bad odor and making the liquid clear must be done on the pesticide. In terms of safety, the oregano organic pesticide is safer than the chemically-based pesticide. In terms of efficiency and affordability, oregano organic pesticide is truly more efficient and affordable.

**KEYWORDS:** Oregano Extracts, Pesticide, Essential Oil, Gulayan sa Paaralan, Pests

**SUBMISSION ID: R04A-BATANP-0756**

## **Organic Agriculture: Farmers' Strategy in Producing Organic Vegetables**

Lalaine Avegail S. Casapao, Department Of Education  
(Adviser: Mariel Austria)

### **Abstract**

#### **INTRODUCTION**

Today, organic agriculture finds itself in a more favorable position than ever. Regarding ways, skills, strategies, and methods, it still does not have sufficient resources to continue its expansion. To reach its full potential, organic farming needs to address those challenges. In this research, I found that some of our farmers developed and formulated their own strategies on how to produce vegetables through organic agriculture.

#### **METHODS**

A qualitative research, narrative inquiry design was used. By conducting a random sampling technique in picking the participants, the researcher used face-to-face interview as the main instrument, wherein some questions are asked to all the participants disregarding the farmer's gender and age.

#### **RESULTS**

Most of the farmers who participated in the study revealed their strategies in producing organic vegetables. It was categorized into two. First is the science-based superstitious beliefs rooted on traditional beliefs that through modernization and scientific advancement are now better to understand. Then, the proven practices which is scientifically proven and effective. In producing organic vegetables, those strategies of farmers were proven effective because it can increase the number of yields and can control the insects and pests in their crops.

#### **DISCUSSIONS**

The findings revealed that the strategies of farmers were proven effective. This research is highly relevant to other research because according to Lampkin (1990), there are different ways in organic farming that can control insects, weeds and other pests. The research demonstrated the need of seminars about the farmers' strategies in producing organic vegetables in order to orient the beneficiaries on what strategies they may apply in producing organic vegetables. They also need to show the people the big difference between organic and inorganic vegetables.

**KEYWORDS:** organic agriculture, organic farming, superstitious beliefs, scientific advancements, agricultural strategies

**SUBMISSION ID: R04A-BATANP-0113**

## **Organic Hydroponics: an Outlawed Technique for Lettuce Production**

Baby Erica Tanaotanao, Munting Ilog NHS  
(Adviser: Noel Anciado)

### **Abstract**

#### **INTRODUCTION**

Organic hydroponics seems to be an oxymoron (Atkins & Nichols, 2004). A lot of debates were done on these farming systems. They cannot be unified. Hydroponics is the method of growing plants in the water through the use of chemical nutrient solution. According to the Organic Agriculture Act of 2010, organic agriculture is a soil-based system and only focuses on soil enrichment through natural farm inputs. Meanwhile, the lack of space for lettuce production in the country causes shortage, thus, the increasing demand is not sustained. In an attempt to solve this issue, a self-formulated organically derived nutrient solution was made to know the possibility to produce lettuce in a hydroponics system without using any kind of chemical input.

#### **METHODS**

Components of artificial nutrient solution intended for lettuce were used as a basis. Leaves of home-grown plants were collected based on their nutrient content such as guava as source of Potassium, boiled, extracted, and served as the nutrient solution. Thirty plants were monitored in an improvised hydroponics system administered with the solution. In a span of 5 weeks, series of observation were conducted which included measuring of height, leaf length, and observing its appearance (color and shape).

#### **RESULTS**

It was found out that lettuce plants respond positively in the organically derived nutrient solution. Height and leaf length, as well as shape and color, were developed well throughout the observation period. However, compared to the hydroponics system that consumes commercialized nutrient solution, the growth rate was slower. A height of 8.8 cm and a leaf length of 4.4 cm in a span of 5 weeks attained in this study is lower than the average growth rate of a lettuce produced in a hydroponics system that uses commercialized nutrient solution. But in terms of color and shape, there were no remarkable or huge difference.

#### **DISCUSSIONS**

The results prove that it is possible to produce lettuce hydroponically using an organically derived nutrient solution. However, the results also imply that there is a need to consider other factors to improve the growth rate of the plants in this system. Therefore, the notion that organic agriculture principles can only be applied through the use of soil as media may be changed through this study. However, the produced yield still cannot be labelled as organic. For this reason, it is advised to use an organically derived nutrient solution for growing lettuce hydroponically, instead of using chemicals/artificial inputs.

**KEYWORDS:** Organic, Hydroponics, Lettuce

**SUBMISSION ID:** R04A-CAVITP-0368

## **Organic Mosquito Coil From Pulverized Pomelo (Suha) Peelings: Exterminator of Mosquitoes**

Ambreen A. Sysia, Denesa Rey Angela T. Palconit, & Marjaneli O. Bugarin,  
YES-O

(Adviser: Marjaneli Bugarin)

### **Abstract**

#### **INTRODUCTION**

The main purpose of the study is to make a natural mosquito coil from the Pomelo (Suha) peelings. It sought to determine its efficacy to be used as an alternative for the commercial one. The researchers were motivated to do a project that would convert Pomelo (Suha) peelings into an organic mosquito coil since Pomelo is a citrus fruit has a property that repels mosquitoes and locally available.

#### **METHODS**

Testing of the final product is applied through various trials to know if the mosquito coil made from Pomelo peelings would be a better exterminator of mosquitoes same as the commercial ones. After several tests, it was found out that the organic mosquito coil is good as commercial ones.

#### **RESULTS**

In this project, the researchers formulated a natural coil made of Pomelo peelings which is effective in dealing with mosquitoes. The natural mosquito coil has been effective in preventing mosquitoes based on the result of different trials. The table shows the testing of effectiveness of the organic mosquito coil versus the commercially sold mosquito coil. It also implies that 60% of the total number of mosquitoes were killed in using organic mosquito coil while 90% of the total number of mosquitoes were killed using the commercially sold mosquito coil in the market.

#### **DISCUSSIONS**

Based from the findings and analysis, it can be concluded that there are no significant differences in the effectiveness of the natural mosquito coil made from the Pomelo peelings as compared to the commercially sold mosquito coil in the market. Therefore, Pomelo peeling is a very effective yet natural way of preventing mosquitoes in mosquito prone areas.

**KEYWORDS:** Mosquito coil, pulverized pomelo peelings

**SUBMISSION ID: R04A-CAVITP-0469**

## **Oisea: Device for Oil Spill Cleaning**

Angelica Beatriz Hojas, Bea Mojica, & Coleen Huerto, Bucal National High School

### **Abstract**

#### **INTRODUCTION**

Oil spills caused by marine accidents and damaged ships are giving people a big problem, especially to the marine environment. It costs too much time and money to cleanup those damages that last for months or years, that's why the researchers came up of an idea of making a device that will attempt to minimize oil spills.

#### **METHODS**

The Oisea device was constructed following an approved design with features of crude oil and sea water separator that is remotely controlled by the user.

#### **RESULTS**

Result show that for the 10-trial functionality test, all results were successful in terms of accuracy, the 10-trial accuracy show that all results are successful. Hence, a success rate of 100%.

#### **DISCUSSIONS**

The Oisea device was found to be 100% successful in terms of functionality and accuracy. Therefore, this device is recommendable in the occurrence of oil spills.

**KEYWORDS:** Oil spill

**SUBMISSION ID: R04A-CAVTP-1631**



## **Mitticool Natural Refrigerator as an Alternative to Conventional Refrigerator**

Steven Andrei Nisortado, Student

(Adviser: Eric Hernandez)

### **Abstract**

#### **INTRODUCTION**

Conserving the food through any means possible such as preserving, fermenting, and refrigerating is a requirement in all households. The latter is the most used but not everyone is capable of buying refrigerators. To offer an alternative solution in this matter, an electricity-free mini refrigerator has been innovated, prevailing at an affordable cost and without maintenance. Mitticool, made entirely from Terracotta, was then invented. Based on the principles presented and the product itself, the researcher will study its components and mechanics (mainly pottery and evaporation).

#### **METHODS**

The researchers used the Grounded Theory approach wherein testing the characteristics of Terracotta, combination of sand and water, and principle of evaporation will uphold a result proving its effectiveness. A monitoring checklist was also used to check the initial and final temperature of the product after getting from the Mitticool Fridge.

#### **RESULTS**

After tabulating the results (initial and final temperature of products), the researchers discovered a big difference in the temperature of products after extraction. On the other hand, this does not necessarily have to be the case and the only basis of storing any kind of product. Anyhow, a list of non-perishable goods and other products was written in the research to serve as a guide to the reader.

#### **DISCUSSIONS**

The results showed that Terracotta (natural clay) helps in maintaining the coldness of foods and beverages. The sand and water combination was also a big help in maintaining and even lowering the temperature inside the Fridge because of evaporation. However, the cooling effect on the stored materials can only last for seven days as monitored. Moreover, this refrigerator presented a lot of advancements and advantages.

**KEYWORDS:** Terracotta, Mitticool, pottery, evaporation

**SUBMISSION ID: R04A-BATANP-0317**

## **Marigold Extract as Insect Repellant of Bok Choy**

Isaiah Arce, Naic NHS  
(Adviser: LOIDA ARCE)

### **Abstract**

#### **INTRODUCTION**

Farmers commonly plant Bok Choy not just because it is easy to grow, and not because it is one of the demands in markets, but it is often chosen by many farmers because Bok Choy can be planted all year round. Though there is a season for its good harvest, you can still grow it if you take good care of it. But even though with the fertilizers and water that keep the plants alive, insects still come to destroy them. That's why many experts in the field of agriculture invented pesticides, but it does not just kill insects but also us, farmers, and the consumers as well. That's why in this study, we found the alternative way to avoid insects in our Bok Choy, not by killing them but to repel them.

#### **METHODS**

Using the Descriptive Experimental approach, we conducted this study in a Farm on Palangue 2, Naic, Cavite. Having 80 Samples, we planted 20 Bok Choy per plot, which means we have 4 plots total. Our main solution is the Pure Marigold Extract and we have three treatment solutions including the Pure Marigold Extract. The first plot is for the Pure Marigold Extract treatment, the second plot is for the Pure Marigold Extract with Coconut Vinegar treatment, third plot is for the Pure Marigold Extract with the water irrigation's water treatment, and the fourth plot is for the Controlled. We observed for about 9 days to know which plot will contain the least or more insect visits.

#### **RESULTS**

It took 9 days of observation, as we expected, for insects come to the Bok Choy. The first plot that was treated with the Pure Marigold Extract got 3 insects on 3 different days. The second plot that was treated with the Pure Marigold Extract with Coconut Vinegar got the same number of insects but got 2 insects on the 8th day of observation. However the third plot, treated with Pure Marigold Extract with water from the water irrigation, got 18 insects total, 16 insects on the 6th day of observation, and 2 on the 9th day.

#### **DISCUSSIONS**

We determined the most effective treatment through the less number of insect encounter, since our goal is to repel insects. Then we determined the less effective treatment through which treatment got the high number of insect encounter. Pure Marigold Extract and Pure Marigold Extract with Coconut Vinegar are the most effective for having a mean of 0.33 which is being interpreted as 1 insect per day. The treatment Pure Marigold with water from the water irrigation, this treatment solution is less effective compare to the two treatment solution having a mean of 2.1, which is interpreted as 2 insects per day.

**KEYWORDS:** MARIGOLD EXTRACT, INSECT REPELLANT, BOK CHOY

**SUBMISSION ID:** R04A-CAVITP-0052

## **Making an Effective Facial Scrub Out of Coffee Bean Residues**

Aisa Sarne, Tagaytay City Science National High School

### **Abstract**

#### **INTRODUCTION**

The main objective of the study is to produce a facial scrub out of coffee bean residue that will help people to have younger and smoother skin. It also aimed to assist people who have problems in using commercialized products in order to lessen their expenses and skin problems.

#### **METHODS**

The researchers used the following procedures in making the product: The used coffee bean residue were pounded to reduce its size and make it smooth. The grounds were separated, where the small coffee grounds were used to make the product. Then, the researchers purchased the other ingredients: egg white, aloe vera, and brown sugar. The extract from aloe vera was also used. Three (3) tablespoons of ground coffee was mixed with  $\frac{1}{4}$  cup of brown sugar. The researchers put one (1) egg white and two (2) tablespoons of aloe vera extract. They mixed all the ingredients, stirred the mixture in one direction and boiled until the ingredients mixed well. After boiling, they allowed the product to cool down so it will be ready for packaging.

#### **RESULTS**

The product smells pleasant because of the ground coffee residue and the brown sugar made it attractive to the respondents. It may be preserved because of brown sugar contained in the facial scrub. Aloe vera is a factor because of its nutrients that soothe and conditions the skin. Once used, it must be stored properly to preserve the product.

#### **DISCUSSIONS**

The researchers concluded that the results can be drawn by extracting and mixing. Some ingredients are extracted and mixed with the coffee bean residue. The physical property showed that it is moisturized like other facial scrubs and it smoothens the skin. The chemical property such as the insolubility was shown.

**KEYWORDS:** Facial Scrub

**SUBMISSION ID: R04A-CAVITP-0729**

## **Hydroponics and Aquaponics: Bases of Growing Rice at Santisimo Rosario National High School**

Arvin C. Castillo, Santisimo Rosario National High School  
(Adviser: Maria Monica Angeles)

### **Abstract**

#### **INTRODUCTION**

Rice is a common food that Filipinos eat. Almost all Filipinos eat rice as their daily food. But as noticed, the consumption of rice will lessen in the near future, since rice fields are becoming subdivisions and industrial parks. In this case, the harvest grains of rice will also lessen due to modernization and may affect the life style of the whole citizens in the Philippines. Because of this problem, researchers come up with this research title "Hydroponics and Aquaponics: Basis of Growing Rice at Santisimo Rosario National High School."

#### **METHODS**

Quantitative-descriptive research design was used. The researchers were able to assess the patterns of development of rice growth among hydroponics, aquaponics and natural-grown set-ups respectively through field observation scale. Results were tabulated, analyzed and interpreted. To determine the significant difference among the set-ups, Analysis of Variance (ANOVA) was applied.

#### **RESULTS**

Overall results showed Hydroponics system stood out the most among the three variables having a total mean of 4.30 and an SEM of 0.10 which is followed by Aquaponics with a total mean of 4.15 and an SEM of 0.15. Lastly, natural-grown with an average mean of 3.41 and an SEM of 0.02. Even though the results are close to each other, we can clearly notice that Hydroponics somehow surpassed the two set-ups.

Differences among variables presented have the  $F_{cal} = 14.95$  and  $p\text{-value} = 0.001$  which can be verbally interpreted as not significant. Thus, the null hypothesis stating that there is no significant difference among rice planted on a hydroponics, aquaponics and natural-grown systems is accepted. This indicates the effectiveness of hydroponics and aquaponics set-ups can on the growth of rice since it gives the same effect as the natural-grown set-ups

#### **DISCUSSIONS**

Researchers recommended to maintain good quality of water because it is the life-blood of the Hydroponics, Aquaponics and Natural Grown system. It is the medium through which all essential nutrients are transported to the plants, the animals and the soil. Using Pureganic on Hydroponic set-up is a great alternative fertilizer because it is composed of all the macro and micro nutrients that needed of plant to survive. Implementation of the following set-ups was a constant factor in the success of the innovation.

**KEYWORDS:** hydroponics, aquaponics, rice growth, agriculture

**SUBMISSION ID:** R04A-SANPAB-0021

## **I Staff: Walking Stick for the Blind**

Alliyah Berganos, Jahnah Nikos M. Corpus, & Julie Anne C. Barrera, Bucal  
National High School

### **Abstract**

#### **INTRODUCTION**

One of the biggest challenges for blind people is to roam around or navigate unfamiliar places. Hence, their participation to some social and physical activities is limited. This makes them resort to using either a walking stick or having a friend or family member walk them around. Either way, this makes a walking stick a necessity for the blind.

Because of this, the researchers thought of how the basic walking stick can be upgraded to be suited to the needs of the intended users.

#### **METHODS**

The I Staff was constructed following an approved design with features of alarm and sensors enabling the blind to perceive his surroundings and minimize exposure to hazards. It was tested for accuracy and functionality of programs and features which can be determined by indicators 1 and 0 corresponding to success or fail, respectively. Thirty sets of data per function were collected, analyzed, and interpreted.

#### **RESULTS**

Results of the 30-trial functionality and accuracy test reveal the following results: sensors 30 out of 30, alarm - 30 out of 30, security (Taser) - 30 out of 30, programming of the device - 28 out of 30, and water resistance - 28 out of 30.

#### **DISCUSSIONS**

The following success rates of each part was obtained: sensors - 100%, alarm - 100%, security (Taser) - 100%, programming of the device - 93%, water resistance - 93%. This only reveal a success rate of 97% for functionality and accuracy. Therefore, this device is recommendable for use among blind people.

**KEYWORDS:** I staff, Walking stick, Blind

**SUBMISSION ID: R04A-CAVITP-0721**

## **'Harvesting Electrical Energy from Tilapia Fish gill (*Oreochromis niloticus*) Using MFC**

Agnella Carene Mongado, Antonette Gabrielle Angeles, Jan Lee Loren, &  
Zildjian Lee Loren

### **Abstract**

#### **INTRODUCTION**

The study focused on a bio-electrochemical system that drives an electric current using bacteria and mimicking bacterial interactions found in nature, which is called MFC or Microbial Fuel Cell. It will be a great solution to those who have been struggling about their electric bills, mostly under privileged citizens. It aims to find easier and more reusable processes of decaying such kind of waste materials, like fish gills. It can be a way to find out an alternative source of energy, using waste fish gills. Studies have indicated that, decomposing this kind of waste can somehow be a cause of diseases, including fever. The great purpose of the study is to look for answers to the following problems in such affordable way.

#### **METHODS**

The study was conducted to produce electricity from a prototype microbial fuel cell. The device is composed of two tube cell, the first one is sludge having the waste material about one fourth kilogram, wherein the waste material (tilapia gills) has undergone the process of decaying, and contains nutrients and organic matter including *Shewanella oneidensis* (positive). The second tube cell, having the salt directly proportional with the first tube cell, was used to work as an electron acceptor.

#### **RESULTS**

Results of investigation shows that the amount of electrical energy produced by the set up was 6.3 V and that this electrical energy was enough to power a small light bulb.

#### **DISCUSSIONS**

The results shows that the prototype of microbial fuel cell with fish gills and sludge can harvest enough energy to light a single bulb. And if this study continues the greater amount of gills that will be used, the lesser the garbage we might have and also the stronger power of electricity you may harvest. This prototype proves that even waste materials can be a powerful source of electricity that can use in our daily lives.

**KEYWORDS:** Electrical Energy, Fish Gills, Microbial Fuel Cell

**SUBMISSION ID: R04A-CAVITP-1657**

**GAWAD PINYA: Mechanism on Recognizing Exemplary Performance  
and Contributions of Department of Education Calauan District  
Employees and External Stakeholders**

Florentina Rancap, Department Of Education - Laguna - Calauan District

**Abstract**

**INTRODUCTION**

GAWAD PINYA is a distinctive way of giving honor to Department of Education Calauan leaders and learning facilitators for their dedicated, efficient and outstanding performance and external stakeholder's special contribution in attaining Department of Education's mission of protecting and promoting the right of every Filipino to QUALITY education. This acronym means Giving Award of Worthy Admiration to Dedicated Performing Individuals Nurturing Youth's Abilities. Praise increases an individual's productivity, the act of recognizing desired behavior increases the repetition of the desired behavior. It also brings greater employee gratification and enjoyment of work. If employees are recognized, they will have more time spent focusing on the job and less time complaining. Recognition is essential to an outstanding workstation. It makes people feel respected and valued by others for their special/outstanding contribution.

**METHODS**

The study used the quantitative-qualitative research design. Questionnaires were administered and responses were analyzed and interpreted. Purposive homogeneous sampling techniques were used in choosing the sample.

**RESULTS**

1) 50 out of 81 rated 5 or were highly satisfied, 28 rated 4 or satisfied, and 3 respondents rated 3 or were slightly satisfied with GAWAD PINYA as a means of giving recognition to the exemplary performance of Department of Education Calauan Employees that brought distinctive accomplishments and performance to Calauan district. 2) As per comment and description on GAWAD PINYA, all 81 respondents gave positive feedback. 3) 100% of the 81 respondents answered YES that GAWAD PINYA could be a tool in improving the performance of every employee in the Department of Education family. 4) 100% or all 81 respondents agreed that GAWAD PINYA be used as an annual or yearly means of giving recognition to performing employees of Calauan District.

**DISCUSSIONS**

All school heads and members of the TWG, representative from teacher-awardees and teacher-attendees from each school were used in this study with a total of 81 respondents. GAWAD PINYA is the first award giving mechanism to recognize exemplary performance of Department of Education Calauan Employees that brought distinctive accomplishments and performance to Calauan district.

**KEYWORDS:** Awards, recognition, exemplary performance, distinctive accomplishments

**SUBMISSION ID: R04A-LAGUNA-0145**

## **GEM Tech (Greenhouse Environment Monitoring Technology)**

Bianca Ross Bersabe, Eariel Francisco, Rei Mari Gabriel Untiveros, &  
Vernadette Raymundo, Cavite National Science High School

### **Abstract**

#### **INTRODUCTION**

Plants, especially seedlings, are very delicate. Thus, they need controlled environmental parameters such as temperature, light intensity, humidity, pH, and soil moisture suitable for them to survive. If not, the global food shortage that we are experiencing would continue to rise. The Philippines has long been particularly vulnerable to extreme wet and dry seasons happen in the country that greatly affect the ability of the plants and crops to grow. The automated greenhouse is capable of changing its internal climatic conditions to fit the needs of the plants placed in it.

#### **METHODS**

The GEM Tech prototype was first designed and constructed. It was composed of Arduino Mega 2560 Microcontroller, LEGO NXT brick, sensors (humidity, temperature, light intensity, pH, and soil moisture), and devices used to change the greenhouse's internal climatic conditions. The components were contained in a greenhouse-like prototype made of polycarbonate glass, aluminum bars, and aluminum sheets. It was programmed with different parameters needed by the mushrooms for initial testing using the C++ programming language. It was powered by a solar panel. The climatic parameters, mass, and quantity of the mushrooms were observed.

#### **RESULTS**

The accuracy of the GEM Tech was 100% accurate in overall movement of the greenhouse's motor-powered devices; 100% accurate in recording readings of the greenhouse's sensors; 100% accurate in displaying sensor readings on the LCD; 100% accurate in Wi-Fi connectivity of the greenhouse via the Arduino Wi-Fi shield; and 90% accurate in Bluetooth connectivity. The quantity of mushroom clusters inside the greenhouse had an average of 1.89 per pack in the three trials that were conducted which was close to the maximum number of clusters per pack which is two. In mass of mushroom clusters, the average mass in six mushroom packs was 14.78 g with a maximum of 18 g in Trial 3. According to the article entitled "Weight Equivalents: Mushrooms" (n. D.) from the website Hannaone.com, the average mass of a small cluster of oyster mushrooms is 15 g.

#### **DISCUSSIONS**

The results prove that GEM Tech could provide plants with different environmental parameters and climatic conditions suited to achieve the plants' optimum growth by modifying the parameters in every sensor. This research study could help the agricultural industry as well as the environment, since the GEM Tech is eco-friendly through the use of solar panels.

**KEYWORDS:** Arduino Mega 2560 Microcontroller, Arduino Wi-Fi Shield, C++ programming language

**SUBMISSION ID: R04A-CAVTP-0657**



## **Gravity Sourced Pedaled Personalight (GraSPP)**

Joshua Almari, Kristine Cameron Felix, Kyla Charis Dela Cruz, & Patrish Julia Villano, Bian Integrated National High School

### **Abstract**

#### **INTRODUCTION**

Appropriate understanding in searching for alternative energy source should be regarded as an essential research in the world. Renewable energy are energies which came from natural sources like sunlight, water, and etc., and numerous studies have already claimed useful alternative energy sources to help serve communities. But there are billions of people who have limited access in electricity which made the researchers explore this innovation, an accessible source, which is gravity in generating power.

#### **METHODS**

The project is designed as a pedal and gravity-powered light wherein the pedal will pull the weight up from a high altitude that would drive a handcrafted gear to a main wheel, where the rope is attached, so the gravitational energy of the weight will be converted to electrical energy. When the weight falls from a high altitude, the potential energy of it will be converted to kinetic, thus converting it to electricity that would come from a generator, and it produces energy that powers an LED light and a charging port.

#### **RESULTS**

The wholly measures and procedures were shown in the prototype. The force exerted on the pulley system, duration, velocity, and the voltage produced by the generator was strictly observed. Individual observation for each condition was conducted, expected number of trials were determined depending upon the result of the proposed designs: when weight is constant, when height is constant, when both parties are not constant.

#### **DISCUSSIONS**

Researching alternative energy source has become an essential for people, and to the researchers. Today, they make use of renewable energy such as gravity which this study explored. The GraSPP project, with its fundamental concepts provided solution to some of the complications the researchers might experience. This project helped by using the weight's potential energy to be converted to kinetic energy that would react to a certain force (gravity) once the weight starts falling very slowly. This kinetic energy produced electricity that came from a generator that would eventually produce light energy from the LED light.

**KEYWORDS:** gravity, LED, GraSPP

**SUBMISSION ID: R04A-BINANC-0003**

## **Fantastea Paint**

Jannel Sherry Magsino & Jonalyn Manguino  
(Adviser: Johnny Mendoza)

### **Abstract**

#### **INTRODUCTION**

There are toxic paints that are used for educational and beautification purposes. Paint used by many people, such as children and painters, are not safe because these have poisonous content and with a bad smell that can affect the health. The continued use of toxic resources in massive amount results to too many nations and countries of the world will have to deal with not healthy and friendly environment. In Calamba Integrated School, there are many health conscious teachers who are drinking tea every day. The researcher tried to search for the things that can be utilized in those teabags used by the teachers. The researchers would like to utilize it in using environmental-friendly paint. Specifically, this research aims to determine the acceptability of FANTASTEa in terms of appearance, texture, and smell.

#### **METHODS**

This action research used experimental design. Boil 5 cups of water 8 minutes. Add the pandan leaves and lemon grass to the boiling water let it boil for 3-5 minutes; it will help to get a pleasant scent. After getting the pleasant scent, add the 10 pcs of used tea bags. Using the wooden spoon, squeeze the tea bags to get the extract. Mix  $\frac{1}{4}$  cup potato starch and  $\frac{1}{4}$  cup baking powder. Then add 2 table spoons of mixed potato powder and baking powder. Stir the mixture attentively. Continue stirring the mixture in 25 minutes while adding the  $\frac{1}{2}$  tsp of vinegar; this is because it has a very strong acetic properties to make the color bright. Add  $\frac{1}{2}$  tsp of salt because it can help to hold up the color of a mixture. Lastly, let the mixture cool for about 3-5 minutes then add the  $\frac{1}{8}$  tsp of virgin coconut oil because it can also brighten the color of paint. Ten respondents were chosen by random sampling to evaluate the ability of Fantastea paint. In analysis of variables such as appearance, color, texture, smell, and acceptability, a weighed mean, as well as the Likert scale, was used to determine the acceptability.

#### **RESULTS**

Based on the result of the table above, the respondents perceived that the appearance (3.40), texture (3.90) and smell (3.80) are very acceptable.

#### **DISCUSSIONS**

Based on the result, tea bag is feasible in making environmental friendly and odorless paint.

**KEYWORDS:** Tea, Paint

**SUBMISSION ID:** R04A-CALAMB-0025

## **Feasibility of Charcoal as an Alternative Marker Ink**

Kristel Anne H. Cruto, SHS Student  
(Adviser: Elenita F. Hernando)

### **Abstract**

#### **INTRODUCTION**

Charcoal is a hard black material that is made of burning wood with the small amount of air. The researchers investigated the viability of charcoal as an alternative marker ink in terms of absorption, color, and odor.

#### **METHODS**

Descriptive research design was used in the study. The population of this study were forty (40) Grade 11 students in Accountancy and Business Management, General Academic Strand, and Technical Vocational Livelihood track. An adapted and modified survey questionnaire was used in gathering data and results.

#### **RESULTS**

Based on the results of the study, charcoal was viable as an alternative source of producing marker ink. The charcoal ink was rated Very Good in terms of absorption and color. However, findings revealed that charcoal obtained a descriptive rating of good for the odor as well as writing material to some varieties of paper such as pad paper, manila paper, and bond paper.

#### **DISCUSSIONS**

The research findings revealed that charcoal can be used as an alternative marker ink with its good absorption, color, and odor as tested in some writing materials. However, it is recommended that another study be conducted to further enhance its odor, color and consistency.

**KEYWORDS:** charcoal, marker ink, visibility, alternative

**SUBMISSION ID:** R04A-CAVTP-0424

## **Feasibility of Duckweed (Lemnoideae) as Broiler Feeds**

Lyka Jean L. Baron, Quirino General High School  
(Adviser: Rodalyn Q. Aquino)

### **Abstract**

#### **INTRODUCTION**

Here in the Philippines, poultry is one of trends in agriculture. Poultry owners always take the risks of raising chicks and make it as a business or sources of income. However, poultry farming is not that easy, according to the poultry owners whom we know. The reason why is because chicken requires lots of nutrients such as protein, vitamins A and D, grit, calcium, and many more. They also have to be kept in warm temperatures, a proper cage space, and fed properly every day. Meanwhile, there is tiny, slimy and green aquatic plant that contains most of the requirements needed by chickens. This aquatic plant is free and can be easily propagated for those who want to propagate it. Considering all of the problems that poultry owners encounter, we, as researchers, want to help in lessening the burdens being carried by them through testing the feasibility of duckweeds as broiler feeds.

#### **METHODS**

This study used experimental method. By using the ad libitum method, the different treatments were fed to the broilers with proper dosage every day. The following treatments were: T0-Commercial feeds, T1-70% duckweed and 30% darak, T2-60% duckweed and 40% darak, and T3-30% duckweed and 70% darak. After applying the different treatments daily, the researchers recorded the mass of the broilers weekly. With data collected through Analysis of Variance (ANOVA) of use of the duckweed at broilers that were placed at the cage with different labelled- treatments to identify.

#### **RESULTS**

The different ratios of duckweeds as broiler feeds have an effect to the broilers in terms of mass and survival rate. However, there is no significant difference on the effect of the different ratio of duckweeds as broiler feeds compared to commercial feeds.

#### **DISCUSSIONS**

Based on the gathered data, there is no significant difference obtained on the mass gain of the broilers in the different treatments. This implies that the null hypothesis stating that there is no effect of duckweeds on broiler feeds in terms of mass gain is accepted.

**KEYWORDS:** duckweed, broiler, poultry owners encounter

**SUBMISSION ID: R002-QUIRIN-0025**

## **Feasibility Study about the Three-Layer Smoked Fish Kiln**

Britchielyn Morbos, Student

### **Abstract**

#### **INTRODUCTION**

Rosario, Cavite is known for its production of smoked fish that is exported worldwide. However, the traditional fish smoking process requires 3-4 hours to produce smoked fish. The smoking process also releases high amount of carbon dioxide. Aside from this, fishes are exposed to chemicals like Polycyclic Aromatic Hydrocarbon (PAH), which are carcinogenic. This study aims to make a prototype for an improved fish smoking kiln. The kiln uses sugarcane bagasse as the smoke generating source because of its low PAH on the fish. Also, activated carbon is used as an air filter to lessen the amount of smoke that was released. This study also determines the feasibility of the kiln to produce evenly-cooked smoked fish in a shortened period of time in relation to the traditional process. The aim is to determine if there is decrease in moisture content in the fish after smoking process.

#### **METHODS**

Qualitative-Descriptive Design was used in the experiment. The researchers made a design with the help of a mechanical engineer. Necessary materials for the kiln were collected which includes: 4-20m angular steel bar, 2-4ftx8ft gauge 25 galvanized steel, 100 pieces of ribbit bullet. The researchers also collected the activated carbon, sugarcane bagasse, and the 50 rounds cad (fish to be smoked) that are necessary to the process. Then, the kiln was welded and fastened using ribbit bullet in a near welding shop. After this, the fish smoking process will take place. Fishes were eviscerated and cured in traditional way. Fishes were weighed for the computation of moisture content that was given by Koshmanesh (2006).

#### **RESULTS**

To determine the feasibility of the three-layer smoked fish kiln, the number of evenly-cooked fish was determined. All fishes were evenly-cooked since it was golden brown. The kiln were able to cook the smoked fish in 1 hour using a big amount of smoke source. Also, moisture content was reduced up to 20% which is on safe range of 15%-25%.

#### **DISCUSSIONS**

Feasibility of three layer smoked fish kiln was determined. The Kiln produce evenly-cooked and high quality smoked fish in a shortened period of time. It was suggested to improve the design of the kiln. Use of robotics technology to improve the performance of the machine and give it a modern technological touch. The researchers recommend to include boiling process inside the kiln so it will evidently beneficial to the fish smoking industry. It is recommended to determine the shelf life of fishes undergone the smoking process in three layer smoked fish kiln and the effectiveness of the kiln in producing smoked fish.

**KEYWORDS:** Invented Machine

**SUBMISSION ID:** R04A-CAVITC-0046

## **Fiber Glass Wool as an Alternative Composite Material in Making Bricks**

Gewell Umandal, Ray John Dionido, & Trisha Aniversario

### **Abstract**

#### **INTRODUCTION**

Glass wool is an insulating material made from fibers of glass arranged using a binder to create a texture similar to wool. The process traps many small pockets of air between the glass, and these small air pockets result in high thermal insulation properties. Glass wool is produced in rolls or in slabs, with different thermal and mechanical properties.

The study entitled Fiber Glass Wool as an Alternative Composite Material for Creating Bricks, was conducted in order to test the durability and strength, bricks, fiber glass wool as alternative composite material.

#### **METHODS**

The experiment used three (3) Treatments as T1 (with 24g of glass wool), T2 (with 47g of glass wool) and T3 (with 71g of glass wool). There were three (3) replicates per treatment. Each mixture was placed in a brick molder and was put under the sun for twenty-one (21) days until it thoroughly dries. The bricks were tested for breaking load in flexure.

#### **RESULTS**

Results of the investigation show that the breaking load of each Treatment are 3,689.67N for Treatment 1, 4,968.33N for Treatment 2, and 3,722.33N for Treatment 3.

#### **DISCUSSIONS**

Based from the results of investigation, the mixture in Treatment 2 is the most durable and strongest brick as it has the highest average maximum breaking load of 4,968.33N. On the other hand, the mixture in Treatment 2 and Treatment 3 exhibited an average maximum breaking load of 3,689.67N and 3,722.33N respectively.

**KEYWORDS:** fiberglass

**SUBMISSION ID: R04A-CAVITP-1659**

## **Evaluation of Particulate-Filtering Device in Reducing the Particle Emission of a Gasoline-Powered Motorcycle**

John Zairen Bon, Bucal National High School

### **Abstract**

#### **INTRODUCTION**

Motorcycles emit smoke that contain hydrocarbons, carbon monoxide, and carbon dioxide which is harmful to one's health and to the environment. Considering these information, the researchers designed, constructed, and tested a filtering device using activated charcoal, sand, and aerial roots of rubber plant (*Ficus elastica*) as absorbing materials.

#### **METHODS**

The pollutant-filtering device was designed and constructed based on a pre-set specification. To come up with an exhaust pipe filter, the activated charcoal, sand, and aerial roots of rubber plant were combined and wrapped inside gauze. Then, the gauze containing the materials needed were put inside a cylindrical can and then sealed. After sealing, the device was attached at the end of motorcycle's exhaust pipe. A motorcycle with gasoline was subjected to smoke emission test. With the use of Automotive Emission Analyzer, the hydrocarbon reading obtained without using the device and the amount of hydrocarbons emitted with the use of the device were recorded and compared.

#### **RESULTS**

Results show that before using the pollutant-filtering device, the hydrocarbons content of smoke emitted by a single gasoline- powered motorcycle was measured and the following means are obtained: HC ppm- 76, CO%- 0.99, and CO2 %- 0.6, and O2 %-19.4. On the other hand the means obtained when the device was used are as follows: HC ppm-28, CO %- 0.26, CO2 %-0.1, and O2 %- 20.6.

#### **DISCUSSIONS**

Results show the following success rates of each pollutant: HC ppm is reduced by 64%, CO is reduced by 74%, and CO2 is reduced by 83%. What's interesting is that the O2 is increased by 6%. This reveals that the device made with activated charcoal, sand, and aerial roots of rubber plant (*Ficus elastica*) is effective in filtering and adsorbing. This also means that the Particulate-Filtering Device is effective in reducing hydrocarbons pollutants from gasoline powered motorcycle.

**KEYWORDS:** Exhaust filter

**SUBMISSION ID: R04A-CAVTP-1651**

**Efficiency of Lemongrass *Cymbopogon Winterianus* Jowitt  
(Poales:Poaceae) as a Common Household Fly Repellant**

Alyza Magpantay

**Abstract**

**INTRODUCTION**

Commercial products against pest are rampant in the market. However, environmental threat due to usage of synthetic materials are being raised. As a result of these, organic methods in controlling insect population gain worldwide recognition.

As a tropical country, the Philippines is always visited by different types of weather ranging from very dry to very wet seasons. The threat of tropical diseases caused by different organisms such as bacteria and viruses is very evident in our country. These threats uses insects, particularly flies as vectors to enter the human body.

**METHODS**

Extracting the lemongrass - Lemongrass of about half a kilo were allowed to boil until the water turned yellowish. The temperature was then lowered into 20OC after 20 minutes. The plants were then removed, and the solution was subjected to exposed evaporation. Extract was then placed into a small container. Set-ups -To assess the efficiency of pure lemongrass extract versus the use of candle as an aid to the extract, three different set-ups were made. The baits used includes 1.) Common children candy, 2.) Processed meat, and 3.) Artificial bait. Two ways of using lemongrass were arranged, these includes 1.) Direct application of lemongrass extract and 2.) Using candle over the extract. Extracting the lemongrass - Lemongrass of about half a kilo were allowed to boil until the water turned yellowish.

**RESULTS**

Essential oil is one of the important components of lemon grass extracts and its applications include co-ingredients for perfumes and cosmetics. Its high citral composition has made it important for several chemical syntheses.

Lit candles serve as a medium for the essential oils to be more scattered compared to that of pure application. However, it can be assessed that the depending on the usage that the consumer want, either direct or with the use of candles, the essential oil of lemongrass can still be useful.

**DISCUSSIONS**

It has been illustrated that the use of essential oils of lemongrass is an effective insecticide. However, depending on the usage, whether direct or with the aid of candle flame, its efficiency can be maximized. It is therefore suggested that there must be further researches involving the efficiency of extracting the essential oils. More advanced methods on extracting the oils to yield better amount from the plant is necessary. Innovations in making the insecticidal property of the oils must be further studied.

**KEYWORDS:** lemongrass, artificial bait, extract

**SUBMISSION ID: R04A-TANAUA-0208**



## **Electro-Culture: Utilizing Electricity in Agriculture for Better Crop Yield**

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Tanauan City East, Balele Elementary School

### **Abstract**

#### **INTRODUCTION**

The usage of electricity to hasten plant's growth was studied for almost a century. This application was used in many countries both in large and small scale farms and greenhouses. However, there is no standard technique or set-up identified that will give the best result for the plant growth. In the Philippines, agriculture fuels the economy. It is significant to study innovations like these to create more efficient ways to grow our crops.

#### **METHODS**

Showing the effect of electricity to plant growth requires miniature set-up of some laboratory farms across the world. It involves a circuit wherein the electric current flows towards a ground that is situated in the plant's growing pots.

#### **RESULTS**

In terms of the viability of the seeds. Both species showed higher germination rate when the seeds are applied with electricity. This is accounted to the cytoplasmic streaming of the electric current that makes the germination of the seeds more effective. The results are congruent with the findings of previous researchers about electro-culture. This proves that the positive effect of electro-culture can also be applied to the Philippine crops.

#### **DISCUSSIONS**

Electro-culture is a highly disputed concept in agriculture. But several studies proved the positive effect of electricity to plant growth. In this study, we showed that the Philippine crops can also be applied with electricity to increase the seed's viability and growth rate. Using a simple-circuit in applying electric current into the plants, the data collected supports the claim that the electricity makes a higher germination rate and a higher growth rate.

**KEYWORDS:** electro-culture, mung bean, electricity

**SUBMISSION ID: R04A-TANAUA-0095**

## **Effects of Cardava Peel Fiber as an Additive in the Compressive Strength of Concrete**

Adrian Joseph Buenaventura, Joshua Jae Aquino, & Stephenn Andrei Vergara  
(Adviser: Nicko Reyes)

### **Abstract**

#### **INTRODUCTION**

The Philippines is considered to be abundant in forest products, especially banana trees. Banana is a quick growing and versatile product. Due to its low cost and maintenance, banana has numerous applications. In this study the cardava banana, commonly known as 'saging na saba', peel fiber is used as an additive on the concrete mixture because its age and moisture content have a significant influence on the compressive strength of the concrete.

#### **METHODS**

The cardava peel fiber underwent a preservation method called submersion in which the different concentration of cardava peel fiber were soaked in sodium benzoate for 24 hours. It was then dried using a microwave for 60 minutes and partitions were made by mixing 2%, 5%, and 8% concentrations of Cardava peel fiber to the concrete mixture and was replicated twice. The data was tabulated and treated using t- test.

#### **RESULTS**

The concentration of 5% Cardava peel fiber concrete mixture has the highest compressive strength compared to the standard concrete mixture, and the 2% and 5% cardava peel fiber concrete mixture.

#### **DISCUSSIONS**

The different concentrations of the Cardava peel fiber directly affect the psi of the concrete. The mean psi of the concrete mixtures showed that the concrete mixture with 5% Cardava peel fiber concentration has the highest psi. This means that the concrete with 5% Cardava peel fiber concentration is the most effective in increasing the compressive strength of concrete.

**KEYWORDS:** banana peel, cardava peel, compressive strength, cement mixture

**SUBMISSION ID: R04A-CAVITP-0018**

## **Effectiveness of Chick Pea Seed (*Cicer arietinum*) and Solar Heat as Coagulant for Water Purification**

Maria Isabel Bilbao, Student

### **Abstract**

#### **INTRODUCTION**

Many families have no access in water in the present time so they tend to used unsafe water to use in their everyday living. Unsafe water contain contaminants that causes diseases including diarrhea that reported with highest death cases each day. For this reason, water purification study was conducted. The combination of a natural indigenous seed, the cicer arietinum, and solar heat as a coagulant in water purification. This study mainly focused on the removal of turbidity and coliform

#### **METHODS**

The experiments were carried out with three treatments the T0 (0 seed- 1 liter) or the control group, T1 (1 seed- 1 liter), T2 (2 seed- 1 liter). In the experiment, the dry seeds were crushed and poured the corresponding concentration of the powder in the treatments to the right marked bottles equally exposed to sunlight for about 6 hours.

Nephelometers are the instruments used for measuring the turbidity of water and Coliform Bacteria Analysis to test the total coliform of the water sample.

#### **RESULTS**

The data from the laboratory test were computed and analyzed. The results showed that in T1 (1 seed- 1 liter) have a 78.1% turbidity removal efficiency and 67.5% coliform removal efficiency while in T2 (2 seeds- 1 liter) for about 85.79% in turbidity removal efficiency and 86.25% in coliform removal efficiency. The highest turbidity removal efficiency and coliform removal efficiency was obtained in the treatment with 2 seeds. Results revealed that there is a significant difference between the treatments and the control group in turbidity and coliform based on the data computed.

#### **DISCUSSIONS**

The study concludes that Chick pea seed and solar heat as a combination for water purification is effective in removing turbidity and coliform in contaminated water. The study suggest to the future researcher to test other parameters and suggested to have a new source of water sample.

**KEYWORDS:** Cicer arietinum, Solar Heat, Coagulation, Water purification.

**SUBMISSION ID: R04A-CAVTP-0882**

## **Development of Real Time Monitoring and Trapping System for Rice Black Bug**

Renzdolf Villanueva, SHS Teacher III

### **Abstract**

#### **INTRODUCTION**

The impulsively fluctuating climatic conditions and the supplementary effects demand the protection of forestry and cultivation. Pests, bugs, and insects are the main issues that distress the development of crops. Eventually, monitoring and trapping of bugs becomes a more challenging task. The traditional human operators execute surveys of the traps dispersed over the field at regular intervals. This encompasses more work, requires considerable time, and is not consistent. It is not effective on economic grounds too. These limitations in the existing systems call for automation with affordable cost.

#### **METHODS**

The Real-Time Monitoring and Trapping System for Rice Black Bug, serves as a unique way of trapping and monitoring which identifies the level of infestation. The project was developed using trapping mechanisms consisting of different stages. The electronic principal components is essential for the identification of the required data to be send trough SMS Notification. Some of the data reflected are time, date, location, and the number of the rice black bugs. The system runs in different weather conditions in the Philippines.

#### **RESULTS**

Effective pest trapping will be highly favorable to the farmers while capturing and sending the images of pests will be helpful for further analysis in agricultural fields. Moreover, this will be definitely helpful in reducing the usage of pesticides since automatic trapping is efficient and effective. A statistical analysis is made on the probable time of high pest population and a trap with three layers of different thickness is designed to capture various sizes of prominent pests. A low cost image sensor is used to capture the images of trapped pests and the images are sent to a remote control station. The information thus acquired enhances the estimation of pest concentrations in farms. The system device was evaluated by a thirty experts using the TUP Evaluation Instrument for Prototypes. The system device was rated outstanding by the respondents.

#### **DISCUSSIONS**

The next evolution in pest management is the use of insect traps to monitor and reduce the insect populations. Therefore, using the collected information the system device can suggest farmers to use appropriate pesticides and insecticides for their crops. This reduces the effects of harmful chemicals on soil and improves the soil quality without compromising on the yield.

**KEYWORDS:** Pest management, rice black bug, trapping system, real-time monitoring

**SUBMISSION ID: R04A-LUCENA-0000**

## **Cocos Nucifera (Coconut) as Alternative Floorwax**

Sharon Manimtim, Tagaytay City Science National High School

### **Abstract**

#### **INTRODUCTION**

Floor wax is important in many households for it makes the floor look shiny and clean. As of today, there are many brands of floor wax that are used by people and are indeed very effective. However, the harmful effects of the said product are often never considered. The chemicals that the product contains can be harmful to the masses when inhaled and can cause diseases. The problem stated became one of the reasons to conduct this research. The researches thought of a way to avoid using chemicals and that is by using natural resource such as coconut meat, so not only will the aforementioned resources make the product effective, the negative outcomes due to chemicals are also avoided.

#### **METHODS**

The coconut meat was grated from the coconut grater by the researcher. The milk was extracted from the coconut meat because the milk wasn't included in the study and was saved for future use. In a double boiler, the candle wax was melted while the coconut meat was cooked in oil for fifteen minutes. The cooked coconut meat was strained and mixed with the melted candle wax. The mixture was kept in a container and placed in a room with a temperature not exceeding 30°C. The coconut oil was also used and the same procedures were applied. Three set - ups were made with different measurements of variables. The products were tested by replacing the respondent's floor wax with the researchers' samples and were put into use for a week.

#### **RESULTS**

The outcomes of the set - ups varied from the first up to the last. The first set - up hardened and the sample became oily and smudged. The second one ended up as small bundles of copra with paraffin wax coating and when tested, the sample became shiny but slippery. The first two tries were unsuccessful. However, the third sample had some changes. The outcome looked and felt like ordinary floor wax and the sample became shiny and non- slippery. The result goes to show that the amount of coconut meat should be close to the amount of the paraffin wax and cooking oil should be the lesser variable.

#### **DISCUSSIONS**

Over all, the study was a success. The outcome turned out to be useful and its benefits rival those of its commercial counterparts. The measurement of the materials used had effects on the performance of the product. However, the researcher needed to find an alternative to candle wax in order to make the product all - natural.

**KEYWORDS:** Floorwax

**SUBMISSION ID: R04A-CAVTP-0734**

## **Comparative Analysis Between Organic and Inorganic Fertilizer in Planting Tomatoes**

Karen R. Regato, SHS Student

(Adviser: Elenita F. Hernando)

### **Abstract**

#### **INTRODUCTION**

Fertilizer is added to soil to improve plants growth and yield. Soil maintenance is essential to maintain the good quality of the soil and help in the production of the plants. The purpose of this study is to compare organic and inorganic fertilizer in planting tomatoes. Interview with experts (Agriculturists from the Department of Agriculture) was vital in this study.

#### **METHODS**

A descriptive-quantitative research design has been utilized to examine and compare organic and inorganic fertilizers. The researchers observed and recorded growth and quality of tomatoes for ten (10) weeks. Also, the amount of fertilizers placed in each plot was measured.

#### **RESULTS**

The findings of the study revealed that organic fertilizers have growth records better than inorganic fertilizers in terms of number of leaves, height of the plant, and amount of fertilizers used in tomatoes. Organic fertilizer slightly improved soil texture, porosity, and water holding capacity compared to inorganic fertilizer based on gathered data and observation.

#### **DISCUSSIONS**

The results taken from the weekly assessment on the growth of the tomatoes has been effective in determining which fertilizer may be used in planting tomatoes. Thus, the use of organic fertilizer can be recommended in planting other vegetables.

**KEYWORDS:** Organic fertilizer, inorganic fertilizer, production, growth

**SUBMISSION ID: R04A-CAVTP-0429**

## **Breadfruit Pandesal: Its Acceptability and Salability**

Jemalyn Melgar, mnhs301810@gmail.com

### **Abstract**

#### **INTRODUCTION**

The country is currently dealing with different types of malnutrition cases. The status of micronutrient malnutrition is an important concern in the country. Many Filipinos become malnourished due to improper and inadequate intake of food and nutrients. Republic Act No. 10611 otherwise known as "Food Safety Act of 2013" was signed by Pres. Benigno S. Aquino III in August 23, 2013. The law primarily aims to strengthen the food safety regulatory system in the country and adheres to the Philippine constitution's declaration to protect and promote the right of the people to health and keep its populace from the threat of trade malpractices and substandard and hazardous products. The aim of the research study was to use a locally available raw material that can be developed and utilized. Breadfruit which is popularly known as "kolo" was an underutilized fruit but has some nutritional qualities. The fruit was processed as a substitute flour in making pandesal. Moreover, this study determined the acceptability and salability of breadfruit pandesal.

#### **METHODS**

A mixed method of research was used, a combination of developmental and descriptive research method. Thirty (30) HE students served as the evaluators. A sensory evaluation questionnaire was crafted and used to analyze the acceptability of the pandesal. The acceptability was determined in terms of color, taste and texture. The salability was measured using cost and return analysis. It was done by determining the total cost of production divided by the number of pandesal and adding the percentage markup per unit.

#### **RESULTS**

The results shows that the most acceptable in terms of color was brown. In terms of taste, the most acceptable proportion was slightly salty. While in terms of texture, the most acceptable was soft. With this result, it was determined that the most acceptable proportion was Proportion 2. For two weeks of selling, the most acceptable proportion was found out to be salable.

#### **DISCUSSIONS**

Based on the sensory evaluation conducted, the breadfruit pandesal is acceptable in terms of color, taste and texture. It was also found out that the most acceptable proportion was salable.

**KEYWORDS:** Home Economics, breadfruit, nutrition, food

**SUBMISSION ID: R005-ALBAYP-0022**

## **Birth of Crops: a Phenomenological Study of the Perceptions of Farmers in using Modern Synthetic Fertilizers**

Geonald Aldrin Corpuz, Trece Martires City Senior High School

### **Abstract**

#### **INTRODUCTION**

Agriculture is the backbone of one's country. In the past years, many farmers could not afford a progressive education and deeper knowledge about farming due to either time or money. Things have severely changed through the years. Most farmers now considered an advanced degree vital for agriculture, especially with the rise of recent technology such as fertilizers. In this study, the researchers primarily aimed to determine the experiences of farmers upon using modern synthetic fertilizers.

#### **METHODS**

The researchers used descriptive case study method of research. It is a qualitative approach that focused on the description and identification of currently existing phenomena. Three (3) participants of the study are farmers from Barangay Cabuco, Trece Martires City, Cavite who have experience in using modern synthetic fertilizers were selected by the used of purposive sampling. The study was conducted in Trece Martires City Senior High School and data was collected by the means of naturalistic approach.

#### **RESULTS**

This study aimed to determine the perception of farmers and how these common insights or perceptions affect the use of modern synthetic fertilizers. Based on the semi-structured interview conducted with the three (3) respondents, the researchers find out that modern synthetic fertilizer has a great effect on the quality of crops that these fertilizers provide high quality crops and other products. However, the researchers discovered that there's still the existence of unknowledgeable consumers who is unaware about essence of this kind of fertilizers. Furthermore, the researchers inferred that these common insights or perceptions cause the widespread usage of these modern synthetic fertilizers.

#### **DISCUSSIONS**

The results show that farmers are knowledgeable about the impact or effect of modern synthetic fertilizers and how it provides high quality of crops. However, there are still some consumers who are unaware about the benefits of modern synthetic fertilizers.

**KEYWORDS:** perceptions, farmers, modern synthetic fertilizer

**SUBMISSION ID: R04A-CAVITP-0671**



## **BERNa (Bomb or Explosives Rescue-bot and Navigating Agent)**

John Marwin Dinglasan, Norman Matanguihan, & Rigel Chelsea Tegon,  
Paharang Integrated School  
(Adviser: Rosalie Ronquillo)

### **Abstract**

#### **INTRODUCTION**

Educational robot is the most powerful teaching/ learning material that can help the students in learning new things and easily engage them in technology which can help them in the future. It will be a big help to the humans due to their capability that humans doesn't have. Also, it can be an effective tool for STEM program as it helps them in mathematical and solving problem. A robot is made of component parts of sensors, motors and programs. These parts depends on different fields of knowledge such as engineering, electronics and computer science.

#### **METHODS**

The components of Bomb or Explosives Rescue-bot and Navigating Agent are: Atx2 Board that serves the brain of the robot; ADX BT blue stick interface board - chip that controls the robot using Bluetooth in mobile phone; 7 DC motor (dynamo) attached in its wheels; a gripper and a battery holder where the battery is being placed.

Through the use of the Bluestick app, the robot will be controlled. The Go Pro cam is downloaded to another phone where you can see or monitor what is happening. The robot can move forward, backward, turn left and right. There is a gripper where it grabs the bombs and put it on safe place. This will assure that no one will be harmed. There is also an excavator for digging out bombs under the ground and bomb bin for placing the bombs safely.

#### **RESULTS**

Presence of Bomb or Explosives Rescue-bot and Navigating Agent at the community will keep the community safe and secure in terms of safety, security and protection of the people.

The application of Bomb or Explosives Rescue-bot and Navigating Agent is a great help to the humans, rescuers and government. It save lives by grabbing the vintage bombs and put it in a safe place. It also help the rescuer to rescue victims in times of bomb explosions and earthquake.

#### **DISCUSSIONS**

Through Robotics, it can produce a functional robot like Bomb or Explosives Rescue-bot and Navigating Agent that can be used for disposing bomb. Safety and rescuing when there is bomb explosions and earthquake. It can also be used as surveillance for military and rescuing purposes. It is for safety and to protect the lives of the people saving them from danger. It is more ideal to use BERNa instead of drones because drones cannot perform different actions when disposing bomb and in times of earthquake. The government should use BERNa in performing bomb disposal and rescuing to protect and save the lives of many people.

**KEYWORDS:** Educational Robotics, Robotics, Bomb, Explosives Rescue-bot and Navigating Agent

**SUBMISSION ID: R04A-BATANC-0010**

## **Alternative Aromatic Scent From Sampaguita, Orchids, and Ilang-Ilang Petals**

Maria Fe R. Fenis, SHS Student  
(Adviser: Elenita F. Hernando)

### **Abstract**

#### **INTRODUCTION**

Smell is fundamental for survival of most humans and animals. It has also become connected with taste enjoyment and attracting other people through the use of scent. In this study, the researchers examined three different petals namely sampaguita, orchids and ilang-ilang as potential sources of aromatic scents.

#### **METHODS**

The researchers used the descriptive research design in the study. They followed the sequential procedure of preparing the scents based from the available raw materials in their vicinity. The participants were selected grade 10 students of Alfonso National High School. They answered the survey questionnaire based from the cited indicators. The Four-point Likert scales were utilized in data collection and statistical treatment as well as verbal interpretation.

#### **RESULTS**

Based from the findings of the study, sampaguita, orchids and ilang-ilang petals can be an alternative source of aromatic scent. The potential of alternative aromatic scent from sampaguita, orchids and ilang-ilang petals were shown to have a good result for both male and female participants. However, the study also revealed the preference of the students in terms of color, scent and lasting effect.

#### **DISCUSSIONS**

The results showed that sampaguita, orchids and ilang-ilang petals can be an alternative source of aromatic scent. However, majority of the participants preferred the lasting effect of the scent when they smelled. It is recommended that a follow up study maybe conducted to determine the viability of this product to small scale entrepreneurs.

**KEYWORDS:** aromatic scent, smell, lasting effect, alternative source

**SUBMISSION ID: R04A-CAVITP-0117**

## **Alternative Paper Material: a Tool to Enhance the HandWriting Skills of Grade 1 Pupils**

Shela V. Adlawan, Dancing  
(Adviser: Hadji Luna)

### **Abstract**

#### **INTRODUCTION**

Learning handwriting at an early age helps children become more successful in school and life. It is the stage wherein children should take it slowly and build upon the skills they already have after having strong fine motor skills learned during kindergarten. However, technology is bound to continue developing and more research is needed to identify the best way to teach handwriting to young children.

#### **METHODS**

The purpose of this study was to determine the effectiveness of an Alternative Paper Materials as a strategy to enhance the handwriting skills of Grade 1 pupils. This study utilized an alternative paper material with variant sets and rubrics as measurement tool. Participants served as their own controls. Data was collected during weighted baseline period and during an intervention period. This study included 9 Grade - 1 pupils enrolled at Tagbobo Elementary School.

#### **RESULTS**

The result of the research shows that a comparison between the baseline period and after an intervention has a significant difference. There were 6 out of 9 participants who were remarked as poor in handwriting and 3 remarked as good during a baseline period. Thus, only 1 participant got a good remark, while 8 got a very good remarks after an intervention.

#### **DISCUSSIONS**

The researcher grasped the needs to create a learning environment where writing is encouraged. There must be writing utensils available for young children to practice writing proper guidance and follow up is highly necessary in order for a child to build the sense of accomplishment for them to become imaginative and creative, form thoughts and write them down, builds confidence, a better readers and become more successful in school and in life.

**KEYWORDS:** handwriting

**SUBMISSION ID: R013-SURSUR-0165**

## **Aerial Roots of *Ficus elastica* as Partial Substitute in Making Briquette**

Angelica Arco Marquez, Gian Keila Ferrer, & Sandra Mae Dualan, Bucal  
National High School

### **Abstract**

#### **INTRODUCTION**

The rising prices of liquefied petroleum gas is a perennial problem confronting many households. Finding alternatives such as firewood is least in priority because of the government's prohibition of cutting down trees. Hence, it is but fitting to look for other alternative such as briquettes from materials that are not so often used. These premises prompted the researchers to investigate the use of *Ficus elastica* as partial substitute in making briquette.

#### **METHODS**

Aerial roots of *Ficus elastica* were collected, burned, pulverized, and set aside. On the other hand, 150 mL of hot water was mixed with 100 grams of flour that serves as the binder. The 100 grams of pulverized charcoal was mixed with the binder. Then the mixture was molded to form a 2.5 inches briquette and dried for 2 weeks. The briquette made of aerial roots of *Ficus elastica* was made to undergo proximate analysis (moisture content, volatile matter content, ash content and fixed carbon).

#### **RESULTS**

Proximate analysis of sample briquettes show that its moisture content is 46.8%, its volatile matter content is 35.5%, its ash content is 7.88% and fixed carbon is 56.6%. Compared to commercial briquettes, the samples have higher volatile matter content, moisture content, fixed carbon and lower ash content.

#### **DISCUSSIONS**

Results show that compared to commercial briquettes, the samples have higher moisture content, volatile matter content and fixed carbon while the ash content was lower. Higher moisture content means that the sample is prone to common molds, high volatile matter content have lower heating value, high fixed carbon content may be difficult to ignite but they will often burn steadily for a long time. On the other hand, the lower the ash content, the better the coal.

**KEYWORDS:** Aerial roots Briquette *Ficus elastica*

**SUBMISSION ID: R04A-CAVITP-1625**

## **A Study on the Advantages and Disadvantages of Handheld Radio**

John Mark Jonathan V. Rubio, Balas Buco Sta. Maria National High School  
(Adviser: Lady Diana De Ocampo)

### **Abstract**

#### **INTRODUCTION**

In every emergency, quick and efficient communication is the highest importance. It is vital to alert everyone as quickly as possible if there is a danger or risk in safety. In common palaces, mobile phones have become a necessity in today's society. In this study, the researcher finds the advantages and disadvantages of the handheld radio over the cellular phone that is solidly grounded with analysis of findings.

#### **METHODS**

The binary question was used when conducting the survey. This is to study the advantages and disadvantages of handheld radio over the cellular phone. The researchers used 12 police officers in the municipality and 4 barangay officials as the respondents of this research. Using frequency, percentage, and ranking, findings were revealed.

#### **RESULTS**

The survey showed that the top two advantages of handheld radio over the cellular phone where it saves more money since it has no monthly fee for usage and handheld radio has a lower cost than cellular phones. While the top two disadvantages were handheld radio does not have large features and it cannot access in long-distance travel. The researchers calculated the frequency and percentage of the result collected from the respondents.

#### **DISCUSSIONS**

The analysis of the data revealed that it is very efficient to use handheld radio for communication. We recommend that it is very important to have this at home in case of an emergency. This will serve as a good way to reach family members, especially during emergency cases, since it has only one function which is for communication.

**KEYWORDS:** a handheld radio

**SUBMISSION ID: R04A-BATANP-0922**

## **Acceptability and Development of Turmeric Shake**

Queenie Coma, Department of Education  
(Adviser: Romel Ladislao)

### **Abstract**

#### **INTRODUCTION**

God reminds us in Genesis 1:29 with this message: "See, I have given you every herb that yields seed which is on the face of all the earth and every tree where fruit yields seed; to you, it shall be for food." Of all the plants that God has given us, they are not only for food but they also provide several benefits for our health.

Natural plant products have been used throughout human history for various purposes. Having co-evolved with animal-life, many of these plants are produced as secondary metabolites by higher plants as a natural defense mechanism against disease and infection.

Many of these natural products have pharmacology or biological activities that can be exploited in pharmaceutical drug discovery and drug design. Medicines derived from plants have played an essential role in the health care of many cultures, both ancient and modern practices.

#### **METHODS**

For a comprehensive presentation, the sum of scores and ratings of the respondents will be tallied, tabulated, and categorized.

The following statistical treatments will be used in the study.

Descriptive statistic (frequencies and percent) is employed to personally characterize the respondents.

The mean and standard deviation is employed to determine the perception obtained for each area indicates namely general appearance and probability.

#### **RESULTS**

Based on the result of this study, the following can be concluded:

1. The turmeric shake is approved by the respondents as a solution to the problem of the rise of commercial drinks that has no benefits on a human being.
2. That the turmeric shake can provide the nutrients and essential nutritive value that mankind is looking for.
3. The study successfully achieved the goal of proving the turmeric shake's help on people who do not just want an appetizing drink but also healthy and beneficial drinks.

#### **DISCUSSIONS**

Level of acceptance to Acceptability and Development of Turmeric Shake

1. As to its acceptability in terms of taste/aroma, it revealed a computed mean of 4.18 after the turmeric shake was taken by the respondents and says that it is successful on making it delicious, has a strong aroma, and is better than commercial drinks which are quite true.
2. In terms of nutritional value, it has an overall mean of 4.82 that has the highest rate than on other factors. It just only proves that turmeric shake is beneficial on human health, nutritious, and can be a source of essential nutrients that the human body needs that is very true.
3. On the side, on its cost, it has a mean of 4.36 which proves the consumers might know its low-cost product that is affordable and can be available by all age group and very true on having natural ingredients.
4. Lastly, the turmeric shake packaging/appearance got an overall mean of 4.66 that tells the turmeric shake packaging was appropriate to the product and looks good. Even if the packaging was simple, it is presentable and is attractive to the eyes.

**KEYWORDS:** Acceptability and Development of Turmeric Shake

**SUBMISSION ID: R04A-SANPAB-0077**

## **Acceptability and Effectivity of GTB Filter as an Improvised Exhaust Pipe Air Filter**

Ariane Tersona, Maria Lourdes Baldonado, & Woodrow Stephen Granada,  
Cabuyao INHS

### **Abstract**

#### **INTRODUCTION**

Pollution is one of the major problems in our surroundings here in the Philippines. Polluted air from vehicles and factories contribute to the destruction of our environment. The main purpose of the study is the acceptability of exhaust pipe air filter. The study focuses on the acceptability of the filter in terms of its effectiveness and air quality.

#### **METHODS**

The researchers chose the purposive or deliberate sampling under the non-random sampling as their strategy for their study and used a Hedonic Scale for the questionnaire. The researchers conducted the data gathering in St. Joseph Village 6, Cabuyao City, Laguna. The researchers used 50 people who owned a diesel-powered vehicle as respondents for the data gathering.

#### **RESULTS**

Based on the results gathered, the obtained Weighted mean and Standard Deviation is 5 and 0 respectively in all the questions given in the questionnaire that means it is Highly Acceptable. This means that all the statements in the Statement of the Problem are true. Thus, rejecting the null hypothesis.

#### **DISCUSSIONS**

The researchers recommend to the future researchers interested in this study to find a better alternative to the sponge and the fabric with baking soda as the filtering material and making the procedure a lot easier. Finally, the researchers' advice was to innovate the design of the product.

**KEYWORDS:** Acceptability, Effectivity, Quality, Acceptable, Filter

**SUBMISSION ID: R04A-CABUYA-0050**

## **Acceptability of Canistel fruit (*Pouteria campechiana*) Cupcake**

Melodee Adobo, NAIC NHS  
(Adviser: Princes Miesie Anata)

### **Abstract**

#### **INTRODUCTION**

Canistel fruit is one of the most unfamiliar fruits in the Philippines. It is rare to find as a seasonal plant. According to Entrepinoys ATBP (2014), the fruit is extremely variable in form and size, may be nearly round, with or without a pointed apex or curved leak, or maybe somewhat oval, ovoid, or spindle-shaped. The researchers aim is to introduce the canistel fruit cupcake. Oftentimes, it is neglected by many because of the acrid taste and bad smell but it is rich in niacin and carotene which is good for the eyesight. The general importance of the study is to support the goal of the campus in the development of unfamiliar fruit that would be beneficial on human consumption both economical and on the health aspect.

Acceptability of canistel fruit (*Pouteria campechiana*) cupcake was conducted to (1) determine the level of the acceptability of canistel fruit cupcake in terms of appearance; aroma; flavor; and texture; (2) find the general acceptability of canistel fruit cupcake (3) evaluate the significant difference of the acceptability of canistel fruit cupcake among the three treatments.

#### **METHODS**

Three treatments with different proportion were used in the study. Treatment A- $\hat{A}$  $\frac{1}{2}$  cup of canistel fruit, treatment B- $\hat{A}$  $\frac{3}{4}$  cup of canistel fruit, treatment C-1 cup of canistel fruit. The study used an experimental method using a single group design to determine the acceptability of canistel fruit, a version of a fruit cupcake. The sensory evaluation using a nine-point hedonic scale was used to determine the level of the acceptance of three treatments in terms of its appearance, aroma, flavor, texture and general acceptability.

#### **RESULTS**

The general acceptability of three treatments had obtained an equivalent rating of liked very much based on their mean ratings of

8.13 for treatment A, and 8.08 for treatment B, and 7.77 for treatment C. The significant difference among the three treatments was observed based on the result of their computed value. If the computed value was greater than 3.41, then it can be concluded that there was no significant difference among the treatments. In this study, the three treatment had no significant difference since the computed value was 6.08.

#### **DISCUSSIONS**

The acceptance of canistel fruit as a cupcake in the selected participants did not measure the scalability. In relation to this, for the next researcher, it is recommended to identify the level of its sales and demand the marketability of canistel fruit.

**KEYWORDS:** Acceptability, Appearance, Aroma, Texture

**SUBMISSION ID: R04A-CAVITP-0053**



## **Acceptability of Graviola Leaf 3-in-1 Tea Powder**

Sonia Caña, Southville 1 Integrated National High School

### **Abstract**

#### **INTRODUCTION**

The graviola, with its common English name Soursop and Guyabano in Filipino, is known as a miracle tree as a cheap but powerful medicine. Based on the foregoing studies and findings leading to the conclusion that graviola is one of the best medicinal plants, an alternative beverage such as graviola tea will be produced. This developed product may be a start of an income-generating project for small entrepreneurs that may eventually contribute to the promotion and development of the nation's livelihood small-scale industries. With this condition, the researcher aimed to introduce graviola leaf 3-in-1 tea powder and determine its sensory qualities such as appearance, aroma, taste, and texture.

#### **METHODS**

The experimental method of research was used. Graviola leaf 3-in-1 tea powder underwent a taste test evaluation. Scorecards were reproduced and distributed to thirty (30) fourth-year students and thirty (30) faculty members of Southville 1 National High School and thirty (30) parents from Brgy. Banaybanay, City of Cabuyao, Laguna. The descriptive statistics through the computation of mean and standard deviation were used to establish the respondent's acceptability regarding the product. Single factor analysis of variance (ANOVA) was used to determine the significant difference between the ratings given by the respondents on the acceptability of graviola leaf 3-in-1 tea powder.

#### **RESULTS**

Graviola leaf 3-in-1 tea powder was produced by selecting the graviola leaves, from washing, drying, roasting, grinding, to mixing of ingredients and packing the product. The students, faculty, and parents assessed the 3-in-1 tea powder made from the graviola leaf as "highly acceptable" in terms of appearance. The respondents gave a lower assessment of the product in terms of aroma and taste because they said that the graviola leaf 3-in-1 tea powder is "acceptable." With regards to texture, it was evaluated as "acceptable" and "moderately acceptable." The ratings given by the three groups of respondents are proven not to have a significant difference in the acceptability of graviola leaf 3-in-1 tea powder.

#### **DISCUSSIONS**

The findings demonstrate that the sensory qualities of the product evaluated majority as only acceptable, which should improve through advance research and further study. The nutritional information of graviola 3-in-1 tea powder must be determined and it could be done through chemical analysis. Future studies should be done along this line considering another locally available leaf- such as the leaves of mango and guava.

**KEYWORDS:** Graviola, Acceptability, Sensory Qualities, 3-in-1 Tea Powder

**SUBMISSION ID: R04A-CABUYA-0072**

## **Acceptability of Kamias Fruit Extract as a Main Ingredient in Stain Remover**

Danielle Bolea, Louise Aubrey Caramay, & Marjorie Viesca, Cabuyao INHS

### **Abstract**

#### **INTRODUCTION**

This study is all about the effectiveness of kamias fruit extract in removing stains and rust on clothes. The purpose of our study is to provide an alternative for branded products that are harmful to our environment and also to our health. The stain is one of the most common problems of people nowadays as it needs much work to be removed. The researcher conducted a study that can help people in removing stains. Kamias has an anti-bacterial effect and high-oxalic content. The product is eco-friendly and affordable.

#### **METHODS**

The first step in making the product is to wash the kamias thoroughly with water, then extract the kamias and pour the kamias extract in the bowl. Add 2 tablespoon of baking soda in a  $\frac{1}{4}$  cup of water, and pour it into the bowl. Put 2 drops of food color into the mixture. Next is pour a  $\frac{1}{4}$  cup of glycerin and add 1 drop of sunflower essential oil. The last step, mix it well.

#### **RESULTS**

The researchers conducted their survey at Saint Joseph Village 5 Butong, Cabuyao City, Laguna. It took up to 2-3 days. Most of the people said that the product was effective and useful. They recommended that the researchers need to improve the physical appearance of the product, which included its fragrance and color. Averrhoa Bilimbi as a stain remover is effective in terms of removing stains and rust, the safety in using this product, and the scent it contains.

#### **DISCUSSIONS**

The researchers, therefore, conclude that their product is effective when it comes in removing stains and rust. However, the problem with its fragrance leaves us incomplete. The sunflower essential oil, which is supposed to give off a fragrant smell failed to do so. Still, the effectiveness and the purpose of the kamias stain remover is good and applied properly, too many oils in the product are removed.

**KEYWORDS:** Acceptability, Effectiveness, Alternative, Anti-Bacterial, Eco-Friendly

**SUBMISSION ID:**

## **Acceptability of Okra (*Abelmoschus Esculentus*) Cupcake**

Grithel Joy Basnig, Naic NHS  
(Adviser: Herson Madrigal)

### **Abstract**

#### **INTRODUCTION**

The study suggested okra (*Abelmoschus esculentus*) to be the main ingredients of cupcake. According to Fiegi (2010), okra's a strange little vegetable; the kind of things you might not guess was edible if no one told you. Its prickly skin can sting your fingers, and slicing into it reveals little more than seeds and slime. Because of it, many Filipinos don't look after its nutrients value and prefer not to eat it.

As cited by Barrett M. (2013), okra is a nutritional powerhouse used throughout history for both medicinal and culinary purposes.

The researchers chose the study to discover a new product that will be accepted by everyone- a product that suits everyone's nutritional needs and contributes to society's demand in terms of having health benefits.

Acceptability of okra (*Abelmoschus esculentus*) cupcake was conducted to (1) determine the acceptability level of lady's finger (okra) cupcake in terms of; appearance, aroma, flavor, and texture and to (2) find the general acceptability of okra cupcake. The study was conducted at Naic National High School Satellite from August- October 2018.

#### **METHODS**

The experimental research used random sampling to select 25 participants: 10 teachers and 15 grade 12 students at Naic National High School Satellite. To determine the acceptability of okra, with the use of experimental method of single group design. The study used nine-point hedonic scale on sensory evaluation sheet to determine the level of acceptance of okra cupcake in terms of appearance, aroma, flavor, and texture.

#### **RESULTS**

The result of sensory evaluation as to appearance got an average of 8.40, 8.19 and 8.23 for the treatment A, B, and C. The Aroma evaluation received an average of 8.40 for treatment A, 8.25 for treatment B, and 8.15 for treatment C. Flavour obtained 8.37, 7.91 and 7.76 for treatment A, B, and C. For texture, 8.41, 8.11 and 7.93 for treatment A, B, and C respective. And for general acceptability, the average was 8.41, 8.21, and 7.97 for treatment A, B, and C. Based on the research findings, "Liked Very Much" is the equivalent rating of the three treatment.

#### **DISCUSSIONS**

The researchers conclude that all treatments (Treatment A: 1/4 cup of okra, treatment B: 1/2 cup of okra, treatment C: 3/4 cup of okra.) are acceptable. This research study suggests future researchers to conduct additional research regarding the nutritional value and marketability of okra cupcake.

**KEYWORDS:** Acceptability, Appearance, Aroma, Flavor

**SUBMISSION ID: R04A-CAVITP-0054**

## **Acceptability of Papaya (*Carica papaya*) Petioles as Paper**

Karla Angela Novelo, Naic NHS  
(Adviser: Joan Barrera)

### **Abstract**

#### **INTRODUCTION**

Acceptability of Papaya (*Carica Papaya*) Petioles as Paper was conducted to (1) determine the level of acceptability of papaya petiole paper in terms of: appearance, color, smell, and durability; (2) find the general acceptability of papaya petiole paper (3) evaluate the significant difference of the acceptability of Papaya Petiole Paper among three treatments. The study took place at selected households within the vicinity of Naic National High School from (Month)-October, 2018.

#### **METHODS**

Three treatments with different proportions were used in the study. Treatment A: 2 Papaya petioles and 3 Pandan leaves. Treatment B: 3 Papaya petioles and 3 Pandan leaves. Treatment C: 4 Papaya petioles and 3 Pandan leaves. The study used the experimental method using single group design to determine the acceptability of papaya petiole paper. The sensory evaluation using 9-point hedonic rating scale was used to determine the level of acceptance of the three treatments in terms of its appearance, color, smell, durability and general acceptability.

#### **RESULTS**

Three treatments with different proportions were used in the study. Treatment A: 2 Papaya petioles and 3 Pandan leaves. Treatment B: 3 Papaya petioles and 3 Pandan leaves. Treatment C: 4 Papaya petioles and 3 Pandan leaves. The study used experimental method using single group design to determine the acceptability of papaya petiole paper. The sensory evaluation using 9-point hedonic rating scale was used to determine the level of acceptance of the three treatments in terms of its appearance, color, smell, durability and general acceptability.

#### **DISCUSSIONS**

Remarks based on the conduct of the study showed that the majority of the participants liked the product. This validates the general rating for the acceptance of the product falls under the Liked Very Much rating. The study focused only on the acceptance of papaya petioles as paper. For the next researcher, it is recommended to find a way to make the paper odorless and to improve the texture.

**KEYWORDS:** PAPAYA, PAPER

**SUBMISSION ID:** R04A-CAVITP-0042

## **Acceptability of *Rana Catesbeiana* (Frog) as Chorizo**

Vincent D. Aguio, SHS students

(Adviser: Liezlida V. Reyes & Geraldine P. Magluyan)

### **Abstract**

#### **INTRODUCTION**

According to an agricultural data technology company, "The world could be facing a food shortage in just 10 years." Menker believes that the year 2023 will be the crossover point when we will no longer be able to produce enough food to feed a growing population. This signifies that food security must be strengthened. It calls for innovation and preservation. Moreover, though exotic meat consumption is not well tracked, demand for it appears to be rising and some industry insiders and watchers say that's likely to continue as foodie culture grows (Sagan, 2016). Applying a new twist in various exotic meat can really be helpful like for instance, frog meat into chorizo. The success of this study can generate knowledge for business as well as growing frogs for sustainability of its meat.

#### **METHODS**

The researchers conducted an experiment. There were three treatments. This was done to determine the exact ratio that can satisfy the consumer. After the process of making the chorizo from frog meat, the researchers selected fifty (50) respondents through purposive sampling. The respondents were from Home Economics (Cookery) strand. Structured questionnaire was used to gather the needed data. The questionnaire was divided into four (4) categories which contained three (3) items. The chorizo was evaluated in terms of aroma, taste, appearance and acceptability.

#### **RESULTS**

The results reveal that, Treatment A got the means of 4.42 (aroma), 3.06 (taste), 4.45 (appearance) and 4.28 (acceptability). Treatment B obtained the means of aroma 4.50 (aroma), 4.53 (taste), 4.72 (appearance) and 4.68 (acceptability). Treatment C garnered the means of 4.43 (aroma), 3.68 (taste), 4.48 (appearance) and 4.60 (acceptability).

#### **DISCUSSIONS**

The results show that Treatment B got the highest means in terms of aroma, taste, appearance and acceptability. All the means in Treatment B were interpreted as strongly agree. This indicates that chorizo made of frog meat can be introduce to the market for reproduction and consumption.

**KEYWORDS:** chorizo, exotic meat, food shortage

**SUBMISSION ID: R012-COTABP-0008**

**A Comparative Study Between the Growth of Pechay (*Brassica rapa*)  
(Plant) Grown Through Aquaponics and Traditional Farming in Naic,  
Cavite**

Bryan Immanuel Gloria & Sophia Pascual, Student

**Abstract**

**INTRODUCTION**

Aquaponics can be considered to be one of the greatest innovations in aquaculture and agriculture. It is a system of aquaculture in which the waste produced by the farmed fish or other aquatic animals supplies nutrients for plants grown hydroponically, which in turn purify the water. The aim of the study is to know which method of farming is better and significantly higher between aquaponics and traditional setup in terms of height and leaf quality.

**METHODS**

Seeds were first germinated, and after 3 weeks, 6 randomly selected plants were transplanted to the aquaponics setup and 6 randomly selected plants were transplanted to the traditional farming setup. The plants were observed in terms of leaf quality, and the heights were recorded every other day. After 5 weeks, the average heights of the plants were computed and the mode of the leaf quality scale was recorded. T-test was conducted to know if there is a significant difference between the two methods in terms of height and leaf quality

**RESULTS**

The t-test showed that in terms of height, the plants grown through aquaponics were significantly higher than that of plants grown through traditional farming, while the leaf quality in both setups has no significant difference. This is because there are more three major element requirements to grow healthy plants which are nitrogen, phosphorus, and potassium, which are found in the wastes of the tilapia fishes than in soil. These can then be used by the plants as fertilizers for their growth.

**DISCUSSIONS**

The reason for the results of the statistical test on the height of the plants grow through the two different setups is that plants have three major element requirements to grow healthy, which are nitrogen, phosphorus, and potassium also referred to as NPK. These elements, nitrogen, phosphorus, and potassium, are contained on the waste of tilapia fishes. These can serve as fertilizer when it is mixed to the aquarium water and watered to the plants. Containing this kind of nutrients on the water for the plants can improve its growth, which can help plants grow taller than those raised using traditional farming in 5 weeks of observation.

**KEYWORDS:** Aquaponics, Hydroponics, Aquaculture, Traditional Farming, Height, Leaf Quality

**SUBMISSION ID: R04A-CAVITP-0226**

## **A Comparative Study of Density and Water Absorption of Bricks with Different Plastic Additives**

Janna Allaisa Young, NAIC NHS  
(Adviser: Maria Carla A. Nazareno)

### **Abstract**

#### **INTRODUCTION**

Plastics damage our environment. Most of the time, plastics are just scattered around that hinders the flow of water in the drainages that causes a flood. According to Juvinia P. Serafin, these days, plastics are part of Filipinos' daily life.

In the city of Naic, they attempted to control the use of plastic especially the plastic straws but got no positive result. Comparing the density and water absorption of bricks with different plastic additives was conducted to (1) determine the density of brick with plastic additives; (2) determine the water absorption of brick with plastic additives; (3) determine if there is a significant difference in the density of four treatments; (4) determine if there is a significant difference in the water absorption of four treatments. The study took place at selected houses of the researchers, which were in Mabulo and Labac from June to October 2018.

#### **METHODS**

Four treatments with different plastic additives were used in the study. Treatment A: Combination of plastic bottles and plastic curls, treatment B: Plastic curls, treatment C: Plastic bottles and treatment D: Control. The study used an experimental method using a post-test only design that has an experimental group and a control group. To compare the density and water absorption of bricks with different plastic additives, the researchers tested by getting the measurement of the height, width, length and the weight of the bricks.

#### **RESULTS**

The results revealed in Treatment A has the mean of 0.0020276. Treatment B shows a mean of the density of 0.0020704. As of Treatment C, it has the mean of 0.002004. And Treatment D has the mean of 0.0020133. In terms of Water Absorptions, the four treatments revealed that Treatment A has an average of 0.03348. Treatment B has 0.08031. Treatment C has an average of 0.02723. While treatment D has an average of 0.03348. Using a one-way ANOVA test, the data showed that there is no significant difference in density among the four treatments; while in water absorption, there was a significant difference.

#### **DISCUSSIONS**

The experimentation shows that Treatment D has the highest density. Treatment B has the highest water absorption with an average of 0.08031, which means it does not absorb water quickly. The plastic additives have no significant difference when it comes to brick density, but it has in water absorption.

The study focused only on comparing the density and water absorption of bricks with different plastic additives and did not test the compressive strength of the bricks. Thus, the next researchers needed to test the compressive strength of the bricks with different plastic additives.

**KEYWORDS:** absorption, brisk, plastic additives

**SUBMISSION ID: R04A-CAVITP-0044**

## **Pomelo (*Citrus maxima*) Peel as an Alternative Component in Medicinal Soap Making**

Mark Joven A. Tibayan, Tagaytay City Science National High School  
(Adviser: Mark Anthony Rellores)

### **Abstract**

#### **INTRODUCTION**

The researchers chose to make a medicinal soap out of pomelo citrus fruit because it has many health benefits. It is also applied to other customers who have the same problem so that they can save their money. High levels of Vitamin C in pomelos act as antioxidants, which seek out dangerous free radicals. One adverse effect that free radicals cause in the degradation of the skin, which results in signs of premature aging, like wrinkles, sagging skins, and age spots. High vitamin C intakes can prevent this. Pomelos also contain spermidine, a rare chemical that is actually found in human sperm, hence the name. This has been closely linked to anti-aging properties as well.

#### **METHODS**

The researchers chose medicinal soap making as an additional income generations project. The ingredients are coconut oil, pomelo peel, lye, rubbing alcohol and glycerin. The researcher prepared 3 setups. Set up A, B, and C. In set up A the researchers put 2 ml of rubbing alcohol, 20 ml coconut oil, 5 ml lye,  $\frac{1}{2}$  grams of pomelo peel and  $\frac{1}{4}$  grams of glycerin. In setting up B the researchers put 3 ml rubbing alcohol, 25 ml coconut oil, 10 ml lye, 1 gram of pomelo peel and 1 gram of glycerine. In setting up C the researchers put 5 ml of rubbing alcohol, 30 ml of coconut oil, 15 ml of lye, 2grams of pomelo peel and  $\frac{1}{2}$  grams of glycerin.

#### **RESULTS**

After it is done, the researchers tested the product with 2 respondents. Respondent A tried using the products for 2 weeks and Respondent B used the product for 3 weeks. Furthermore, the researchers used a questionnaire, the voting scale of agree and disagree, to test the characteristics of the medicinal soap and to test the effectiveness of the product. Based on the result of the study, medicinal soap out of pomelo peel can be used as an effective component for medicinal soap. The medicinal soap out of pomelo peel can help people to cure their acne.

#### **DISCUSSIONS**

After using the medicinal soap the respondents proved that it is effective. All the blemishes were removed. It also shows that has good appearance and texture. Based on the results, medicinal soap is effective in curing pimples. In addition, the researchers concluded that pomelo medicinal soap is alternative in curing pimples. The researchers tested the effectivity of the product and it is effective in curing pimples. The addition of pomelo soap in our skin care can cure the blemishes in human skin. The youth nowadays are very interested in an inexpensive product that can help them to make their skin smoother and pimple free.

**KEYWORDS:** Pomelo Peel, Medicinal Soap, Health Benefit, Spermidine , Antioxidants

**SUBMISSION ID:** R04A-CAVITP-0367



**Saline Water and Unripened *Citrofortunella microcarpa* (Calamondin)  
Extract as an Alternative Source of Electricity**

Luis S. Oberio III, Tagaytay City Science National High School  
(Adviser: Mark Anthony Rellores)

**Abstract**

**INTRODUCTION**

The study is all about Saline Water and Unripened *Citrofortunella microcarpa* (Calamondin) Extract as an Alternative Source of Electricity. The study aims to find a new source of electricity for lighting that is efficient, environment-friendly, and available in the locality. Specifically, it aims to (1) determine the effect on the voltage of electricity using the following solutions: (a) saline water, (b) unripened calamondin extract, and (c) combination of both; (2) determine the effect on the length of time the productivity of electricity will last using the three solutions.

**METHODS**

The study has been done by using three set-ups. Set-up A contains saline water, Set-up B contains unripened calamondin extract, and Set-up C contains both saline water and unripened calamondin. After finishing the set-up, a tester will be used to measure the amount of voltage produced.

**RESULTS**

As the results of the three solutions tested, Set-up A produced 1.973V, Set-up B produced 2.09 V, and Set-up C produced 2.01 V in 1-minute controlled time of the test duration. The researcher tested the length of time the productivity of electricity will last upon connecting the three solutions to a LED bulb. After observing the three solutions for days, Set-up A lasted for 3 days, Set-up B lasted for 2 ½ days, and Set-up C lasted for 3 ½ days.

**DISCUSSIONS**

The research concluded that both saline water and unripened calamondin extract could be an efficient source of electricity. Based on the findings, the recommendation was to have further studies to improve and enhance this study.

**KEYWORDS:** calamansi, salt water, electricity, alternative energy

**SUBMISSION ID: R04SA-CAVITP-0352**

## **Sukang Dragon: Antioxidant Assay Level in Total Phenolic Content of Peels and Pulps of Dragon Fruit**

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(Adviser: Rachelyn A. Hernandez)

### **Abstract**

#### **INTRODUCTION**

This study was conducted to determine the antioxidant assay level of the peels and pulps of the dragon fruit. The researchers would like to prove to people that not only the pulps contain a certain substance which is the antioxidant but also the peels of it. Furthermore, this study is not just about determining the contents of the *Hylocereus undatus*; this is also about making the dragon fruit into cider vinegar. In which way the fruit could become more useful to neutralize bad cholesterol and speed up the metabolism of the body if consumed by man.

#### **METHODS**

Fresh dragon fruit was brought by the researcher and was washed to maintain the cleanliness of the peels. A knife was used to peel the skin of the white dragon fruit, separating from its flesh. A container was brought out and as well an apple cider. The apple cider was poured inside the container and the white dragon fruit peels and pulps were put inside as well. They were all mixed together with a spoon. The container was sealed tightly after the process and left for six (6) months to become a vinegar cider. The other half remaining of the white dragon fruit was liquidized. The dragon fruit liquidizes peels and pulps were sent to Institute for the laboratory testing. A ten-fold serial dilution was done to prepare different concentrations of the extract. Three millimeters of each concentration was mixed with 1 ml of 0.1 milli-Molar DPPH solution in absolute methanol. The mixture was shaken vigorously and incubated for 30 minutes in the dark. The reduction of the DPPH was determined by measuring the absorbance of the solution at 517 nm using a UV-VIS spectrophotometer.

#### **RESULTS**

The results show that the pulp has a higher antioxidant assay level than the antioxidant assay level of the peel. The results of the radical-scavenging activity show that the pulps have 93.22% antioxidant assay level and total phenolic content and the peels have 79.18%.

#### **DISCUSSIONS**

Based on the result, it was shown that the part of white dragon fruit that gave most of the antioxidant on the vinegar cider was the pulps. The radical-scavenging activity of the pulps was higher compared to the peels. Given that the peels gave the lower amount of antioxidant percentage to the cider vinegar, the peels contributed more to the appearance of the vinegar. The peels gave the vinegar an appealing dark red color. The antioxidant assay report also stated that the pulps mostly contributed more nutrients than the peels of the white dragon fruit.

**KEYWORDS:** Dragon Fruits, antioxidants assay level, total phenolic content, peels of Dragon Fruit, the pulp of dragon fruit

**SUBMISSION ID: R04A-CAVITP-0369**

## **The Efficiency of Differently-Programmed Rescue Robots as Victim Locator**

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Balayan National High School  
(Adviser: Shiela Marie Bahia)

### **Abstract**

### **INTRODUCTION**

Emergency rescue is one of the common problems encountered during disasters and the time it takes to cease the rescue mission takes so much causing life to be at risk. The National Disaster Risk Reduction and Management Council (NDRMMC) employs every effort to ensure the protection and welfare of the people during disasters or emergencies. However, rescue robots have not yet been fully utilized due to lack of expertise and funding. Thus, this study was conducted to design and construct a robot that can detect human lives in disaster-affected areas. This robot is also devised to access unreachable locations.

### **METHODS**

The researchers came up with the following different programs. In program/treatment no. 1 with 4 CH Buttons with Obstacles Detecting Sensor, the robot can detect the specific distance of an obstacle. In program/treatment no.2 with 4 CH Buttons with Radar, the robot can detect motion and objects near its vicinity. In program/treatment no.3 with 4 CH Buttons with Light Sensor, if the robot detects light intensity in as little as 130 lux, it will respond by flashing "light detected" on the monitor. Constant variables installed in all programs include a Passive Infrared (PIR) sensor and a sound sensor. The researchers designed and created a simulation board to test the limitations of the Emergency Companion Robot.

### **RESULTS**

Based on the results, all programs were applicable to the robot because of the successful rescue mission even though there were differences in their time of locating the victims. It was also found out that 4CH Buttons with Obstacle Detecting Sensor was the fastest to detect the victim in a disaster-affected area with an average time of rescue of 3:58 min. Using One-Way ANOVA, the computed F value (19.69) is higher than the tabulated value (2.70), the null hypothesis is thus rejected. From the results obtained from the t-test, the p-value between programs 1 and 2 and programs 1 and 3 is less than 0.05, 0.048 for both, which made their mean difference to be statistically significant.

### **DISCUSSIONS**

Program 1 with 4 CH Buttons with Obstacle Detecting Sensor is the most applicable for the robot to be used in disaster areas as it shows the fastest reaction among the others since it uses the function of obstacle detecting sensor embedded from its ultrasonic sensor. The rescue designed in this study has its own limitations owing to its material and power source, thus several improvements to its overall design are recommended for future studies.

**KEYWORDS:** rescue robot, disaster, sensors

**SUBMISSION ID: R04A-BATANP-0031**

## **The Use of Video Clip in Teaching Biology among Grade Ten Students of Batangas National High School**

Arvie Limbo, Department of Education - Bats. City

### **Abstract**

#### **INTRODUCTION**

Technology, the science of study of an art or skill and innovations like the computer and the internet, nowadays, play a big part in this transformation of education in making learning much easier, faster, and accessible to most of the people. Pedagogues, now, must make use of such technologies in their styles of teaching and develop competencies in order to maximize the utility of these technologies. The researcher is aware of the preponderance of using different tools towards the mastery of the subjects especially science which is a very vast subject to cover and to be learned by the students. The researchers came to realize that the answer to the challenge of disseminating the ever-growing knowledge of science to the students of the modern civilization is to establish good teaching techniques of teachers using video clip presentation.

#### **METHODS**

Descriptive method of research was used in this study because the type of research method is not simply amassing and tabulating the facts but includes proper analysis, interpretation, comparison, and identification of trends and relationships. It is also used to assess the performance of the students using video clips in teaching biology

#### **RESULTS**

The study shows that the majority of the students show greater interest in learning the lesson if it can be seen and heard especially when it comes to the different processes of the body system in Biology. Understanding of the lesson is greatly enhanced with the help of video clip presentation since it catches their attention than the usual traditional teaching-learning process

#### **DISCUSSIONS**

The researcher comes up with the findings that the majority of the students can able to understand the lesson with the used of video clip presentation. It can also be gleaned from the study that students show greater interest in learning the lesson with the used of video clips rather than the traditional way of teaching. This study is similar to the study of Hsin and Cigas (2013) wherein the user of short videos significantly achieved a higher percentage of involved students and their average grades increased.

**KEYWORDS:** Biology, DNA, Endocrine system, Science, Teaching, Video clips

**SUBMISSION ID: R04A-BATANP-1626**

## **Used Cooking Oil as an Alternative Fuel**

Gabriel C. Tumlos, Tagaytay City Science National High School  
(Adviser: Mark Anthony Rellores)

### **Abstract**

#### **INTRODUCTION**

This study entitled Used Cooking Oil as an Alternative Fuel was conducted to produce a substitute for non-renewable fuel using used cooking oil. This study involves discovering the capability of used cooking oil to serve as an alternative source of fuel that is renewable and easy to produce. Specifically, the study aims to determine if the used cooking oil can transform into fuel and run an actual engine by mixing it with commercialized diesel and with pure biodiesel.

#### **METHODS**

The researcher prepared three set-ups. In the first set-up, 1L of filtered oil was mixed with a 200 mL methanol and 7 grams of lye (KOH). In the second and third setup, the same measurement of methanol and lye were applied but the oil was reduced to 500 mL and 250 mL respectively. A grass cutter that uses petroleum as fuel was used, as a tester, to identify which set up would be most efficient as fuel.**RESULTS** Among the three setups, the first set-up was the only one that is preferable for starting the engine of the tester. The second and third setups were not used because of the high amount of glycerin produced.

#### **DISCUSSIONS**

The researchers were able to produce a new, natural, efficient, and eco-friendly biodiesel for it is biodegradable, renewable and cheap. The researchers concluded that used cooking oil can be effective in the production of biodiesel and is easy to produce since it is easily found at home.

**KEYWORDS:** Cooking oil, biodiesel, alternative fuel, methanol, renewable

**SUBMISSION ID: R04A-CAVTP-0359**

## **A Comparative Analysis of Instructional Setting: Effect on Critical Thinking Skills of Science Students**

Alelie Santos, Madel Doroja, & Mary Grace O. Banzuela, Department of Education - Division of Laguna

### **Abstract**

#### **INTRODUCTION**

The aim of the study is to improve the critical thinking skills of Science students by exposing them into an innovative teaching strategy such as the flipped classroom. The findings of the study can help teachers to discover other ways to become more effective and efficient in their teaching service delivery.

#### **METHODS**

The study used an experimental approach. Both sections were given the same questionnaire in pre-test and post-test, one section was a controlled group. The researcher creates a researcher-made pre-test and post-test to test the students' critical thinking skills.

#### **RESULTS**

The findings of the study showed that there is no significant difference in the level of critical thinking skills between control and experimental groups.

#### **DISCUSSIONS**

From the results, it can be seen that the students' critical thinking skills lowered. This is probably due to the researcher's limited time in conducting the study and other factors in which the researcher has no control of such as absenteeism. The findings reveal that critical thinking did not improve in the control group. This is probably because the type of critical thinking interventions does not match the learning style of the students. At - the value of -0.508 and a p-value of 0.614 registers no significant difference in the pre-test and post-test results of grade 10 science students prior and after their exposure to flipped classroom instruction. On this study, the researcher believes that the quality of the flipped classroom, together with the help of other factors, on implementing the said program is a compelling force in improving the level of critical thinking skills of grade 10 science students.

**KEYWORDS:** Flipped Classroom, Critical Thinking Skills, Science, Instructional Setting

**SUBMISSION ID: R04A-LAGUNA-0341**

## **A Study on the Potential of Bikas (*Mikania cordata*) Leaf in Bioremediation of Manganese in Water**

Resha Mae Agang  
(Adviser: Annalyn Loreto)

### **Abstract**

#### **INTRODUCTION**

The global industrialization meets the demands of the modern population at the cost of environmental exposure to various contaminants including heavy metals (Verma, Neelam, Sharma & Rajni, 2017). The significant increase in the concentration of Manganese in Nabunturan water is attributed to the anthropogenic practices especially mining activities in the area (Yang, Deng & Li, 2008). Biosorption is a physio-chemical process that is defined as the removal of compounds from solution by surface adsorption to biological material (Shinomol et al., 2015). This study explored the potentiality of an endemic plant, Bikas (*Mikania cordata*) leaf in biosorption of Manganese in water.

#### **METHODS**

This study utilized a one-shot experiment. Two different treatments were done to test the potential of Bikas leaf, the Bikas leaf extract, and the chemically modified Bikas leaf. The water sample collected from Nabunturan Water Station Association was subjected to an initial test for the concentration of Manganese. The plant sample was collected, washed to remove sediment particles and air-dried for four days. The first treatment required a 5:1 ratio of ethanol to plant sample to soak 10 grams of Bikas leaf for three days.

#### **RESULTS**

After treatment with chemically modified Bikas (CAMOB) leaf, the concentration of Mn (II) plummeted from the untreated 1.04 mg/L to 0.162 mg/L, a decrease of 0.878 mg/L. The results also indicated that after treatment with Bikas leaf extract the concentration of Mn (II) decreased by 0.0943 mg/L. In accordance with the formula by Huang et al. (2018) the heavy metal uptake of CAMOB leaf was significantly greater than the Bikas leaf extract. The removal efficiency of CAMOB is 84.42%, significantly higher than 9.32% of the Bikas leaf extract.

#### **DISCUSSIONS**

Activation by NaOH and citric acid increases the surface area of Bikas leaves thereby enhancing the adsorption ability of heavy metal (Shinomol et al, 2015). The World Health Organization (WHO), United States Environmental Protection Agency (USEPA) and Philippine National Standards for Drinking Water (PNSDW) recommended health-based guideline set for Manganese is valued at 0.3 mg/L, 0.4 mg/L and 0.5 mg/L respectively. The concentration of Mn (II) in Nabunturan water passes the guideline by neither international organizations nor the PNSDW as stipulated in the Code on Sanitation of the Philippines (PD 856). However, the water sample treated with Bikas leaf extract fits in with the recommended value for Mn (II) in drinking water.

**KEYWORDS:** Bioremediation, manganese, bikas leaf

**SUBMISSION ID: R011-COMPOS-0012**

**Active Learning Approaches in Teaching Physical Science: Direction toward Enhanced Thinking Skills of Grade 12 Senior High School Students**

Krissa Umali, Recto Memorial National High School

**Abstract**

**INTRODUCTION**

Students are expected to become lifelong learners as envisioned by the Department of Education. To be actively involved, students must engross in such higher-order thinking tasks. Within this context, it is proposed that approaches promoting active learning be definite as instructional undertakings concerning students in doing things and thinking about what they are doing. The research study projected the implementation of different approaches of delivery supports students' prerequisites in the course in real classroom scenario thus it will offer to learn processes that will facilitate student engagement, enhance the relevance and improve enthusiasm by actively involving students within their classroom in a realistic learning environment.

**METHODS**

The focus of the study was to know the difference in the performance among the three groups of grade 12 senior high school students as exposed to different active learning approaches. The study utilized the experimental design. Inventory of active learning approaches from the 2C-2I-1R Pedagogical Approaches is done through a survey. Three approaches were identified as preferred by the learners namely- Collaborative, Inquiry-Based and Reflective. These three approaches were then applied to the three groups of Grade 12 students (92 students) using learning instruments containing varied activities that exemplify the process of collaborative, inquiry-based and reflective approaches.

**RESULTS**

The preferred active learning approaches by the students as identified in the study are the Collaborative, Inquiry-Based and Reflective Approaches. From the results of the post-test done, the low order thinking skills of the group exposed to the collaborative approach is better than the groups exposed to inquiry-based and reflective approach. However, in high order thinking skills, it is the group exposed to a reflective approach that outnumbered the performance among groups exposed to the inquiry-based and collaborative approaches.

**DISCUSSIONS**

Senior high school teachers are encouraged to embrace the 2C-2I-1R pedagogical approaches of teaching as mandated by the educational sector in order to actively engage the learners in the teaching-learning process. These approaches enrich the thinking skills (LOTS and HOTS) of the learners as reflected in the study.

**KEYWORDS:** active learning approaches, collaborative, inquiry-based, reflective, thinking skills

**SUBMISSION ID: R04A-QUEZON-0300**



## **Activity Sheets, Worksheets, and Pokemon Go: Tools to Improve the Academic Performance in Science**

Junie Baldamor

### **Abstract**

#### **INTRODUCTION**

The researcher noticed that Science continued to be one of the most difficult fields of the study in K-12 Education. The 4% decreased in the pupils' performance in the National Achievement Test had shown that the pupils did not achieve the mastery level. The researcher conducted the program "I LOVE SCIENCE " which stands for Innovation Lessens Obstruction and Vulnerability among Educators for we need Strategy that Captures the Interest and Establish New ways for Children's quality Education by using ACTIVITY SHEETS, WORKSHEETS AND POKEMON GO. This study aimed to help the teachers find ways to improve the teaching-learning process and developing new strategies to achieve the mission, vision, and goal of the Department of Education.

#### **METHODS**

This study employed a quasi-experimental pre-test-post-test comparison group design. The purpose of the experimental design was to discover the difference between the traditional Method of Teaching and the Innovative Intervention Method of Teaching that focused on the Least Learned Competencies for the last consecutive years. The instrument underwent content validation and item analysis to make sure that the tests were valid. Thus, this study was done for a change, a change of strategies in order to come up with a very constructive pupil's output.

#### **RESULTS**

Based on the findings, during the conduct of the study, the mean of the traditional method was a little lower than the mean of the post-test. Looking at the standard deviation score, it implied that the variance of the innovative instructional method was greater than the traditional method that recommended that the pupils' performance would be based on the innovative approaches presented and being developed by the teacher.

#### **DISCUSSIONS**

The findings from the empirical investigation formed the basis from which the traditional and Innovative Intervention Method was developed as depicted in the results and formed the primary outcome of this study. The model proposed that the pupils increased their performance through the innovative intervention method. The mean scores during the pre-test of the traditional method and the innovative instructional method do not significantly different which means that the pupils needed a new method of teaching. The mean scores during post-test of both traditional method and innovative instructional method had a significant difference which means that innovation played a vital role in the learning process because it somewhat attracted the pupils' attention in the classroom and made them attentive in the subject and with that, they are very keen to learn.

**KEYWORDS:** POKEMON GO: TOOLS TO IMPROVE ACADEMIC PERFORMANCE IN SCIENCE

**SUBMISSION ID: R04A-LAGUNA-0276**

## **Adopt-a-Friend Program: A Peer-Mediated Approach in Teaching Science and Technical Vocational Education**

Cincy Merly Gecolea, Department of Education - Calamba City

### **Abstract**

#### **INTRODUCTION**

Education is the basic part of everyone's life and it is required for the holistic development of the individual. Education imparts knowledge, skills and shapes values and attitudes. It is vital for the progress of civil society. Since education plays a vital role in shaping individual for a better future, it is very important that the process of learning by the students must be given an in-depth focus and attention. This study mainly focused on the utilization of Adopt-a-Friend Program as an approach in teaching and learning Science and TVE 9.

#### **METHODS**

The study utilized a quasi-experimental study, particularly the non-equivalent dependent variable. This type of evaluation aims to determine through pre-test and post-test whether a program or intervention has the intended effect on the study's participants. This is applicable to the present study since this will intend to determine the effects of peer teaching approach in the academic performance of Grade 9 students in TV and Science. In addition, the particular post-test measures two constructs, one of which is expected to change after treatment is enacted while the other is expected to remain consistent with previous results.

#### **RESULTS**

Results of the pre-test and post-test results of the Grade 9 students in Science show a significant difference in the results of the tests where the MPS increased from 38.00% to 62.20%. Also, the calculated t-value of 9.38 exceeded the critical value of 2.07. Similarly, in TVE, results show a significant difference in the results of the tests where the MPS increased from 30.08% to 68.26%. Also, the calculated t-value of 14.17 exceeded the critical value of 2.07.

#### **DISCUSSIONS**

The study revealed that there is a significant difference on the results of the pre-test and post - a test of the Grade 9 students in both Science and TVE since the calculated t - values exceeded the critical values. It is evident that the students' academic and social performances through the help of Adopt-a-Friend Program in teaching and learning TVE and Science 9 evidently progressed. Both the tutees and peer teachers exhibited a high level of appropriate behavior throughout the study. It also proves that the peer-mediated approach was effective in increasing the skill of both the student tutees and peer teacher. Moreover, the Adopt-a-Friend Program enhanced the student's skill in TVE and Science and developed positive attitudes, so there is a need that the program is to be implemented by other learning areas as well.

**KEYWORDS:** Adopt-a-Friend, peer-mediated approach, peer teaching

**SUBMISSION ID: R04A-CALAMB-0001**

## ADSORBENTS: Comparative Analysis of Water Adsorption between Aratiles' (*Muntingia calabura*) Roots and Silica Gel

Allien Jem I. Mendoza, Calsen Science Club  
(Adviser: Criselda De Chavez)

### Abstract

#### INTRODUCTION

Moisture is a common enemy that gives rise to microscopic diseases and destroys electronics. Moreover, this damage costs money. Silica Gel ( $\text{SiO}_2$ ) is a granular and porous form of silicon dioxide. It absorbs water molecules due to its high specific area. Likewise, dead roots have the capability to adsorb water molecules/adsorbate that was caused by a metabolic process or decomposition. The purpose of this study is to determine the comparison of Silica Gel and Aratiles' roots in terms of their water adsorption rate.

#### METHODS

The study used experimental design to determine the water adsorption rate comparison of *Muntingia calabura*'s roots and Silica Gel. The adsorbents Silica Gel, Aratiles' roots, a mixture of Silica Gel - Aratiles' roots and water were contained in Borosilicate vials. They were partitioned equally in each vial. A digital scale was used for accurate and equal measurements of substances. Three set-ups were made. Each set-up was composed of three trials to observe the adsorption rate comparison. The change in the total volume of water added in every set-up was divided by the amount of adsorbent referring to the amount of Silica Gel and *Muntingia calabura*'s roots. Since data is moderately skewed using Shapiro-Wilk test, Kruskal Wallis Test was used. It shows that if the significant value is greater than the chi-square, the null hypothesis is not rejected. Thus, the water adsorption rate is statistically equal across different types of adsorbents.

#### RESULTS

Table 1. Adsorption Rate of Adsorbent in Each Trial of Every Set-Up. Adsorption Rate (%)

Table 2. Values Calculated Using Kruskal Wallis. Chi-Square value Kruskal Wallis value  
0.629 0.730

The statistical result shows that the mean rate of adsorption of water is statistically equal across different types of adsorbent. Aratiles' roots can be a top alternative to Silica Gel in terms of removing moisture.

#### DISCUSSIONS

Adding another adsorbent like charcoal is needed to eliminate the odor released by the decomposing roots when interacted with moisture. Meanwhile, the vast application of Aratiles' roots can contribute to the community project of eliminating floods in flood-prone areas

**KEYWORDS:** adsorption, aratiles, silica, moisture

**SUBMISSION ID:** R04A-CALAMB-0111

## **African Palm (*Elaies guineensis*) Fruit Kernel Nut Meat as Candy**

Irish Joy Umadhay

### **Abstract**

#### **INTRODUCTION**

Everyone who has sweet tooth always craves for sweet foods such as chocolates, cakes, ice creams, gummies, lollipops and of course the candies that no one can resist. Candies are characterized by the use of a significant amount of sugar or sugar substitute. Candies are normally eaten casually often with a finger, as a snack between the meals. To reduce the bad effects of eating sweet foods especially candies, the African palm fruit kernel nuts gives many health benefits to the consumers. Palm, though popular in the Philippines particularly in Mindanao, still need to be explored in terms of its utilization especially on preservation for a longer period. With this in mind, the researcher opted to venture on other possibilities of preserving the species into other useful product such as candy considering its abundance and availability in the locality. Thus, this study was conducted.

#### **METHODS**

This consists of research instrumentation, experimental design, acquisition of materials, preparation, and cooking procedure, respondents of the study, data gathering and locale of the study to determine the acceptability of African Palm Fruit Kernel Nut Meat as Candy in terms of flavor, odor, texture, palatability and general acceptability. In rating the acceptability of African Palm (*Elaies guineensis*) Fruit Kernel Nut Meat as Candy the following scales were used making 4 as the highest and 1 as lowest.

#### **RESULTS**

Results of the study revealed that treatment 3, which has 50%, African Palm Fruit Kernel Nut Meat is acceptable as to its quality scoring and sensory evaluation such as flavor, odor, texture, palatability, and general acceptability. There exists a significant difference among treatments means.

#### **DISCUSSIONS**

Based on the results of the study, the researchers concluded that each treatment significantly varies as to their quality scoring and sensory evaluation and that the use of 50% concentration of African Palm Fruit Kernel Nut Meat is acceptable. It is therefore recommended to use treatment 3, which has 50% African Palm Fruit Kernel Nut Meat as candy as evaluated in terms of flavor, odor, texture, palatability and general acceptability. Further, packaging must be improved and make different shapes to make it more desirable for the public. It is also recommended to have its nutrient analysis to assess its nutritive value.

**KEYWORDS:** african palm fruit kernel nut meat, candy, acceptability

**SUBMISSION ID: R012-TACURO-0016**

## **Aloe Vera Extract as Substitute for Glycerin in Making Bioplastic**

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School

(Adviser: Angeline Pagkaliwangan)

### **Abstract**

#### **INTRODUCTION**

The use of plastic has been increasing for the past years and most of them become waste in our ecosystem. These waste plastics cause serious environmental problems such as pollution. In this study, the researchers tried to improve an already active solution in reducing plastic wastes, which is bioplastic. This study includes the incorporation of aloe vera extract in the making of bioplastic since it contains latex, a plastic generating material.

#### **METHODS**

In making the bioplastic, the first step done was to gather the ingredients. The ingredients were mixed in the cooking pan and were stirred until the mixture became sticky. The heat was turned off and it was stirred for one minute then it was placed in a container and was left to dry. A test for the odor and color of the product was done with the use of rating scales. The cost was computed by adding the value of the materials used. The durability of the product was tested with the use of a spring balance. T-test was also used in comparing for the properties of the said product with the commercialized product.

#### **RESULTS**

The tests done to the product showed very promising results. After the testing of the properties, the odor of the product was concluded to be odorless and is similar to the commercialized bioplastic. The color of the product was concluded to have a light green color. The tests for durability show that the aloe vera bioplastic can only withstand up to 9.5 N before breaking while the commercial product can withstand up to 20 N before breaking. Lastly, the computed cost of the product was found to be more economical than the commercialized product.

#### **DISCUSSIONS**

The results show that aloe vera extract has the potential to be turned into bioplastic. There were no differences between the experimental and commercialized product in terms of odor and color. In addition, the product was more economical than the commercial one. Although the study was a success the researchers still have recommendations to improve the product. The researchers would like future researchers to try different types of aloe plant in making the product, different ratios are also recommended in order to see which one will yield the most durable bioplastic. The test for the shelf life of the product is also recommended.

**KEYWORDS:** Aloe vera extract, bioplastic, glycerin

**SUBMISSION ID: R04A-BATANP-1123**

## **An Appraisal of Science Teaching Activities among Grade III-IV Pupils in Batangas City East District**

Jeaneth Faa, Department of Education - Batangas City District 1

### **Abstract**

#### **INTRODUCTION**

Science is an art of significant concern today more than ever. A basic science background is vital for people to function in the modern world. Considering the school is a potent basic agency in the promotion of science consciousness not only among the schoolchildren but also among the people in the community, the school systems have placed upon itself the task of improving the teaching science in the elementary school. In as much as the foundations of science are laid in the elementary levels, it is a focus of attention. The researcher's inquiry was focused on the needs of teachers, different activities engaged in teaching science, steps and measures extended to upgrade science teaching and difficulties met after having exposed to varied activities.

#### **METHODS**

The descriptive research attempted to ascertain and appraise the science teaching activities among grade III-IV pupils in Batangas City East District. In the questionnaire given to 15 science teachers three general components like teachers profile /qualification, activities engage in by the respondents and problems met were identified.

#### **RESULTS**

The research revealed that teachers possess the necessary educational qualification for the job although there is still a need for further training most especially those who have not yet attended seminars in science. There are serious problems encountered by science teachers. The common serious problems are no room for laboratory work and shortage of time and expenditures in making materials and devices.

#### **DISCUSSIONS**

In general, the research found out that teachers in grade four used varied activities in teaching the pupils and it is not far behind, it is moving to the desired expectations. Based on the result of the research administrators and supervisors may plan more effective in-service training, activities for the improvement of science teaching.

**KEYWORDS:** inquiry, in-service training, appraising

**SUBMISSION ID: R04A-BATANC-0413**

**Antiangiogenic Property of Alugbati (*Basella rubra*) Methanolic Leaf Extract on the Duck (*Anas platyrhynchos*) Chorioallantoic Membrane**

Fryncy Jean N. Pueblo, La Paz National High School  
(Adviser: John Ramel Plomenis)

**Abstract**

**INTRODUCTION**

Angiogenesis, the production of new blood vessels from existing blood vessels, is associated with the process of tumor growth and metastasis of tumor cells. Phytochemicals, on the other hand, has promising potentiality in various applications especially in targeting cancer-related pathways such as angiogenesis. Alugbati have been used in many folkloric applications, usually to treat illnesses and diseases. The different parts of Alugbati such as the stem and fruits showed an antiangiogenic property. No studies have been published utilizing the leaf in inhibiting angiogenesis using the duck CAM assay.

**METHODS**

Alugbati methanolic leaf extract was tested for toxicity to determine the considerable amount to be used followed by the CAM assay on the duck. The eggs were randomly chosen for treatment using online software. The eggs were treated with methotrexate as a positive control, DMSO as a negative control, and with the three different concentrations of the extract: 1  $\mu\text{g/ml}$ , 10  $\mu\text{g/ml}$ , and 100  $\mu\text{g/ml}$ , respectively. Each of the treatments had four replicates. The CAMs were photographed and vascular density was determined by counting the branching points.

**RESULTS**

Results showed that the treatments had a mean vascularization of  $15.250 \pm 2.262$  for the positive control,  $82.500 \pm 20.347$  for the negative control, while the different concentrations of the alugbati methanolic leaf extract 1  $\mu\text{g/ml}$  had  $21.833 \pm 7.885$ , 10  $\mu\text{g/ml}$  had  $21.083 \pm 2.488$  and 100  $\mu\text{g/ml}$  had  $19.667 \pm 3.784$  respectively. The One-way Analysis of Variance (ANOVA) showed that there were significant differences in the mean vascularization of the treatments with the alpha level at 0.5. A multiple comparison test was utilized using Tukey- HSD.

**DISCUSSIONS**

The multiple comparisons among the treatments showed significant differences between the means of the negative control and the different concentrations of the alugbati methanolic leaf extract. It also showed that there were no significant differences between the means of the positive control and the different concentrations of the alugbati methanolic leaf extract. These findings indicate that the alugbati methanolic leaf extract has an antiangiogenic property and can be a potential source of the antiangiogenic drug.

**KEYWORDS:** antiangiogenesis, alugbati, CAM assay

**SUBMISSION ID:** R006-ILOILC-0001

**Antibacterial Property of Skin Mucus of Mud Fish (*Channa japonica*)  
and Eel (*Anguila japonica*)**

Erie Jezreel Bona, SASHS

**Abstract**

**INTRODUCTION**

Mudfishes (MF) and eel fishes (EF) are freshwater fishes that live in the pathogen-rich aquatic environment. These fishes defend itself against these pathogens by excreting mucus on its skin, which can inhibit bacterial invasion in order to maintain its healthy state. This ability in inhibiting bacterial activity is likely the same as how antibiotics work that could aid in the development of antibacterial agents for therapeutical application. This study aimed to determine the anti-bacterial property of mucus extracts of the two freshwater fishes. Also, this study tested the null hypotheses of; there is no significant difference in terms of Zone of Inhibition between the treatments tested against *Staphylococcus aureus* and *Escherichia coli* and There is no significant difference in ZOI resulting from the varying concentration of mucus extracts.

**METHODS**

Using the Kirby-Bauer Culture Sensitivity Test or Disc diffusion method, disc replicates were soaked for 24 hours in different concentrations of 2.5 ml, 2.0 ml and 1.5 ml from the skin mucus of both fishes and one control Ceftriaxone (CF). These concentrations were screened against two common human pathogens, *S. aureus* and *E. coli*. The bacterial suspension was streaked on the media and three replicates of each concentration were placed on it, to get the comparison of results when measured. After which, the media were placed in the incubator maintaining 37°C for 24 hours.

**RESULTS**

The results showed a higher average diameter of ZOI in the concentrations with the *E. coli* bacterial strains. EF got 14.76 mm, MF got 15.33 mm while CF got 24.37 mm, in comparison with the *S. aureus* bacterial strains of 10.67 mm, 9.33 mm, 48.33 mm respectively. Using the statistical treatment, Two-Way Analysis of Variance with Replicates (ANOVA), with  $P < 0.05$  level of statistical significance, it has proven that there is no significant difference in terms of Zone of Inhibition between the treatments tested against *S. aureus* and *E. coli* and there is no significant difference in ZOI resulting from varying concentration of mucus extracts.

**DISCUSSIONS**

This study gave a wider dimension in the field of medicine that can become a new eye-opener for the experts in innovating new and effective medicine. The ability of most fishes in inhibiting bacterial activity on its mucus is likely the same as how antibiotics works that could aid in the development of antibacterial agents for therapeutical application (K. Elavarasi et. al., 2013 p. 194-200).

**KEYWORDS:** Fresh Water Fish, Mud Fish (MF), Eel Fish (EF), Ceftriaxone (CF), Zone of Inhibition (ZOI), Pathogens, Antibiotic, Antibacterial Property, Disk Diffusion Method

**SUBMISSION ID: R005-IRIGAC-0004**



## Antioxidant Activity, Antimicrobial Property, and Acceptability of Kerson (*Muntingia calabura* Linn) Leaves as Herbal Tea

Marlene Abello, Looc Integrated School

### Abstract

#### INTRODUCTION

This study on Kerson (*Muntingia calabura* linn) leaves, commonly known in the Philippines as "Aratilis", was conducted to developed herbal tea and determine its acceptability through the evaluation of sensory attributes such as appearance, aroma, color, and taste. It also aimed to determine the antimicrobial property of Kerson leaves (young and mature) tea against *Escherichia coli* (E.coli). Likewise, it also aimed to determine the antioxidant activity, in terms of total phenolics as gallic acid of Kerson leaves (young and matured).

#### METHODS

Data were gathered using different methods such as; product development for tea; purposive sampling in determining respondents; sensory evaluation using nine (9) point hedonic scale for acceptability; disc diffusion method for the antimicrobial property; and UV-Vis spectrophotometry for antioxidant activity.

#### RESULTS

The respondents like the findings from sensory evaluation with the sensory attributes, appearance, aroma, and color moderately, and neither like or dislike for the taste of young Kerson leaves tea and dislike slightly for matured Kerson leaves tea.

The result implies for antimicrobial property test, that both young and mature leaves of Kerson (*Muntingia calabura* linn) leaves produced (+++) complete inhibitory activity with (2) mild reactivity- (zone limited under the specimen), against *Escherichia coli* (E.coli) as the test organism.

Furthermore, the antioxidant activity test results shows that both young and matured leaves of Kerson (*Muntingia calabura* linn) fruit tree has antioxidant activity, and young leaves has higher antioxidant activity which is 17.7 % w/w than matured leaves activity result which is 17.4% w/ w, based on test for total phenolics as gallic acid.

#### DISCUSSIONS

The results demonstrate that Kerson (*Muntingia calabura* line) young and matured leaves can be developed into herbal tea due to its acceptability results. In addition to that, the Kerson (young and matured) leaves as herbal tea has antimicrobial property as shown in its test against E.coli bacteria. Moreover, the antioxidant property of Kerson (young and matured) leaves which were tested through total phenolics as the gallic acid show's that both young and matured leaves have antioxidant activity.

**KEYWORDS:** Antimicrobial Property, Antioxidant Activity, Acceptability, Herbal Tea.

**SUBMISSION ID: R04A-CALAMB-0299**

**Anti-ulcerogenic Properties of Tit Berry (*Allophylus cobbe*) Leaves, Roots, and Bark Extracts in Mature Female Mice (*Mus musculus*)**

Aaron John De Villa

**Abstract**

**INTRODUCTION**

A study by Prasad, Shyma, and Raghavendra (2013) discovered that a certain tribe in India was using leaf extracts of Tit berry (*Allophylus cobbe*) to cure ulcer. However, there are no scientific studies yet proving the anti-ulcerogenic properties of the said plant. Thus, in this paper, the anti-ulcerogenic properties of Tit berry extracts against gastric ulcer were investigated. Specifically, this study was conducted to determine the anti-ulcerogenic effects of the different parts of Tit Berry in terms of the pH level, ulcer index, and curative percentage.

**METHODS**

This experimental research was conducted at the R&V Veterinary Clinic. Twelve mice were fasted one day before the experimentation and then given NSAID to induce ulceration. Then the treatments were given to the mice four hours after the ulcer induction: T0 - Omeprazole, the controlled treatment; T1 - Leaves extract; T2 - Roots extract; and T3 - Bark extracts. Afterward, the mice were euthanized and were dissected after eight hours. The pH level, ulcer index, and curative percentage of the mice were then observed and recorded.

**RESULTS**

The gathered data from the experiment were interpreted using the adopted scoring system from Choudhary, Bodakhe, and Gupta (2013), Qadir (2019), and MedLine Plus (2018) to assess the pH level, ulcer index, and curative percentage of the mice. The results showed that the T3<sup>Å</sup> yielded the best ulcer index with a weighted mean score of 1.00 and the best curative percentage with a mean score of 2.00. Moreover, T1 produced the best pH level with a weighted mean score of 1.67. The 5-point Likert scale showed that the treatment with the lowest weighted means had the most effective anti-ulcerogenic properties. Because of this, T1 is considered the most effective treatment since it yielded the lowest mean score. These results proved that the Tit berry plant extracts possess anti-ulcerogenic properties, which includes the pH level, ulcer index, and curative percentage.

**DISCUSSIONS**

Therefore, even though T3 had the best ulcer index and curative percentage, its pH level is the least of all treatments making it the second most effective treatment. To conclude, results showed that T1 of the Tit berry yielded the most effective anti-ulcerogenic properties since it produced the best mean score, which means that it consistently achieved the expected results.

**KEYWORDS:** Tit berry, Ulcer, Anti-ulcerogenic properties

**SUBMISSION ID: R04A-CAVTP-0098**

## **Antiuro lithiatic Potential of Boiled Paragis (*Eleusine indica*)**

Lara Chedka Roan O. Dumaguít, Student  
(Adviser: Nilda E. Arreza)

### **Abstract**

#### **INTRODUCTION**

At present, half of the population of women in the world has experienced UTI (Office on Women Health, April 2018) and 1 out of 20 men have suffered (Medscape, July 2018). Currently, urinary stone formation affects 10% to 12% of the population of the industrialized countries (Kidney Stone Australia, 2017). However, Paragis (*Eleusine indica*) also known as Goosegrass has diuretic properties that can increase the amount of water in the body, flushing out toxins and expelling the salt content through urine. The primary aim of the study was to make a product that can reduce the cases of urinary problems such as Urolithiasis and Urinary Tract Infection (UTI) and is inexpensive and safe to use.

#### **METHODS**

The researcher gathered the Paragis (*Eleusine indica*) and removed the roots; the stems were boiled in the casserole for 10 minutes. After boiling, the decoction was poured in a convenient container. The tea was tested to five randomly chosen persons. The five chosen respondents were obliged to drink two liters of water only in the first 24 hours of observation. For the next three 24 hours, they were tasked to drink two liters of Paragis tea with different concentration (second 24 hours: boiled with 150 grams of Paragis, third 24 hours: boiled with 300 grams of Paragis, fourth 24 hours: boiled with 450 grams of Paragis). The researcher recorded the physical observations of their urine.

#### **RESULTS**

The researcher presented 4 tables that show 4 treatments. In table 1 shows the physical appearance of the urine from drinking 2 liters of water in 24 hours. In table 2 shows the physical appearance of the urine from drinking 2 liters boiled 150 grams Paragis in 24 hours. In table 3 shows the physical appearance of the urine from drinking 2 liters boiled 300 grams Paragis in 24 hours. In table 4 shows the physical appearance of the urine from drinking 2 liters boiled 450 grams Paragis in 24 hours.

In each respondent, the color of the urine becomes clearer; the odor has lessened its pungency; the amount of urine has increased. As the concentration of Paragis increases, the urine becomes clearer, less pungent, and increased.

#### **DISCUSSIONS**

As the amount of boiled Paragis increases, the amount of urine also increases. There is a significant difference between water and boiled Paragis as an antiuro lithiatic. Therefore, people can easily make it at their household and improve it more. The researcher concluded that the boiled Paragis has the Diuretic property that can be potential as an antiuro lithiatic.

**KEYWORDS:** ANTIUROLITHIATIC, BOILED PARAGIS

**SUBMISSION ID:** R013-SURSUR-0060

## **Bamboo as Alternative Bio-Fuel**

Juanita B. Anciro & Kathleen May Baybayan, Department of Education

### **Abstract**

#### **INTRODUCTION**

It is undeniable that the world struggle in the dreadful price increase of fuel. Efforts have been developed to find alternative renewable energy sources, due to fossil energy availability is diminishing. In addition, one of renewable energy source is from biomass. The aim of this research is to determine the characteristics of the Ampel bamboo (*Bambusa vulgaris*) as an energy potential of biofuel.

#### **METHODS**

Homemade water distillation method was used to extract the oil coming from the collected bamboo shoot and leaves. The extracted oil was undergone a flashpoint test to measure the minimum temperature at which the fuel will ignite in the presence of a flame. This test was done in DOST Taguig City. The method used to determine the flashpoint was through ASTM D. The researcher also conducted two treatments for the comparison between the alternative oil out of bamboo fuel and commercial oil (kerosene) in terms of quality and efficiency, using 50 ml of pure commercial oil (kerosene) and 50 ml of alternative oil out of bamboo.

#### **RESULTS**

The flashpoint test conducted in the DOST-ITDI revealed that the 102 Celcius proved that the extracted bamboo was incombustible property and can ignite at a certain temperature. In the qualitative view of comparison between the extracted bamboo oil and commercial kerosene, the conducted survey pointed out that bamboo oil exhibited an extent of acceptability compared to the commercial one in terms of the color of the flame, odor, flammability, duration of burning, and amount of soot present. Based on the survey and study conducted, it was proven that Bamboo Bio-fuel could be an alternative lighting source. It was environment-friendly and locally available. It can be light and flame enhancer. It releases an aromatic odor that cannot harm our health.

#### **DISCUSSIONS**

Compared to the commercial one, alternative fuel out of the bamboo shoot is more affordable and a bit constant in cost. Another advantage is environment-friendly in such a way that it helps in treating the locally available plants and contributes to preventing total ozone depleting and global warming since it emits fewer hydrocarbons and carbon monoxide. The government should be encouraged to support the use of plants as hydrocarbon as alternative products. The outcome of the study showed that bamboo was proven to have a potency to be produced as an alternative fuel that can perform at its best.

**KEYWORDS:** flashpoint test, hydrocarbon, water distillation

**SUBMISSION ID: R04A-CAVITP-0754**

## **Banana (*Musa balbisiana*) Trunk as Sound Absorbent and Thermal Insulator Ceiling**

Diana T. Balderama, Calsen Science Club  
(Adviser: Criselda De Chavez)

### **Abstract**

#### **INTRODUCTION**

Nowadays, much importance is given to the acoustical environment. The use and development of materials with sound- absorbing qualities has been spurred by increasing demand for quiet buildings. This study aims to produce an alternative sound-absorbent and thermal insulator ceiling out of banana trunks that would promote fuller sound and could insulate room temperature. This study also explores the possible use of banana trunks to decrease the garbage production caused by this untapped natural material. More specifically, this research aims to know if there is a relationship between the thickness of the ceiling and its sound absorption and thermal insulator capacity.

#### **METHODS**

This research used experimental design to determine the sound absorption and thermal insulation capacity of the ceilings. In order to test these, two set-ups were made, each has a ceiling with a thickness of 1 cm, 2 cm, and 3 cm. The first set-up has ten trials to obtain sound absorption capacity. With the use of sound meter application and a demo box, the sound level in terms of decibel (dB) was measured. While the second set-up was composed of three trials of measuring the thermal insulation capacity in terms of degree Celsius ( $^{\circ}\text{C}$ ) using a microwave oven, demo box, and thermometer. Each ceiling was individually subjected to equal sound waves and heat level.

#### **RESULTS**

Using Pearson  $r$  to determine the correlation between the variables, results showed that the relationship between the independent variable which is the thickness of the ceiling and the dependent variables which are the thermal insulation and sound absorption capacity have a very high negative relationship. The calculated  $r$ -values are -0.993399 and -0.99442 for the thermal insulation and sound absorption capacity, respectively. This result indicates that the thicker the ceiling, the lower the sound and heat level, therefore, the higher the sound absorption and thermal insulation capacity of the ceiling.

#### **DISCUSSIONS**

The use of more scientific testing procedures is recommended in product testing to acquire data that are more precise. Moreover, the researchers recommend the use of natural fibers, other than banana trunks, which are abundant in the locale of future studies. It is also advisable to try different adhesive materials, which are more effective as a binding agent for product making.

**KEYWORDS:** Banana Trunk, Thermal Insulator, Sound Absorption, Ceiling

**SUBMISSION ID:** R04A-CALAMB-0114

## **Banana Peel as Scar Remover**

Lorea M. Mayuga, Mary Danielle M. Balicanta, & Victor Manuel S. Dalisay,  
Department of Education - Batangas Province Science High School  
(Adviser: Angeline Pagkaliwangan)

### **Abstract**

#### **INTRODUCTION**

Scarring is a widespread damage that happens globally, and there is no escaping since it is a natural tendency after wound healing. Creams for removing scars are expensive so most people cannot afford it or they do not want to spend money on it. The researchers found inspiration in using banana peels as a main component in making the said cream due to its composition that has the potential of being a substitute ingredient in making collagen that is essential in scar healing also banana peels contain some vitamins that can improve the skin. The study was conducted to test its properties in removing scars such as pH level, odor, shelf life, and cost. In addition, the researchers tested the effectiveness of the banana peel cream and then compared it to the existing commercialized cream. Lastly, this study aimed to help the human race as a whole, because people who have scars can now easily acquire medication that is affordable and effective.

#### **METHODS**

The product used beeswax and virgin coconut oil as preservatives and was prepared using the processes of water bath, mixing and crushing. Multiple methods were done to test the different properties of the product in removing scars. The researchers used quantitative analysis and statistical tools like the pH meter and rating scales.

#### **RESULTS**

The banana peel cream was found to be more economical. Based on actual experimentations done the product was found to be acidic. After testing the odor, the product was concluded to be better than the commercialized one. The shelf life of the product lasted for six days and the change in length of the scar after seven consecutive days of using the product is 1.1 cm whereas in the commercialized one there is a change of 0.2 cm.

#### **DISCUSSIONS**

The comparison between the pH level of the product and the commercialized one were proven to have no significant difference. The rating of the odor obtained indicates a more comfortable use for consumers. In comparison between the shelf life, the banana peel cream did not last longer but it removed a bigger portion of the scar despite the short period. While existing treatments in removing scars are known, banana peel cream is much more economical and effective thus proving its ability to remove scars can aid people and they can easily acquire medication. The researchers recommend a better way of preserving the product without altering its effectiveness.

**KEYWORDS:** banana Peel, collagen, scar

**SUBMISSION ID:** R04A-BATANP-1052

**Bioaccumulation of Cadmium (Cd) in the Soft Tissues of Freshwater Asian Clams (*Corbicula fluminea*) of Laguna de Bay**

Juliana Marie Artocillo

**Abstract**

**INTRODUCTION**

Filipinos are fond of eating clams and other species of edible marine organisms. One of those bivalves is the Asian clam (*Corbicula fluminea*). In this study, the researchers aimed to identify the concentration of cadmium (Cd) in Asian clams collected at three sampling sites of Laguna de Bay in Calamba City.

**METHODS**

Samples of the Asian Clams were collected in three sampling sites last August 09, 2016. The three sampling sites were Looc, Uwisa, and Aplaya. Sampling site locations were recorded using Google map. Heavy metal analysis for cadmium (Cd) was conducted using an Atomic Absorption Spectrophotometer (AAS), which performed in the Institute of Chemistry at the University of the Philippines, Los Baños.

**RESULTS.**The concentration of Cadmium (Cd) Beyond IR Limit in Asian Clam Tissues

Figure 1. Detection Limit Cadmium (Cd) in Asian Clam Tissues The figure above presented the computed concentration of Cadmium (Cd) by getting the difference between the mean concentration and the ingestion rate limit of 0.0008mg/kg for one day. It can be noted that Looc has the highest concentration of 0.2192mg/kg which is beyond the ingestion rate limit of 0.0008mg/kg for one day, Uwisan has 0.1192mg/kg and Aplaya have exceeded beyond the limit of 0.0992mg/kg.

**DISCUSSIONS**

Estimates of health risks associated with Asian Clam tissues consumption were summarized according to non-carcinogenic and carcinogenic health effects. Non-carcinogenic Health Quotient (NHQ) values of the heavy metal showed that cadmium concentration in urban and even in rural areas are the most urgent pollutant in terms of adverse health effects from risks associated with Asian Clam tissues consumption from all sampling sites in the lake.

From the point of view of human health protection and disease prevention, the Asian Clam from Laguna de Bay is not fit for human consumption due to cadmium contamination.

**KEYWORDS:** atomic absorption spectrometry, cadmium, Asian clams

**SUBMISSION ID: R04A-CALAMB-0109**

**Bioaccumulation of Mercury (Hg) in "Agihis" (*Donax sp.*) Shellfish:  
Contamination from a Trophic Ecology and Human Health Perspective**

Sarah Elidera, Department of Education, Tagbina National High School

**Abstract**

**INTRODUCTION**

"Agihis" (*Donax sp.*) is an important small shellfish bivalve mollusk that is fed to mud crabs and prawns in fishponds in Hinatuan and Bislig in Surigao del Sur. These are fed to prawns and mud crabs as fattener and alternate to commercial feeds. The crabs and prawns from Hinatuan and Bislig have been exported to other countries in the world. As sediment dweller mollusk, "Agihis" is exposed to heavy metals like Hg that are coming from the riverine system in terrestrial areas where small-scale gold mining activities are existing.

**METHODS**

Total Hg contamination in sediments and tissues of "Agihis" were determined to define and measure the presence and effects of pollutants on the aquatic system. The density distribution and biomass of "Agihis" was determined. This is along with the physicochemical parameters of waters in Hinatuan and Bislig bays.

**RESULTS**

Results of the study showed that all physic-chemical parameters in both bays are favorable for the growth of aquatic organisms dwelling both in water and in sediments. While the density of "Agihis" in two bays differ significantly. Meanwhile, the biomass has no significant difference. "Agihis" in Hinatuan is heavier than in Bislig attributed by the larger size. With high densities and biomass of "Agihis" in two bays, it is concluded that there is still an abundance of "Agihis" shellfish in two bays. The results obtained in the current study reveal that Hg concentration in sediments of Hinatuan and Bislig bays are currently low. Bislig bay sediment is lower in Hg concentration than in Hinatuan Bay.

**DISCUSSIONS**

Hg values in sediments are well below the prescribed ERL value ( $0.15 \mu\text{g g}^{-1}$ ), sediment-dwelling biota, "Agihis" are also low in terms of Hg in the body tissues. Concentration is also lower than the European Union maximum permissible value ( $0.5 \mu\text{g g}^{-1}$ ) and USEPA for mollusk tissue residue, which is the maximum tolerable intake levels. Nevertheless, it is recommended that constant monitoring will be done for heavy metal concentration in sediments and tissues of mollusks in the two bays.

**KEYWORDS:** Agihis, Bioaccumulation, Bislig Bay, *Donax sp.*, Hinatuan, mercury, shellfish

**SUBMISSION ID: R013-SURSUR-0113**



## **Biochar: A Production of an Eco-Friendly Charcoals**

Ana Luz Casem, Department of Education

### **Abstract**

#### **INTRODUCTION**

People around the world use wood and biomass as their primary fuel source. There has been much effort in the past in improving stoves that burn wood or charcoal, but a greater number of people do not use or have access to wood fuel. The researcher comes up with a study on producing charcoal out of organic material. Too much acquirement of clay can destroy the local environment caused by quarries.

#### **METHODS**

The researcher used an experimental design that describes the output when certain variables were carefully controlled or manipulated. It is the most appropriate research method for an identifying causal relationship to randomized key features, manipulation of treatment variable, use of the experimental group, an equivalent control group. Set-ups were made that allows observation for the cow dung, wood vinegar, and denatured alcohol for the production of an alternative bio-charcoal.

#### **RESULTS**

The biochar was made out of cow dung that involves mashing, mixing, molding, and drying. The effect of the other agents controlled the odor of the produced product. The study shows that the materials used can produce alternative charcoal that serves as a source of energy but would also mean of waste disposal especially in the Philippines.

#### **DISCUSSIONS**

The results made the researcher conclude that the higher the amount of bamboo vinegar and the lower the amount of cow dung and with the alcohol, the output can be more efficient in the production of the bio-charcoal. The product serves as an alternative material in cooking for daily usage. It is recommended that the material to be tested for further innovation.

**KEYWORDS:** charcoal, eco-friendly charcoal, biochar, bio-charcoal

**SUBMISSION ID: R001-URDANE-0020**

## **BloodyBot: A Robot That Can Monitor Blood Pressure**

Alyssa P. Amigo & Yvaine B. Cabalquinto  
(Adviser: Preacy Ann Llantos)

### **Abstract**

#### **INTRODUCTION**

Rosario has seen a rise with people suffering from high blood pressure. The researchers conducted a study entitled BloodyBot. This robot serves as a help in monitoring the blood pressure of a person. The study targets to decrease the cases of high blood pressure that can lead to several complications such as stroke.

#### **METHODS**

August 2017, the building of the robot was started. Gathering of information and data regarding the robot followed by the research design and layout were done using Lego Digital Designer. The programs installed at the robot were created using the Lego Mindstorms NXT

V.2.0. To test the functionality of the robot, the researchers tested several students. These were done for the assurance of the elements as essential parts of the robot in getting accuracy on the body's blood pressure. This study was conducted at Rosario National High School, P. Burgos St. Sapa 2, Rosario, Cavite. S.Y 2018-2019.

#### **RESULTS**

This endeavor constituted of LEGO robot intended to perform a precise function as a robot taking blood pressure. The robot highlights a very convoluted draft and purpose nevertheless the study was a major success as it achieved its allocated objective. After all the steps the researchers finalized and concluded that BloodyBot as it performed its task because of the appropriate design and program. It helps to monitor blood pressure. The researchers also finish all the requirements needed.

#### **DISCUSSIONS**

As a conclusion, the testing proves that the BloodyBot helps the people to measure blood pressure and capable to prevent the diseases related to high blood pressure. It can perform its task properly as the program runs and continuously measures one's body blood pressure. The BloodyBot was capable of passing any terrain but it is more likely placed above the table or any flat surface. The robot is able to do its task in monitoring the body's blood pressure accurately.

**KEYWORDS:** BloodyBot

**SUBMISSION ID: R04A-CAVITP-0544**

## **Bugnay (*Antidesma bunius*) as an Alternative Therapeutic Beverage For Urinary Tract Infection**

Jan Edward S. Catacutan, Keizzer Dave T. Estacio, & Kurt Asshley T. Dizon,  
Maltana National High School  
(Adviser: Janet M. Bilbao)

### **Abstract**

#### **INTRODUCTION**

Bugnay (*Antidesma bunius*) a highly nutritious fruit of an evergreen tree found across Singapore, Malaysia, and in our locality. In English, it is more popular as a salamander tree. Bugnay is well known for its health benefits. It serves as a natural treatment for an illness like urinary tract infections (UTI). This is one of the common health problems that bugnay can contribute. In this study, the researchers sought the health benefits of bugnay fruit through a natural process of winemaking without any artificial ingredients that would harm our body.

#### **METHODS**

In this study, experimentation and a qualitative research method were used to develop the bugnay fruit to wine. We focused on the natural way of wine making to ensure that there are no negative effects on our body since all ingredients are edible. By gathering bugnay fruits from the vicinity of our municipality and mixing it to the muscovado sugar (sugar cane) that served as a representative about the absence of the refined sugar. This experiment took a long wait for about 3 months to create the final product. After a certain period, natural wine was fermented. Then, the researchers conducted qualitative research in the form of a survey to people who are suffering from urinary tract infections in order to prove that bugnay wine would really help in a particular health problem.

#### **RESULTS**

Under the phytochemical screening of the *Antidesma bunius*, it verified the presence of different kinds of flavonoids, terpene, sugar, and tannins that are safe. This bugnay contains cytotoxic, antioxidants, antiplatelet, antimicrobial, antihypertensive, and anticancer that can help various diseases. Bugnay wine can be an alternative source to synthetic medicine that can cure some health problems like Urinary Tract Infection (UTI). This was proven safe because it does not contain any harmful substances.

#### **DISCUSSIONS**

The researchers focused on one of our respondents who experienced urinary tract infection and get the result of her first urinary test, which was very high (pus cells: 5-7). After giving bugnay wine that served as an alternative treatment for one month, a new result of urinalysis was tested and issued and the pus cells became normal (0-2). It really helps with the health problems without any other supplements and medications taken. *Antidesma bunius* is good for the health since it contains substances that can relieve some health problems specifically the urinary tract infection.

**KEYWORDS:** Bugnay, Alternative Therapeutic Beverage, Urinary Tract Infection

**SUBMISSION ID: R012-SOUCOT-0029**

**Building the Interest of the Grade Three Pupils in Science Subject  
through HOOD Collaborative Approach (Helping Others Observe and  
Discover)**

Reylyne Derez, San Roque ES

**Abstract**

**INTRODUCTION**

Science is the practical and intellectual activity, which encompasses the methodical study of the behavior and structure of the natural and physical world through experiment and observation.

This study proved that the best way to spark interest in science is to bring it to life with exciting experiments. When students "do" science, they are more apt to be excited about it.

**METHODS**

Common teaching methods were identified to measure the level of pupils' interest in Science. Analysis of factors revealed five reasons that affect building pupils' interest. The data were analyzed through weighted mean and verbal interpretation.

**RESULTS**

Respondents of the study were the 113 grade three pupils of San Roque Elementary School who are taking up Science for the first time under Mother Tongue instruction.

The research followed three phases namely the pre-design stage, the design stage, and the post-design stage. The pre-design stage includes identifying the respondents of the study, gathering of literature about building pupils' interest in Science, preparation of the research checklist, informal interview with the pupils and treatment of gathered data. The design stage includes the drafting of the research checklist and preparation of the research presentation. Finally, the post-design stage includes the application of the interventions used in building the interest of grade three pupils in Science subject through HOOD collaborative approach.

**DISCUSSIONS**

The paper shows the effectiveness of the collaborative approach HOOD when used in Science activities will help build the interest of the grade three pupils in Science subject. This research is timely as it sought answers concerning as to how learners would develop their interest in Science considering that it a complex and difficult subject.

**KEYWORDS:** building pupils' interest, effectiveness, collaborative- approach

**SUBMISSION ID: R04A-BATANP-1601**

## **Cassava (*Manihot esculenta*) Starch as an Effective Component in the Production of Bioplastic**

Pj G. Egpit, Student  
(Adviser: Ella Armayan)

### **Abstract**

#### **INTRODUCTION**

Cassava (*Manihot esculenta*) starch is composed of two components: amylose and amylopectin. Since plastics are made of polymers, starch is a very favorable raw material in making plastic. With this increasing numbers of people using plastics that can harm the environment, the researchers are pushed to think of finding an idea of studying Cassava starch as an effective component in the production of bio plastics. This aimed at creating a bio-plastic to help society with environmental issues.

#### **METHODS**

This is experimental research. Different preparations were made to determine the degree of acceptability in terms of thickness and durability of the plastic. About 5 tbsp. of Cassava starch, 6 tbsp. of water, 3 tsp. of vinegar and 3 teaspoons of glycerol (Preparation 1); 3 tbsp. of Cassava starch, 5 tbsp. of water, 2 teaspoons of vinegar and 2 teaspoons of glycerol (Preparation 2); 1 tbsp. of Cassava starch, 4 tablespoons of water, 1 teaspoon of vinegar, and 1 teaspoon of glycerol (Preparation 3). The starch was pre-extracted from the raw Cassava tubes using a blender. All ingredients were combined as to the desired proportions until a consistent mixture was formed. It was heated on a low flame until it became viscous and clear and allowed it to cool down.

#### **RESULTS**

Quality of plastics produced depends on the proportions of additives used. Different amount of cassava starch used had an effect on the thickness and durability of the samples. Different treatments were formulated and tested to find out what samples, from different proportions, would show the desired properties of the plastic. The rest of the preparations were kept at a constant amount to the variation in starch content. Here, commercial plastics were used as control. Preparation 1 manifested properties closely related to the control. The samples were found to be water soluble, however, would not dissolve in an organic solvent like ethanol. Tests were conducted to determine which sample is comparable with the control.

#### **DISCUSSIONS**

Bio-plastics can either be made into a sheet or can be molded into any shape with a little bit of difference in the thickness and durability. They can be sold to market, however, the esthetic look should be considered for the consumers to buy. Bio-plastics would not certainly cause any pollution to the environment since the composition is completely from biomasses and do not contain any toxins, thus, it could be a good substitute to the non-biodegradable plastics to lessen the pressing environmental issues.

**KEYWORDS:** Bioplastic, Cassava Starch

**SUBMISSION ID:** R013-SURSUR-0062

**Challenge in Science Investigatory Activities in Gaudencio B. Lontok  
Memorial Integrated School**

Carmelita Reyes, Department of Education - Lipa

**Abstract**

**INTRODUCTION**

The students in today's classrooms have grown up with technology as a way of life, and accessible literally at their fingertips at very young ages. Teachers are hard pressed to compete with this excess of available information and entertainment, let alone keep up with the ever-changing pace. Investigatory teaching provides the opportunity for the students to play an active role in their learning process in a student-centered environment, engage in a variety of technological resources, and in the process, develop higher-level thinking skills. It is the aim of this action research was to identify the challenges in Science Investigatory Activities encountered by science teachers in conducting Science Investigatory Activities.

**METHODS**

This study used the descriptive survey method. A questionnaire was used to determine the extent of challenges encountered by teachers of Gaudencio B. Lontok Memorial Integrated School in participating and conducting Science investigatory activities. The respondents of this study were eighteen science teachers of Gaudencio B. Lontok Memorial Integrated School who are teaching science from grade three to grade eight.

**RESULTS**

Based on the result of this study, it was found out that the problems in participating and conducting science investigatory projects are the following: lack of experts to assist pupils in the conduct of science investigatory project; lack of skills in conducting investigatory project; no specific laboratory room for the conduct of the study; and inadequate laboratory tools, apparatuses and equipment and availability of resources.

**DISCUSSIONS**

The following suggestions were developed based on the results of the present study: a). Most of the respondents are ages from 30- 33.

b). Majority of the respondents were females. c). Most of the respondents were educated with MA with units. d). Most of the respondents teach for almost 16 to 20 years. e). Most of the respondents teach in Grade III. f). The averageclass size is about 38 pupils per class. g). The top 5 challenges of science teachers in teaching Science Investigatory Activities are the following: "Lack of experts to assist pupils in the conduct of science investigatory project" , "Too many requirements in joining SIP competition" , "Lack of trainings and seminars for science teachers" , "No specific laboratory room for the conduct of the study" and "Inadequate laboratory tools, apparatuses and equipment" .

**KEYWORDS:** Challenge, Investigatory, Student-Centered, Technology, Thinking Sills,

**SUBMISSION ID: R04A-LIPAC1-0180**

## **Chili Peppers (Capsaicin) as an Alternative Pesticide**

Jared Ed M. Lacar, Calsen Science Club  
(Adviser: Criselda De Chavez)

### **Abstract**

#### **INTRODUCTION**

Pesticides are any substance that is used to repel pests. However, exposure to it poses a real threat to human health and to the environment. Capsaicin is a hydrophobic substance, which acts on epithelial cells of animals. It is not poisonous and naturally occurs in the environment as a defense mechanism. Thus, the study was conducted to use capsaicin as an ingredient to produce a safe to use, cheap, and environmental friendly pesticide.

#### **METHODS**

The study adapted an experimental research design. There were two products tested; a commercial pesticide and an alternative pesticide with capsaicin as its active ingredient. In the design, three variables were taken into consideration and were tested: first is the survival time of the common farm pests: grasshoppers, caterpillars, and snails if sprayed with the alternative pesticide with low, average and high capsaicin concentration. Next came the survival time of the same garden pests sprayed with a commercial pesticide, and the best concentration from the first experiment. The researchers also considered testing the alternative pesticide against ants and termites.

#### **RESULTS**

The first experiment tested the three distinct concentrations with a survival time mean of 15.27, 14.71 and 8.6221 minutes respectively. One-way ANOVA was used with an f-value of 6.32; larger than the critical value, 3.739 that rejected the null hypothesis. In the second experiment, the best concentration was pitted against the commercial pesticide with a mean of 0.512 minutes. T-test was used resulting a t-value of 2.31 as compared to the critical value of 1.423, which rejected the null hypothesis. This implies that commercial pesticide is still superior in terms of effectivity than the alternative pesticide. In the last experiment, the alternative pesticide with high capsaicin concentration was used against ants and termites. These showed a survival time mean of 30.67, and 23 seconds respectively.

#### **DISCUSSIONS**

An alternative pesticide using capsaicin extract from chili pepper as the active ingredient is somewhat plausible. The pesticide was successful in eliminating the threat of pests, however in the mercy of luck. The concentration was not measured molecularly, while the health of the pests was also not consistent. Along with it came a small sample size and rough sterilization of the tools used. This pesticide is recommended to households and not to the industrial sector.

**KEYWORDS:** Chili, pesticide, concentration, capsaicin

**SUBMISSION ID: R04A-CALAMB-0115**

## **Cigarette Filter as Main Component of Paper Glue**

Margret Christiane T. Aguila & Nadine Isabel M. Adena, Calsen Science Club  
(Adviser: Criselda De Chavez)

### **Abstract**

#### **INTRODUCTION**

The government has implemented the Republic Act No. 9211 or Tobacco Regulation Act of 2003. Currently, there are millions of Filipinos who smoke despite the health risks. This massive consumption leads to the problem of cigarette filters' waste management. As a response to this particular problem on waste, the researchers devised a way to make paper glue from a reusable waste, cigarette filters, as its main component. Effective utilization of used cigarette filters will aid in reducing the generation of this waste.

#### **METHODS**

Two experimental set-ups, Set-up A with 10 g of cigarette filters and Set-up B with 14 g of cigarette filters and one control, which is a commercial paper glue. The paper glue was made by melting the cigarette filters in 240 ml of acetone. After it was melted, they were stirred until they mixed with the acetone and become viscous. The test performed to gather the data was viscosity test at Food Science Cluster at the University of the Philippines, Los Baños, Laguna, the time it took for the paper glue to dry was recorded and the test for adhesiveness was the pull-off test. For testing the normality of the distribution, the Shapiro Wilk Test was utilized. The results within the two setups and control are not normally distributed. Having that, Kruskal Wallis test with post hoc was used.

#### **RESULTS**

Kruskal Wallis test showed that the null hypothesis was rejected with a 0.05 level of significance. Based on the results, Set-up A, with 10 g of cigarette filters, and the control set-up have a high significant difference, while set-up B, and with 14 g of cigarette filters and control have no significant difference. In terms of viscosity and drying time, it appears that set-up B with 14 g of cigarette filters performed better results the same as the control. In addition to this, the product has less adhesive properties than the commercial one in terms of adhesiveness.

#### **DISCUSSIONS**

After the said results, the study seeks for recommendation to use a reagent, which has the low concentration to lessen the toxicity content of the paper glue. Overexposure of humans to high concentrated acetone may lead to severe health conditions. The researchers also suggest providing additional additives and performing further laboratory tests to enhance the properties of the paper glue such as its drying time, viscosity and stickiness contribute to the study.

**KEYWORDS:** cigarette filters, viscosity, drying time

**SUBMISSION ID: R04A-CALAMB-0116**



## **Citrus Fruits as a Bacterial Hand Sanitizer**

Christian Tolentino, San Felipe ES, San Felipe Padre Garcia Batangas

### **Abstract**

#### **INTRODUCTION**

The researchers' main purpose in conducting this study is to help create a product, which is cheaper and could use the same quality as the one using oranges. This study aims to help people who do not have enough money to buy expensive hand sanitizer. It also helps the researchers determine the similarities and differences between the two products have by comparing their qualities.

#### **METHODS**

The procedure in making this product is simple. First, scrape the gel inside the Aloe Vera leaves. After scraping the gel, put it in a plastic container and added 1 cup of Ethyl alcohol and 2 teaspoons of Glycerine. Next, grate the orange to get the zest and add it to the mixture, then, mix until well blended. Lastly, the group recycled a small bottle that was used as a container for the mixture.

#### **RESULTS**

The researchers concluded that the Aloe Vera gel can be used to make the hand sanitizer more jelly and the zest of the orange more hydrating to the skin. It is easy to make since the materials used are found in stores and have the cheapest price. The group is confident that the product is effective because of Ethyl alcohol. The researchers advised using more Aloe Vera for the product to be more jelly.

#### **DISCUSSIONS**

The researchers, therefore, conclude that the citrus hand sanitizer was confidently a success because of the presence of Ethyl alcohol that made it more disinfectant and the ingredients used to make the hand sanitizer were readily available and easily accessible in the market.

**KEYWORDS:** SCIENCE INVESTIGATORY PROJECT HAND SANITIZER

**SUBMISSION ID:** R04A-BATANP-2074

## **Clown Knifefish (*Chitala rnate*) scales/skins as Wire Insulator**

Hudson Ralph D. Mastrili & Joy Aprealle P. Natanauan, Calsen Science Club  
(Adviser: Criselda De Chavez)

### **Abstract**

#### **INTRODUCTION**

Copper conductor PVC cables are extensively used for domestic home appliances wiring due to its high tensile strength, superior conductivity, and ease of jointing. However, the continuous depleting of native populations of smaller species became a huge problem for the local fishermen in Laguna as various individuals affected condemn. Thus, there is a need to explore an alternative way of reducing knifefish invasion with having a bio-friendly use in the community. The study determined the effectiveness of Clown Knifefish skin/scales as wire insulator compared to commercialized plastic wire insulator.

#### **METHODS**

The 5cm<sup>2</sup> by 4mm pre-treated fish scales, fish skin, and combined fish skin and scales, were produced after undergoing removal of non-collagenous protein of scales, extraction of collagen in pre-treated skin and filtration. Three setups were done and tested using multi-meter to determine its resistance and breakdown voltage. Since the data gathered was skewed, Multivariate Test for Variance was used. Kruskal-Wallis analysis of ranks was used to assess the hypothesis of the different samples that are drawn from the same or from distributions with the same median (He, 2017).

#### **RESULTS**

Results showed that the prepared Clown Knifefish skin had the highest mean of 3.6 A in terms of the current each sample can handle (Fish skin and scales= 2.8A; Fish scales=2.5A). While fish scales had the highest mean of 45.0 ohms in resistance (Fish skin=25.0 ohms; Fish skin and scales=35.0 ohms). In testing the highest voltage limit, fish skin had the highest mean that yielded 79.0 mV (Fish scales=39.0mV; Fish skin and scales=52mV). Comparing these result to the 5cm<sup>2</sup> commercialized PVC wire insulator that yielded 6A for current it can handle; 72mV in test for voltage limit; and 39 ohms in terms of resistance, the use of 0.368 as significant value makes the null hypothesis accepted since there is no significant difference in the breakdown voltage and resistance between the fish scales, fish skin, and combined fish skin and scales.

#### **DISCUSSIONS**

The study recommends to use a grinder machine in producing a more accurate product and to test it with high technology multi-tester to measure high amount voltage, current, and resistance of wire insulator. The study also recommends considering the temperature in preparing the collagenous part of the scales and skin, since a variety of collagens are sensitive to varying temperature.

**KEYWORDS:** wire insulator, knife fish

**SUBMISSION ID: R04A-CALAMB-0113**

## **Coconut (*Cocos nucifera*) Meat and Charcoal as Potential Power Source**

Dennis E. Estrella Jr.

### **Abstract**

#### **INTRODUCTION**

The study entitled, "Coconut (*Cocos nucifera*) meat and charcoal as potential power source" was conducted to determine the potentiality of the coconut meat and charcoal as battery in terms of voltage, current and capability to light a LED bulb.

#### **METHODS**

The study was conducted at Science Laboratory, Tacurong National High School, Tacurong City from June to September 2017. It was laid out in Completely Randomized Design with three treatments replicated three times.

#### **RESULTS**

Results show that all three treatments showed no capability to light a LED bulb. Treatments 1 and 2 have no significant difference when it comes to current compared to treatment 3. The mean of every treatment shows a significant difference when it comes to voltage with treatment 3 who has the higher voltage.

#### **DISCUSSIONS**

Coconut (*Cocos nucifera*) meat and charcoal as the potential battery is not capable of lighting a LED bulb but has the potential to create electricity as to the shown significant difference by treatments when it comes to voltage and current.

It is also concluded that in terms of voltage and current the  $\Pr(> F)$  is less than the alpha which is 0.5, therefore, it means that the  $H_{O1}$  and  $H_{O2}$  are rejected.

**KEYWORDS:** COCONUT MEAT, CHARCOAL, POWER SOURCE

**SUBMISSION ID: R012-TACURO-0023**

**Coconut (*Cocus nucifera*) Fiber and Chicken (*Galus galus domesticus*)  
Feathers as a Component in Making Fiber-Cement Board**

Clarissa Marie Galinato

**Abstract**

**INTRODUCTION**

In this research study the researcher aimed to produce a fiber-cement board out of coconut fiber and chicken feathers that can be beneficial to the community as well as to its residence.

**METHODS**

In preparing the fiber-cement board coconut fiber were cut into 0.5 cm and placed into a container, Chicken feathers were also prepared and placed into the basin with water, salt and detergent and washed to remove the tissue that were included upon collection. It was then sun dried for three (3) days. To prepare the fiber-cement board mixtures of chicken feathers and coconut fiber were mixed thoroughly until it attained consistency and placed in the 10cm x 10cm molder.

**RESULTS**

Based on the data gathered, it can be concluded that 100% of chicken feathers gained an acceptable result based on the standard of fiber-cement board in characteristics and properties in terms of texture, thickness swelling, heat capacity, impact test and durability. In terms of fire resistance 100% of coconut fibers gained the acceptable result. Whereas, 25% of coconut fibers and 75% of chicken feathers gained the acceptable result for water holding capacity, thickness swelling, drilling characteristics and in durability.

**DISCUSSIONS**

Therefore, the results showed the greater amount of chicken feathers the more it possesses the characteristics and properties of a good quality fiber-cement board in terms of texture, thickness swelling, heat capacity, impact test and durability while greater amount of coconut fibers are needed for fire resistance.

**KEYWORDS:** coconut fiber, chicken feathers, fiber-cement board

**SUBMISSION ID: R04A-CALAMB-0089**

Coconut Residue Pasta and Evaluation of its Sensory Characteristics

Bernalet Matanguihan, Student

Abstract

INTRODUCTION

Coconut residue gained after the extraction of milk is inedible and only a few employed it as fertilizers. Most of its quantities are left to rot as of waste material. Apart from it, according to the report of the Food and Nutrition Research Institute of Department of Science and Technology (2013), it can be turned into coconut flour. This coconut flour can be able to use in the production of pasta. The DOST-FNRI proved that coconut flour contains dietary fiber and high protein. Recent studies have indicated that the increased intake of high fiber food was found to be effective in elimination of waste, sugar, and fat from body; dietary fiber may prevent constipation; consequently, the present study will transform the waste material the coconut residue into nutritive pasta as a practical response.

METHODS

The coconut residue was turned into coconut flour by drying, roasting and baking. The coconut flour was manufactured as coconut pasta by cutting it into strips and used it for actual cooking. The researcher prepared three (3) samples of coconut pasta with different amount of coconut residue (120g, 240g and 360g) and all-purpose flour (360g, 240g, 120g). They were evaluated in terms of sensory characteristics. And to analyze the data gathered, analysis of variance was employed.

RESULTS

Table 1. Characteristics of coconut residue pasta in terms of Sensory Characteristics

General Acceptability 5.35 5.75 5.3      Slightly Like      Moderately Like Slightly Like

DISCUSSIONS

Beyond conducting the evaluation and analysis of variance for each characteristic, results showed that there is no significant difference among the three samples in terms of appearance, odor, taste and general acceptability while there is in terms of texture. Sample 2 (50% coconut residue, 50%all-purpose flour) has the most favored sensory characteristics. Using coconut flour represents a major role in production of pasta.

**KEYWORDS:** coconut flour, coconut residue, pasta

**SUBMISSION ID:** R04A-CALAMB-0074

## **Coin-Operated Vendo-Wifi Machine**

Mark Vincent L. Rosario, Student

### **Abstract**

#### **INTRODUCTION**

The researchers developed an intelligent machine in the wireless local area network connection, a Wi-Fi Vending Machine that provides more accessible and cheaper internet connection that provides security and fair use.

#### **METHODS**

Using the Ethernet cable connect your router to the Wi-Fi so that you can access the internet, connect all the wires to their corresponding GPIO pins and supply power to the Raspberry Pi 3 and multi coin acceptor. Open your Wi-Fi and connect to the machines hotspot you will see a notification that says sign in to the Wi-Fi network click it and you will be redirected to the log in page. Insert your coin, enter your mobile number and press the # pad to confirm it wait for the SMS to be sent to you. Enter the user name and password that was sent through SMS so that you can connect to the Wi-Fi.

#### **RESULTS**

Results show that the closer you are to the machine the faster the internet connection is, the further you are to the machine the slower the internet connection is.

#### **DISCUSSIONS**

Based on the Analysis of Variance, statistically showed that there Based on the analysis of variance in terms of Speed of Internet Connection there was a significant difference in 5 meters away, 10 meters away, and 15 meters away it gained the p-value of 0.0238, which was less than the alpha value 0.05. Hence, the hypothesis was rejected.

**KEYWORDS:** COIN-OPERATED, VENDO, WIFI, MACHINE

**SUBMISSION ID: R012-TACURO-0026**

**Comparative Analysis between the Effectiveness of Auxins Indole Butyric Acid (IBA) and Naphthalene Acetic Acid (NAA) and Rooting Media on the Growth of Lunasia amara Blanco (Lunas)**

Agustine S. Santiago, Dave Richard J. Vasquez, & Syrus Christian S. De Guzman

**Abstract**

**INTRODUCTION**

Lunasia amara Blanco (Lunas) is a shrub used in traditional medicine to cure snakebites, eye irritation, skin irritation, and stomachache. Lunas were often found in mountainous areas and there were only a few of these kinds left. In the Philippines, it can be found in Bulacan and Palawan, placed on a protected area. This plant is rarely seen because it can only grow in a mountainous area and in the wilds. This investigatory project aims to compare the effect of different auxins (IBA and NAA), which is a plant growth hormone, on Lunas. The goal of this study was to accomplish the main objective, which was to grow the plant in a different environment. This plant can live without supervision, and if it succeeds then the species would continue to live and be used in many ways. To clarify the primary objective of this study was to grow the plant in its unnatural habitat.

**METHODS**

Plant samples of Lunas were gathered in Maragondon, verified in the National Museum for the verification of the plant. Four inches branch of the main stem was cut from the plant to root in 300 parts per million of Indole Butyric Acid and Naphthalene Acetic Acid. The branches soaked in the auxins for 24 hours and directly planted into the loam and potting soil. The plants were placed outside to get enough sunlight. Two months after planting, the growth response of the height of cut Lunas was observed. Two-way ANOVA was used to analyze the data.

**RESULTS**

Results showed that among the six treatments, the length of the cut branch was longest at treatment (Loam soil with auxin NAA) with an average of 19.2 cm of length and shortest at treatment (Potting soil in the controlled set-up) with an average of 4 cm of length.

**DISCUSSIONS**

Based on the results, loam soil without auxin has the least effect on the length of the branch developed. This means that without auxin then there is slow growth in the branch of cut Lunas. However, loam soils with NAA and IBA, can be an efficient growth hormone in propagating Lunas.

**KEYWORDS:** Lunas, Auxins, Rooting Media, Stem Cutting, Two-way ANOVA

**SUBMISSION ID: R04A-CAVTP-0974**

## **Compost Mixture: It's Effect on Growth and Yield of Lettuce**

Zaira Mei Macandili

### **Abstract**

#### **INTRODUCTION**

Poverty has deprived people of access to nutritious food. Such abhorrent conditions have led to stunting and malnutrition, which has crippled generations of Filipinos. If we are to combat malnutrition, we need to think in terms of ecosystems. We need to bring together efforts from government, from NGOs and multilateral agencies, and from individuals. The quest for strengthening the school health and nutrition programs for the achievement of the Education for All (EFA) and Millennium Development Goals under DO No. 43 s. 2011 deemed the interest of the best practices. This is to sustain support for the school-based feeding program for there are even more children who have to shepherds into the schools but the government resources are simply not enough to provide them all which they are entitled to. This was undertaken to assess the effect on growth and yield of lettuce in terms of height and number of the leaf. Lettuce plants thrive in nutrient-rich soil. Once the seedlings emerge, a dose of fertilizer can be applied to maximize lettuce leaf production. Choose a well-balanced fertilizer with equal parts nitrogen, potassium and phosphate. The aim of this investigation was to evaluate the productivity of lettuce with organic fertilizers and compare with mineral fertilizing.

#### **METHODS**

This is an experimental type of research, which aimed to determine the effectiveness of compost mixture on the growth and yield of lettuce. Lettuce growth characteristics were measured on a random sample of ten plants, taken from each experimental bed and the following data were recorded: plant height, leaf number per plant. Qualitative data was used based on the gathered report from the Gulayan sa Paaralan coordinator, School-Based Feeding Program coordinator, and health nutrition officer of the school. The frequency and ranking tool were used to assess the result.

#### **RESULTS**

It is noticeable that compost mixture implementation had a great effect in meeting the growth and yield of lettuce production. On the onset that it was not implemented, pupils, teachers, and parents found difficulty in attaining the volume of lettuce as per need to support the school-based feeding program. Geared with the best practices, compost mixture implementation is one of the potent strategies in organic vegetable gardening such as lettuce production.

#### **DISCUSSIONS**

The results demonstrate the need of the school to continue seek opportunities on the health and nutrition aspects of the pupils towards establishing a vegetable garden in the school thru the best practices linked to the partnership. Stakeholders must ensure the accuracy of the mixture to provide the mineral composition needed by the soil to increase its fertility and the use of 3Rs, Reduce, Reuse, and Recycle, be adopted in the formulation compost mixture.

**KEYWORDS:** abhorrent, productivity, implementation, formulation, mixture

**SUBMISSION ID: R04A-BATANP-0577**



## **Consistency in Utilizing Constructivism Approach and its Impact among Grade 7 Learners**

Monaliza Biscocho, Department of Education - Batangas

### **Abstract**

#### **INTRODUCTION**

Science is one of the learning areas that most of the students find it hard to learn. It is a learning area in which two other areas are involved - Mathematics as the measuring tool, and, English as the medium of instruction. This mindset among learners seems to serve as a barrier to their interest in the subject. The conduct of this study will further explain how Constructivism Approach of teaching establish an easier way of learning Science concepts and skills.

#### **METHODS**

The study utilized descriptive survey research using quantitative and qualitative methods. The population sample involved 75 students from Grade 7 are randomly selected in each group. The instruments used was a researcher-made questionnaire in which it contains the impacts of learning activities provided by the Science teacher.

#### **RESULTS**

The highest mean score garnered in the study was 3.72 (Strongly Agree) and the lowest mean score is 3.36 (Agree). In general, it signifies that the learning activities provided has a positive impact on them and the teacher have utilized the teaching practice appropriately.

#### **DISCUSSIONS**

The results infer that the teacher should serve only as a facilitator of the lesson and learners should not be a direct receiver of concepts and skills needed. There must be a "hands-on, minds-on" during the learning process. This is why teachers must provide differentiated instruction in their practice of teaching.

**KEYWORDS:** Constructivism, differentiated instruction, learning

**SUBMISSION ID: R04A-BATANP-1532**

## **Content Analysis of the Curriculum of Grade School Science Program of the Philippines and Singapore: A Basis For Enhancement in the Country**

Venus Bermoy, Sta. Anastacia Elementary School, Division of Batangas Province

### **Abstract**

#### **INTRODUCTION**

Science is both content and process and they are intertwined. The value of Science process is to advance content or the body of knowledge. Without content, the student will have difficulty utilizing the Science process skills because it cannot exist in a vacuum they are learned in context.

#### **METHODS**

This study focused on the curriculum of grade school science program of the Philippines and Singapore. It utilized the descriptive method of research and data gathering.

#### **RESULTS**

Science Education in the Philippines and Singapore are being compared through their objectives, content, assessment, facilities, and faculty.

**OBJECTIVES** The goal of the Science Program in the Philippines is to understand the natural phenomena by defining its nature while in Singapore focuses on engaging the students in project-based investigation.

**CONTENT** Philippine Science Curriculum recognizes the place of science and technology in our lives integrating it in the social, economic, personal and ethical aspects of life, thus preserving our country's cultural heritage. While in Singapore, its content was showing curiosity in exploring the surroundings.

**ASSESSMENT** Philippines uses tests, examinations as tools in evaluation and Singapore assessment focuses on the design and conduct of scientific semi-structured assessment tools and hands-on subject.

**FACILITIES** Schools here are commonly in 8 x 7 meters space housing 48 students but Singapore, have a small classroom size with structured group learning setting fully equipped computer.

**FACULTY** Teachers here are graduates of BEED and BSED required to have major science subjects, should take science seminars, but in Singapore, "A" level certificate and polytechnic diploma holders may compete for a place in either the 2-year Diploma in Education or the 4-year Bachelor of Science Education.

#### **DISCUSSIONS**

The Science program of Singapore is highly technical because it uses technology-based instruction compared to us that utilizes a traditional mode of instruction in doing scientific inquiry, investigation, and experimentation.

**KEYWORDS:** curriculum, technology

**SUBMISSION ID: R04A-BATANP-1703**

## **Contextualized and Localized Handouts: An Intervention in Grade V Science**

Syrobbie Ballon, Tabaco City Division

### **Abstract**

#### **INTRODUCTION**

This action research was funded by the Department of Education through the Basic Education Research Fund. Textbooks aligned to the foregoing curriculum were not available at the time of the research. Pupils are dependent solely on their notes. This research was focused on the effectiveness of contextualized and localized handouts as an intervention in Science in Grade V.

#### **METHODS**

The traditional experimental design had been utilized in this particular study. Pre-tests and post-tests were given to both the experimental and control group. The researcher made use of her designed contextualized and localized handouts in Science and distributed to the experimental group may it be before, during or after the discussion. The control group used their notes and information from other sources as reference.

#### **RESULTS**

The researcher found out and concluded that the performance level of both groups in Science in pre and posttest showed an improvement. However, the experimental group increased higher than the control group. The pre-test PL of the control group is 27.10% and the post test PL is 45.03%. The pre-test PL of the experimental group is 29.31% and the post-test PL is 55.59%. Hence, there is a significant difference in the performance level in the pre and post-test of the two groups in Science. There is no significant difference between the performances of both groups in the pre-test. This implies that the two groups' performance in pre-test is categorically equal and is reasonable to be the subjects of this experiment. In post-test, there is a significant difference between the performances of both groups, according to the independentt-test results the performance of the experimental group is higher than the performance of the control group.

#### **DISCUSSIONS**

It indicates that after utilizing the contextualized and localized handouts, the academic performance of Grade V- Narra pupils increased significantly when compared to the pre-test. This supports that the contextualized and localized handouts are effective in increasing academic performance among schoolchildren. In view of the findings and conclusions of the study, the following recommendations are given: The Science teachers from grade IV-VI must adapt the use of handouts in teaching Science to improve the performance level of the said subject, though it can also be done to other subject areas especially on subjects which textbooks are not yet available. Teachers should undergo intensive training in designing contextualized and localized handouts.

**KEYWORDS:** CONTEXTUALIZED, LOCALIZED, HANDOUTS, INTERVENTION, SCIENCE

**SUBMISSION ID: R005-TABACO-0009**

## **Coolmac: An Alternative Cooling Machine**

Dona B. Din & Richard D. Ramos, Alupay National High School  
(Adviser: Mac Millan Tobeo)

### **Abstract**

#### **INTRODUCTION**

Technology brings many effects in humankind, whether these are neither advantages nor disadvantages. Factories, gadgets, vehicles, modern machinery, power plants, and many more are works of technology. Household refrigerators and freezers are found in almost every home on the industrialized parts of the world and in increasingly large number elsewhere. Most refrigerants are known for having a negative effect on the environment since they contribute to global warming and ozone layer depletion. With this, the researchers designed a cooling machine, which is a handy one in which people can be able to bring it anywhere. It is smaller compared to the typical refrigerator, a cheaper one, for its material came from previously useless things that are converted into essential pieces.

#### **METHODS**

The descriptive method of research was used in this study. The study involved 84 students from different track such as Academic Track (STEM 11 and 12) and Technical-Vocational-Livelihood (TVL-EIM 12). The survey questionnaire, observations and direct interview would be used in order to gather data that are needed. The method presented was used to describe the features of the alternative cooling machine made from recycled materials.

#### **RESULTS**

Using recycled materials, the researchers created an alternative cooling machine that is easy to assemble and can provide cold water conveniently. It is eco-friendly for it does not produce chlorofluorocarbon, it is hand-carry and leads to lower bills. It is then necessary to prepare this cooling machine tailored to meet those needs without compromising the quality and purposes of the output, particularly for reducing greenhouse gas emissions and better protection of the ozone layer.

#### **DISCUSSIONS**

The researchers aim is to provide a solution to the environmental impacts of refrigerant gases and contribute to the protection of our environment. It is with the reason that refrigerants pose a threat to the environment because of their ozone depletion and global warming potential. The cooling fan as part of an appliance releases the ambient temperature that produces by the system. The researchers used recycled materials coming from the old computer system to produce an eco-friendly product. Natural refrigerants can easily be recycled after use or vented to the atmosphere without a negative impact on the environment.

**KEYWORDS:** CoolMac, Alternative Cooling Machine, Refrigerants, Recycled Materials, 3R's, chlorofluorocarbons

**SUBMISSION ID: R04A-BATANP-0041**

## **Copper-Zinc Enhanced with Graphene and Hydrogel Electrolyte as an Energy Storage**

Judy Zamudio, Kaytitinga National High School

### **Abstract**

#### **INTRODUCTION**

The main aim of this study is to make energy storage with the use of Copper-Zinc Enhanced with Hydrogel Electrolyte. This project will be useful in times of unanticipated things such as calamities, disasters, and emergency responses that require a temporary supply of energy. This project also focused on obtaining a voltage output of 3V when the layered copper, zinc, and hydrogel electrolyte are tested.

#### **METHODS**

The researchers prepared 3 different electrolyte solutions: a. 12.5 mL each of saltwater and sodium hydroxide, 25 mL of citric acid, b. 17 mL of saltwater, sodium hydroxide, and citric acid, c. 20 mL each of saltwater and sodium hydroxide, 10 mL of citric acid; to find out whether if there is a significant difference of the voltage exhibited by the different concentration of the solutions. After the experimentation, the researcher was able to make a hydrogel electrolyte by mixing three tablespoons of sodium polyacrylate, 50 mL of an electrolyte mixture, and three teaspoons of graphite powder. From this setup, the voltage output was produced.

#### **RESULTS**

The result shows that the three different electrolyte solutions produced different amounts of voltages: the first electrolyte solution gives 0.71V, the second electrolyte solution gives 0.73V, and the third electrolyte solution gives 0.79V. This result made the researcher reject the first null hypothesis and accept the first alternative hypothesis. Thus, there is a significant difference in the voltage exhibited by the three different electrolyte solutions.

#### **DISCUSSIONS**

Based on the data that collected and analyzed, the research concluded that there was a significant difference in the voltage exhibited by the three different electrolyte solutions. A voltage output of 3V was not produced when the layered copper, zinc, and hydrogel electrolyte was tested. Hydrogel electrolyte was produced by mixing three tablespoons of sodium polyacrylate, 50 mL of an electrolyte mixture, and three teaspoons of graphite powder, and it was able to produce a voltage output.

**KEYWORDS:** energy storage, electrolyte, investigatory project

**SUBMISSION ID: R04A-CAVTP-1232**

## **Customized Peltier Module as Thermostat Electric Generator**

Angelo Stephen A. Bolodo

### **Abstract**

#### **INTRODUCTION**

People cannot live without electricity. Electricity has been around the time since we were born that can electrify different kinds of materials that need electricity. It has made people all around the world finish a day with a very great smile. Electricity is a convenient and controllable form of energy that we use every day to power up our appliances, providing light and cool our homes. Electricity is a secondary energy source, meaning it is generated from the conversion of primary sources of energy, such as fossil fuels (coal, natural gas, and oil), nuclear power and renewable sources (wind, hydro, solar, geothermal).

#### **METHODS**

The procedure are as follows: Prepare all the materials, such as Peltier module, plastic container, and heat sink prepared together with the other materials such as dynamo, wires, propeller, and etc., Assemble the dynamo and wires, then create a small cube using the plastic containers and paste the half of the hydropower at the cut container. Create a hole and insert the tube, Use an electrical tape for the connection of two cut wires and pour the cold water inside the cube and put the beaker with the hot water on the bottom, then wait until it works.

#### **RESULTS**

The results were used to describe the potential of Customized Peltier Module as Thermostat Electric Generator in terms of lifespan, voltage, temperature, and volume of water. Results showed that Trial 1 of TC1 (90°C of hot water and 5°C of cold water) has the longest lifespan among the three trials.

#### **DISCUSSIONS**

The study revealed that Customized Peltier Module as Thermostat Electric Generator has the potential to electrify the 6V DC Motor using 90°C and 5°C, 70°C and 10°C, 50°C and 15°C of water.

**KEYWORDS:** PELTIER MODULE, THERMOSTAT, ELECTRIC GENERATOR

**SUBMISSION ID: R012-TACURO-0028**

## **Design and Improvement of Microbial Fuel Cell**

Kirk Danyelle R. Novela, General Emilio Aguinaldo NHS

### **Abstract**

#### **INTRODUCTION**

This research aims to design a microbial fuel cell and enhance the amount of generated electricity using recycled materials and wastewater. The researcher conducted this study to help address the increasing demand for electrical energy, allow the people in the remote areas to have access to electricity, and solve problems involving treatment and disposal of wastewater.

#### **METHODS**

To determine the effect of the number of carbon rods used in the cathode and anode on the amount of electricity generated, R1 (1rod), R2(2rods), R3(3rods) and R4(4rods) were prepared. All set-ups have the same sizes of the bottle and filled with the same amount of distilled and wastewater (700ml) but differ in a number of rods. To know the effect of volume of water used on the power output of the cell, set-ups have the same number of rods (2) but have differences in terms of the amount of clean and wastewater (V400, V700, V1000, and V1400). Lastly, to know the effect of the presence of the plant in the anode on the power output of the cell, two set-ups were created. NP served as the control group. All set-ups were the same except NP(no plant). The voltage and current were acquired every minute in each set-up for the first one hour of the first day. During the second day, measurements were taken within 10 mins. In the succeeding days, measurements were taken every 30 minutes.

#### **RESULTS**

In terms of the number of rods, results showed that R2 (2rods) yielded the highest voltage, current, and power of 0.952V, 0.163A and 0.154W, respectively. Regarding the amount of water, V1000 (1000ml) had the highest recorded average voltage of 1.004V while V1400 (1400ml) yielded the highest current of 0.380A and power of 0.322W. However, considering the presence of plants, results revealed that P2 (set-up 2 with plant) had the highest power output of 0.291W.

#### **DISCUSSIONS**

Results based on ANOVA showed that there is a significant difference between V400, V700, V1000 and V1400 in terms of voltage, current, and power. The findings implied that increasing the amount of wastewater also increases the amount of electricity generated. Lastly, P1, P2, and NP were prepared to determine the effect of a plant on electricity generation. This study confirms that wastewater energies can be converted into electrical container proven that it can light up a bulb. Increasing water level affects the amount of electric current. Moreover, it is better and practical to use two carbon rods and the usage of the plant can increase the presence of current and power.

**KEYWORDS:** microbial fuel, electricity, energy

**SUBMISSION ID: R04A-IMUSC1-0034**

## **Designing Homemade Water Wheel Direct Current Generator**

John Francis E. Gonzalbo, Department of Education, Laiya National High School

(Adviser: Catalina Punzalan)

### **Abstract**

#### **INTRODUCTION**

Renewable energy consists of a reusable source of energy that is naturally replenished. DC generators, also known as a DC motor, that needs mechanical energy to produce direct current electricity. In this study, water wheel converts the falling water from the aquarium which is a rotational force power that will be used to spin the DC motor (Dynamo) to produce direct current electricity. The energy produce can be used to light the bulb needed by the plants on the top of the aquarium.

#### **METHODS**

The experimental method design was used in this research. The researchers made 5 times 1-minute observation to measure the flowing electric current by the use of electric current tester.

#### **RESULTS**

The homemade water wheel generator lightened a small led bulb that was used as artificial light for the plants on the top of the aquarium. The researcher gathered data in two situations that were used to get the average flowing electric current by the use of 1-minute observation with the electric current tester. The first situation, the LED light was off and in 5 times 1-minute observation to measure the flowing direct current electricity; the researchers got 0.15W, 0.12W, 0.12W, 0.15W, 0.15W with an average of 0.138 Watts. The second situation was the Led light is on and in 5 times 1-minute observation; the researchers got 0.078W, 0.0792W, 0.0801W, 0.0798W, 0.0807W with an average of 0.0796 Watts. The data gathered also showed that the wattages produced depend on the RPM (Revolution per minute).

#### **DISCUSSIONS**

The result demonstrated the need of large volume of falling water in order to produce higher electrical current because the wattage produced by the dynamo or DC motor depends on the RPM (Revolution per Minute) of the wheel. Stronger aquarium pumps can be used to make higher RPM to produce also higher direct current electricity.

**KEYWORDS:** dc motor, generator, waterwheel, electricity, voltage, direct current

**SUBMISSION ID: R04A-BATANP-1329**



## **Determinants of Intermediate Pupils' Critical Thinking Ability in Science: Call for Renewed Administrative Concern**

Maria Theresa Cabullo

### **Abstract**

#### **INTRODUCTION**

Teachers play a vital role in developing young ones. It is the responsibility of the teachers to make their academic instruction effective. They should teach pupils different skills including critical thinking skills. Likewise, parents play a vital role in the learning of the child. They are the primary teachers of the child. As the home is the first school and parents are the first teachers, they bear influence in the development of critical thinking skills of their children. Critical thinking is an important and vital topic in modern education. All educators are interested in teaching critical thinking to their students. It is necessary to teach critical thinking in Science to improve the thinking skills of pupils and thus, better prepare them to succeed in the world. Teachers have to do something to develop the pupils' ability to think critically especially in the field of Science. The researcher, who is currently handling Science subject, was alarmed by the performance of pupils in Science and their ability to think critically.

#### **METHODS**

The research design used in this study is the descriptive-relationship method. The said method determined the respondents' profile, parenting style, teaching style and performance in Science. Relationships between the independent and dependent variables were also looked into. Survey questionnaires were utilized in gathering the needed data and information. The statistical tools applied to the data were frequency count, percentage, mean, standard deviation and multiple regression analysis.

#### **RESULTS**

On parenting styles, the parent respondents practiced great extent of instinctive and attachment and practiced helicopter, authoritative and permissive at a little extent. The teacher-respondents teaching styles were very highly evident in directing, discussing and delegating, while teachers described the pupils with very satisfactory critical thinking ability in Science with respect to analysis and evaluation. On the profile of the respondents, the teachers' number of training, pupils' age and teachers' teaching competence appeared to be the determinant of critical thinking ability on analysis of pupils while on evaluation, the teachers' number of training, teachers' educational attainment, pupils' age and teachers' field of specialization.

#### **DISCUSSIONS**

The results demonstrate that parents helicopter parenting style and teachers discussing style will contribute to the critical thinking ability of intermediate pupils.

**KEYWORDS:** teaching style, parenting style, critical thinking ability

**SUBMISSION ID: R04A-CAVTP-1530**

## **Development and Acceptability of Research Manual: Input to Science Investigatory Project**

Elmerson Paulete & Lyndel R. David, Malaya National High School

### **Abstract**

#### **INTRODUCTION**

Modules are considered as the building blocks of the lesson and it is considered as a collection of materials that is based on learning competencies. The focused of this research is to develop and determine the level of acceptability of the Research Manual to be used in conducting Science Investigatory Project and if there is a significant difference on the level of acceptability of the respondents with respect to the accuracy, user-friendliness, completeness, and clarity in terms of the profile. This action research was conducted due to the observation that both teachers and students found difficulty in conducting Science Investigatory Project.

#### **METHODS**

Purposive Sampling Technique was utilized in the selection of respondent. The respondents were the secondary teachers in District of Pililla who are teaching Science subject. The researchers developed the Research Manual and validated by the Science Consultants and questionnaire checklist was utilized to determine the level of acceptability of the Research Manual as perceived by the respondents. After the validation of the manual and questionnaire checklist, it was administered to the respondents, and then retrieval followed. The researchers consolidated the data.

#### **RESULTS**

Majority of the respondents were female and teaching for 1 year to 5 years. Speaking of the level of acceptability of the respondents to the Research Manual, it obtained an average of 4.84 with a verbal interpretation of very much accepted. There is no significant difference on the level of acceptability on the Research Manual as perceived by the respondents in terms of the gender and length of service in teaching Science since the results show that the P-values of 0.105 and 0.547 for gender and length of service respectively are greater than the level of significant (0.05).

#### **DISCUSSIONS**

Based on the results obtained, it implies that the research manual can be used as teachers and students reference in making/ conducting Science Investigatory Project. Testing the hypothesis, result manifested the acceptance of the null hypothesis that there is no significant difference on the level of acceptability of the respondents to Research Manual in terms of gender and length of service rendered in teaching Science. Thus, the results of this is the same with Espinosa (2009) have he described module as a set of topics that should be studied in a given period. Hence, modules limit the teacher intervention and pave the way for the teaching-learning process to become more student-centered.

**KEYWORDS:** Development, Acceptability, Research Manual, Science Investigatory Project Science, Secondary, Teaching and Learning

**SUBMISSION ID: R04A-RIZALP-0078**

## **Development and Validation of Multimedia Instructional Learning Materials in Earth and Life Science for Senior High School**

Ma. Ruby Rose Bantigue, Department of Education

### **Abstract**

#### **INTRODUCTION**

Science and Technology plays a significant role for every learner in building strong pillars for economic and social progress in the future. However, based on the students performance in the NAT, science is one of the most difficult subjects that give a very low score in the said area in this regard the researcher would like to developed and validate multimedia instructional learning material that could increase the achievement rate on the said subject.

#### **METHODS**

A. Participants of the Study      5 Science Teachers and 5 Master Teachers of Science for validation purposes.      20 Grade 11 students of OBBNHS-SHS for the experimental group      20 Grade 11 students of OBBNHS-SHS for controlled group

B.      Data Gathering Methods      Utilization and validation of a questionnaire checklist by the 10 experts Pre-test and Posttest which has been developed by the researcher

C.      Plan for Data Analysis      Experimental research design utilizes a survey method in validating the Developed Multimedia Instructional Learning Materials The researcher used percentage and ranking to determine the least mastered competency in Earth and Life Science

#### **RESULTS**

The evaluation of Science teachers in the entire variable has a very in height extent on all variable. The result on pre-test and post-test has 0.05 level of significance, and 59 degrees of freedom, the computed t-value of 78.0 is greater than the critical t-value of 2.0. This means that the null hypothesis is rejected and that there is a significant difference in the performance of the students before and after using the developed multimedia instructional learning materials.

#### **DISCUSSIONS**

This implies that the Develop Multimedia Instructional Learning Materials is an effective tool in improving the students' performance and could be developed base on the list of mastered topic in improving the students' performance in Science. The following recommendations were made:

1. Strengthen the validity and reliability of the study by increasing the number of validators; and
2. Additional interactive activities for the student.

**KEYWORDS:** Science, Multimedia, Instruction, Learning, Materials, Earth, and Life

**SUBMISSION ID: R04A-ANTIPO-0009**

## **Development of Metal Filter Device For Jeepneys**

Anna Patricia Leones, Jan Roie Sumagaysay, Jeline Chyme Leabres, Marc  
Steven Ramos, Malayan Colleges Laguna

### **Abstract**

#### **INTRODUCTION**

In the Philippines, jeepneys are the most important means of transportation. However, they emit harmful gases such as hydrocarbons (HCs) and carbon monoxide (CO) which poses health and environmental problems. On the other hand, charcoal is known for its adsorptive property. Thus, developing a filter, which can be attached to exhaust pipes of jeeps with lump charcoal as its main component, can reduce the emission of these harmful gases.

#### **METHODS**

A pair of holes were created in the middle of the pipe where the aluminum wire is then inserted. After that, a sponge was inserted inside the tube to hold the charcoal with the inserted wire to support it. Next, 40g of lump charcoal is inserted inside the tube and a net was placed on the top of the pipe to enclose it and was held together by the aluminum wire. The filters were then tested on 15 jeepneys, used for more than 5 years and run by diesel fuel as their gas, found within the vicinity of Carmona, Cavite.

#### **RESULTS**

Data has been gathered and collected. T-test was used to find out if there was a significant difference between the average amount of gases emitted by jeepneys with and without a filter. There is this standard percent of gases that a jeepney can emit is 2.20 therefore, all the jeepneys utilized was fell within the standard. Based on the data presented, the number of gases without filter ranged from 1.41 to 1.92 with an average of 1.59 while the number of gases with filter ranged from 1.1 to 1.38 with an average of 1.20. The t-test result between the number of gases with and without a filter was found out that the t-computed value was 8.8028193313 and the t-critical value was 1.761310115 at 0.05 level of significant with a degree of freedom of 14.

#### **DISCUSSIONS**

It was found out that the t-computed value was greater than the t-critical value. That means that there was a significant difference between the number of gases emitted by jeepneys with and without a filter. Therefore, the metal filter device was an effective filter.

**KEYWORDS:** Lump Charcoal, Filter, Jeepneys, Gases

**SUBMISSION ID: R04A-CAVITP-1325**

## **Development of Pupils Scientific Skills Via Computer Aided Instruction in Science VI**

Edgardo B. Din, Jay Anncel Ereno, Rhoda Escolano, & Ruby E. Benozza

### **Abstract**

#### **INTRODUCTION**

Learners today live in a multimedia world and appreciate variety in their learning environment. Some forms of literacy that they can develop include scientific skills, textual, numerical, visual, audio, and multimedia. Both teachers and pupils can benefit by developing their abilities to create, use and evaluate resources. The researcher finds out how computer-aided instruction employed in teaching science meets the challenges in the educational system specifically in terms of development of pupils' scientific skills in science 6.

#### **METHODS**

A quasi-experimental research posttest design was used. It is an empirical study used to estimate the casual impact of an intervention on its target population without random assignment. The idea behind this type of research is to study frequencies, averages, weighted mean and other statistical calculations. The main instrument used in the study was questionnaire-checklist. The results served as the major source of data that would determine the level of pupils' scientific skills using computer-aided instruction.

#### **RESULTS**

The respondents have varied level of scientific skills. The level of development of scientific skills of the pupils along observing had the highest level, which was described as excellent. The 283 pupil respondents revealed that observing is the very foundation of all the scientific skills in science. Among the basic scientific skills, predicting had the lowest level, which was described as very good in the big schools of Gubat South District. Overall, the level of development of pupils' scientific skills using computer-aided instruction was described as very good. It was revealed in this study that all the basic scientific skills of grade six pupil respondents are above average level.

The extent of the utilization of computer-aided instruction in 5 big schools of Gubat South District was described as often utilized. This denotes that teachers of Gubat South District viewed CAI as a very good tool in the development of pupils' scientific skills. Employing CAI in teaching Science will help improve the level of scientific skill among learners.

#### **DISCUSSIONS**

The extent of the utilization of computer-aided instruction has a significant impact on the development of pupils' scientific skills. The results demonstrate the need to employ CAI in teaching Science in order to develop the basic scientific skills of grade six pupils.

**KEYWORDS:** Computer Aided Instruction, Scientific Skills, Science

**SUBMISSION ID: R005-SORSOP-0019**

## **Different Environmental Conditions: Its Effect to the Development of Aggressive Behavior among *Puntigrus tetrazona* (Tiger Barbs)**

Francis Kyle Serrano, Galiel Jerico Paris, Kobe Bryant Talactac

### **Abstract**

### **INTRODUCTION**

The Tiger barbs have unique behavior that is their aggressiveness. The environment in which they live can affect their aggressiveness. This could result into decrease of their population in an aquarium as ornamental fishes. This study was aimed to observe the aggressive behavior of the Tiger barb that they nip their own kind and if different environments affect their behavior. The samples that were used were Tiger barbs.

### **METHODS**

The investigation was done by using four setups. Eight Tiger barbs were put in the control (Set-up A), with floating and non-moving objects (Set-up B) and combined large and small sizes (Set-up C). Twelve Tiger barbs were put in the increased in population of Tiger barbs (Set-up D). Each set-up were observed by Lazy tech action camera. The Tiger barbs were fed with Mignon pellets every day with a total of 0.4 grams. The aquariums were cleaned every two weeks. The results were recorded daily for four months of observation. All of the dead Tiger barbs were disposed in a sealed plastic bag and then in a trash bag for garbage collection with the wastes from the aquarium.

### **RESULTS**

The behavior of the Tiger barbs was recorded and observed. Three Tiger barbs died and had lesions in Set-up A. Two Tiger barbs died and had lesions in Set-up B. They were seen swimming around the objects. Three Tiger barbs died and had lesions in Set-up C. The larger ones were seen chasing the smaller ones. Four Tiger barbs died and had lesions in Set-up D. They were seen swimming in school.

### **DISCUSSIONS**

It can be concluded that using different environmental conditions can lessen the aggressiveness of the Tiger barbs, varying sizes of Tiger barbs in an aquarium does not have an effect on their behavior, and increasing the population of Tiger barbs in an aquarium made them more aggressive. Based on this, Tiger barbs were really affected by which environment they were in just like the other researches stated. The flaw in this study was the difficulty in observing all the set-ups as the researcher did not use a variety of fishes in the study for further investigation. Thus, for this, we can recommend to use a better camera and use a variety of fishes that has aggressive behavior. The beneficiaries will benefit from this study by learning more about the aggressive behavior of Tiger Barbs. This would help them to know more about the precautions that they would need to observe when handling Tiger barbs. This study can also help in making solutions for the aggressive behavior of Tiger Barbs.

**KEYWORDS:** *Puntigrus tetrazona*

**SUBMISSION ID:** R04A-CAVTP-0939

## **Differentiated Instructional Practices for Junior High School Science Subjects**

Ellie Rose Ramos, YES-O

### **Abstract**

#### **INTRODUCTION**

Teachers must change with the times to be effective. The knowledge that not all students learn in the same way prompted the researcher to utilize differentiated instruction in teaching wherein the pathways of learning are differentiated for the learners. Very much aware of the relevance of differentiated instruction in the formation of socially conscious and responsible students, the researcher assessed the use of differentiated instruction in teaching science in public secondary schools. The researcher realized the need for differentiated instruction as an approach in teaching and usage of this instruction as the vehicle to promote better learning in science. The output of the study, which is the proposed differentiated instructional materials for science, will help the teachers address the learning needs of each student.

#### **METHODS**

The study used the descriptive method of research using a researcher-made questionnaire as the main instrument for gathering data. Documentary analysis was also used to measure the level of performance of public junior high school students in science. Focus group discussion was done to gather inputs on material development preparation regarding differentiated instructional practices for JHS science subject. Frequency, percentage, weighted mean and Pearsons product moment correlation coefficient was the statistical tools applied.

#### **RESULTS**

Based on the findings, JHS students had very satisfactory performance in science. Flexible grouping, adjusting questions and rubrics were the most preferred differentiated instructional strategies utilized by public JHS science teachers. Learning infrastructures in support of the utilization of differentiated instruction were often available and accessible. Diverse materials and teaching methods in class and continuous assessment and adjustment of lessons to meet students' needs were the most common differentiated instructional practices utilized by the science teachers. The test of hypothesis revealed that there is no significant relationship between the availability and accessibility of learning infrastructure to the utilization of differentiated instructional practices. Using the gaps found in the study, the developed differentiated instructional materials in science contained a variety of features designed not only to meet students' learning needs but also to maximize utilization of differentiated instruction.

#### **DISCUSSIONS**

This study focused on the development of differentiated instructional materials for public junior high school science teachers and students. The researcher determined the level of performance of junior high school students in science, the differentiated instructional strategies utilized by the science teachers, the available and accessible learning infrastructures in support of differentiated instruction and the extent of utilization of the differentiated instructional practices by science teachers. The researcher also determined the relationship between the availability and accessibility of learning infrastructures to the extent of utilization of instructional practices. Differentiated instructional materials were developed based on the findings and analysis of data.

**KEYWORDS:** Differentiated Instruction, Practices, Junior High School

**SUBMISSION ID: R04A-BATANP-0358**

**Difficulties Encountered by the Teachers in Teaching Science at  
Paaralang Elementarya ng Kinalaglagan, District of Mataasnakahoy**

Brendalyn De Leon, Kinalaglagan Elementary School

**Abstract**

**INTRODUCTION**

Science is one of the greatest vehicles to a nation's progress. Its fundamental objective is to promote the enrichment of life and the recognition of the dignity of the human person, which emphasizes that science directly influences the aspect of human living. With the great advancement in Science, our country in order to cope with the rapid changes that are unprecedented and the turbulent speeding progressive enhancement of Science, place Science as its top priority. Science influences the fact that today is an age of scientific and technological advancement in every aspect of human living. Science causes progress and development beyond imagination. These could be as overwhelming, exiting, adventures confusing, enlightening, complex and awesome advancement in human life. It is SCIENCE that tells the nation's capacity for improvement. Science gives competence to people to cope with this fast-changing world.

**METHODS**

The researcher employed the descriptive method of research to determine the difficulties encountered by the teachers teaching Science in Paaralang Elementarya ng Kinalaglagan, Mataasnakahoy District. According to Palar-Calmorin (2002), the primary purpose of descriptive research is to describe and interpret the prevailing phenomena in a particular research environment. Hence, the researcher wanted to identify the present difficulties encountered by teachers in teaching Science.

**RESULTS**

The pupil-related problems were much felt by the Science teachers as shown by the average weighted mean of 2.64. Ranked first was poor study habits of the pupils with the highest weighted mean of 3.12 very much felt by the teachers. Last in the rank, which was moderately felt by the teacher was lack of positive attitudes toward the teacher with the weighted mean of 1.83.

**DISCUSSIONS**

In light of the findings revealed in this study, the following conclusions were drawn. Pupil-related problems and difficulties in learning resource were much felt by the Science teachers while teacher-related problems were moderately felt by the teachers.

An action plan was proposed to minimize if not totally solved, the difficulties in teaching Science.

**KEYWORDS:** difficulties, public elementary school

**SUBMISSION ID: R04A-BATANP-0150**



## **Digital Learning Activities: Effective Tools to Intensify Students' Performance in Science**

Janine Perez, Department of Education

### **Abstract**

#### **INTRODUCTION**

The research aims to intensify students' performance in science by the aid of a digital learning approach. It identifies the distinct features of digital learning, competencies in science and the extent of how digital approach may be useful. The utilization of the said approach was also determined to know how it would strengthen the learning domains of the students. At the end of the research, recommendation such as what possible digital learning can be used to strengthen and improve the performance of students in science that could be developed by combining the current teaching trend and extracting the advantages of digital learning to achieve the teaching effectiveness was also exemplified.

#### **METHODS**

The descriptive method of research was used in this study with the questionnaire as the main data-gathering instrument. The researchers constructed a questionnaire, which was composed of four parts. After the researcher-made questionnaire was reviewed and validated, it was shown to the principal for approval prior to administration. Forty (40) Grade 10 students from Mataasnakahoy National High School served as the respondents of the study. Ranges and verbal interpretations were used to score the responses in each item of the questionnaire. The responses were also treated with the use of statistical tools such as frequency, ranking, and weighted mean.

#### **RESULTS**

Based on the findings, the most distinct feature of digital learning approach is being learner-centered. Digital learning approach may also be integrated into teaching to develop scientific, technological, and environmental literacy and can make that lead to rational choices on issues confronting the learners. Lastly, the utilization of digital learning approach strengthens the development of learning domains such as cognitive, affective, and psychomotor.

#### **DISCUSSIONS**

In general, the majority of the students were pleased to see that they are showing interests in performing different school activities that will help them unleash their potentials, which is important in their studies. Moreover, they strongly agreed that digital learning approach is an aid in intensifying the student's performance in science and teachers are not only good in using traditional materials in teaching but also in using new technology for the better learning and understanding of the students.

**KEYWORDS:** Digital, Intensify, Performance

**SUBMISSION ID: R04A-BATANP-0463**

## **DIRIS (*Lantana camara*) as Insecticide**

Shyne Pulhin, Department of Education

### **Abstract**

#### **INTRODUCTION**

This study focused on the insecticidal property of diris (*Lantana Camara*). This insecticide is not hazardous into our health because its contents are non-chemical. It is found eco-friendly and economical compared to commercial insecticides. Diris leaves have triterpenoids (lantadenes (lantadene A, B, C, D and icterogenin.) which is toxic to insects like mosquitos. Diris leaves have essential oils with major constituents of caryophyllene with 16.37%, eucalyptol 10.75%,  $\alpha$ -humulene 8.22%, germacrene 7.41%, lantanol 0.22. This essential oil isolated from leaves was for insecticidal activity against mosquitoes. The researcher got interested to conduct study on the properties of diris because Sta. Mesa Elementary School, Sta. Mesa, Mabini, Batangas, was situated along a 10-feet creek and surrounded by tall bamboo trees were insects most likely to breed and hide especially the mosquitos.

#### **METHODS**

The researcher used 1280 grams of diris leaves. The leaves were blanched, squeezed, and filtered in extracting juices. The extracted juices were placed in the centrifuge to prolong its shelf life. The test was conducted to 5ants, 5 mosquitos and 5 cockroaches in two trials with a different number of spray applied during the first and second trials and observed for 5 minutes each trial.

#### **RESULTS**

The study revealed that the juice from diris leaves can be used as insecticide through spraying its juice directly to the insects. The numbers of sprays affect the effectiveness of diris as an insecticide. The diris insecticide was effective on mosquitos since after two trials with a different number of sprays applied mosquitos were not able to fly, feel dizzy then killed than in other tested insects.

#### **DISCUSSIONS**

Based on the results of the experiment, diris was effective on mosquitos founded on the comparison result done in the first and second trial with the same number of insects tested and length of observation. To combat the problem regarding the spread of disease caused by mosquito bites, the school personnel especially the teacher advisers should maintain cleanliness of the surroundings specifically their own classrooms. The rooms should be lighted well and free from any breeding grounds of mosquitos like flower vases with dirty water. School utility shall maintain the cleanliness of the area near the creek side and fogging system of the barangay shall be done twice a week during rainy months.

**KEYWORDS:** diris (*Latana Camara*), effectiveness, insecticide

**SUBMISSION ID: R04A-BATANP-0984**

## **Disaster Risk Reduction Management of Bulacnin Integrated National High School**

Bonavie Castilla, Department of Education

### **Abstract**

#### **INTRODUCTION**

Disaster preparedness and risk reduction management is a timely issue that requires immediate action, attention and consideration it is therefore important for people, communities, and institutions to enhance their capacity to respond and manage disaster scenarios and improve resilience to probable risks. Developing projects and activities for the institutions will help them improve their adaptive capacity to minimize risks and damages.

#### **METHODS**

The descriptive research design was used. Forty-five members of SDRRMG were used as respondents. Researcher made questionnaire was used as an instrument for data gathering. Weighted mean, composite mean and Pearson Chi-square test was the statistical tool used in the study.

#### **RESULTS**

The researcher found out that the respondents are frequently participating in DRRM-related activities in school as indicated on the obtained composite mean of 2.56. However, lack of early warning systems and limited space for emergency evacuation are the most common DRRM related problems encountered in Bulacnin Integrated National High School. Activities and practices related to financial and material management capabilities, preparedness capacities and response mechanisms were sometimes implemented with the generated composite means of 2.35, 2.27 and 1.65 respectively. It also revealed that there is no significant relationship between the status of DRRM and the problems encountered in implementing it in school. It also indicates that if the school will employ effective team organization and leadership, wise financial and material resource management and cautious preparedness practices there is a great chance for the school to minimize the problems encountered in implementing disaster-risk reduction management.

#### **DISCUSSIONS**

Natural and human-induced disasters can cause inevitable damage to properties, loss of lives and may affect livelihood activities if proper measures and right precautions will not be put into paramount consideration. Evidently, the root of these adverse effects is the unpreparedness of the affected individuals and communities in responding to it. Lack of knowledge on how to deal with and respond to it is one of the reasons why people from the affected areas experience such devastation. Schools show its substantial role to its clienteles, by teaching and developing the basic skills. It is rightful and just for the schools to be advocates in implementing a well-orchestrated, effective and efficient DRRM.

**KEYWORDS:** DRRM Bulacnin Integrated National High School

**SUBMISSION ID: R04A-LIPAC1-0251**

## **Disaster Risk Reduction Management Practices of Agoncillo Senior High School**

Emelita De Sagun, Irene Caringal, & Richee Balase, Department of Education

### **Abstract**

#### **INTRODUCTION**

Disaster is a serious disruption of the functioning of a community or a society involving widespread of human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope up in its own resources. It is neither a local nor a national problem. Indeed, it is a global problem. It is an issue where everyone should show concern and move towards attaining zero casualties during a specific calamity. Department of Education Order No. 21, s. 2015 initiate and spearhead the establishment of mechanism about disaster-risk reduction management among all public schools, which prepare, guarantee protection and increase resiliency in facing disaster. In this study, we prepared the Grade 12 STEM students in the implementation of DRRM practices in Agoncillo Senior High School.

#### **METHODS**

The research methodology used in this study is the quantitative method of research. Fourteen STEM students, nine male, and five female were chosen as respondents of the study. Both filled out questionnaires. Data collected were presented in the form of a table.

#### **RESULTS**

The study found out that different practices in DRRM are utilized to ensure the safety of the learners. It is reflected that respondents are now capacitated in the different DRRM practices, and they are now fully aware of how to deal with the disaster. It is also proven that the respondents are now ready to face any disaster through different DRRM best practices. List of DRRM best practices was crafted for the learners.

#### **DISCUSSIONS**

DRRM Best Practices were proven as an effective tool to acquire and gain knowledge and strategies in disaster risk reduction. The contribution of this study was to provide baseline data on how ready the Grade 12 STEM students are, in the implementation of DRRM practices and encourage more researches about disaster risk reduction.

**KEYWORDS:** awareness, disaster, capacitates, preparedness, risk reduction.

**SUBMISSION ID: R04A-BATANP-0110**

## **Eco Bag: Shoppers Acceptability in Tacurong City**

Regine Mae L. Yaniza

### **Abstract**

#### **INTRODUCTION**

From supermarkets, shops and up to fast food chain take- outs, they use plastics and paper bags for packaging. This has been a big problem in our community. Do we know that by just replacing it with eco bag help our planet? Many of us do not give them a second thought because we have been using it for a long time but we should. Eco bags are one of the main reasons why global warming is not that visible to us here because we are an agricultural centered city.

#### **METHODS**

The researchers used the descriptive type of research study. The locale of this study is only in Tacurong City area, particularly in Barangay Poblacion. The survey questionnaire was distributed among the different age groups, who are users of shopping bags and have knowledge about their usage around the city. After the retrieval of the questionnaire, the researchers tabulated and analyzed the data. The data gathered was organized with the help of the statistician tabulated and tailed the survey.

#### **RESULTS**

Eco bag minimizes plastic waste consumption and Eco bag can help save our mother earth through plastic wastes. Generally, Respondents' perception of the eco bag in Tacurong City interpreted as Strongly Agree. Respondents' perception of the eco bag in Tacurong City is extremely acceptable.

#### **DISCUSSIONS**

Based on the result of the study, the perception and the acceptability level of the eco bag in Tacurong City with the use of simple random sampling yield extremely accepted as its description. The researchers would like to recommend that for further studies incline in this topic there must be a specific description of what type of eco must be used by the shoppers.

**KEYWORDS:** eco bag, shoppers' acceptability

**SUBMISSION ID: R012-TACURO-0015**

## **Effect of Eleusine indica to Different Concentrations of Crude Oil Contaminated Soils**

Simon Vincent Tan

### **Abstract**

### **INTRODUCTION**

Contamination of existing and potential agricultural lands is a major problem associated with the processing and distribution of crude and refined petroleum products in many oil-producing countries (Ayatamuno et al.,2006). The problems of pollution have led to the exploration of many remedial approaches that will clean up the polluted soils. However, pollution control strategies have often aggravated the problem rather than eliminate it. This research study aimed to assess the Effect of Paragis(*Eleusine indica*) in different concentrations of crude oil in the soil. This research intended to determine the significant relationship between the soil moisture content and the amount of crude-oil in soil. The study also included soil organic matter content and amount of crude-oil in the soil; and plant longevity and amount of crude-oil in the soil to remediate crude oil in an affordable and eco- friendly way.

### **METHODS**

Three (3) samples were formulated with 1/2, 1/3, and 1/6 ratio of crude oil to the soil, that started from a five(5) day soil preparation to the planting of *E.indica* grass. In a span of 30 days of observation, each sample was put to soil analysis in terms of Soil moisture content, Soil organic matter content and plant longevity. To test the moisture content of each soil sample, the plants were removed, and the soils were heated on a pan at 105 degrees Celsius until dry and weighed. For the Organic Matter test, the pan-dried soils were burned using a casserole in 150 degrees Celsius and weighed. Lastly, to assess the plant longevity, the researcher simply counted the number of days the grass was alive within 30 days.

### **RESULTS**

Based on all the three(3) tests performed, results showed that 1/3 ratio of crude oil to soil or 50g of crude oil on 150 g of soil showed the most favorable results in terms of soil moisture content, soil organic matter content and plant longevity. Based on the data gathered, it was found out that there is a significant linear relationship between each assessment (soil moisture content, soil organic matter content and plant longevity) and amount of crude oil. In addition, on the 28th day of observation of the 1/3 ratio sample, an unidentified plant life sprouted on its soil surfaces and is the only sample to survive the period of observation. Meanwhile, 1/2 and 1/6 ratio samples died in the 18th and 8th day respectively.

### **DISCUSSIONS**

The findings of this study indicate that growth of *E. indica* in crude oil contaminated soils affects the physical-chemistry of the soil enhancing the degradation of crude oil.

**KEYWORDS:** Paragis, crude oil, soil agriculture, remediate, economical, environment-friendly

**SUBMISSION ID: R04A-CALAMB-0090**

## **Effectiveness of Coesbrovecin Homemade Bio-Foliar Fertilizer**

Helen May Barsubia

(Adviser: Liezlda Reyes & Geraldine P. Magluyan)

### **Abstract**

#### **INTRODUCTION**

According to Natasha Gilani, "synthetic fertilizers have long-term negative effects." With this situation, the used of organic fertilizer has been recommended. Ajmal and. et.al (2018) confirmed that, "Bio-fertilizer as an Alternative for Chemical Fertilizers" , plays a vital role in the survival of nations, therefore maintaining its quantity and quality is essential for feeding the population and economic exports. This study was conducted to development a "COESBROVECIN HOMEMADE BIO-FOLIAR FERTILIZER", to provide sustainable fertilizers from renewable energy waste. An alternative environmentally friendly soil conditioner and crop fertilizer that could reduce costs to farmers and potentially help with the economic price rise of food and commercial production.

#### **METHODS**

Experimental Research Design was used in the study. The COESBROVECIN homemade bio-foliar fertilizer was development. To test the effectiveness of the homemade fertilizer, the researchers prepared three set-ups labeled as alternative fertilizer, commercial fertilizer and without fertilizer. The researchers planted a pechay and prepared twenty (20) sample in each set-up. The researchers monitored the height, weight, and number of leaves of the pechay.

#### **RESULTS**

The COESBROVECIN homemade bio-foliar fertilizer, chemical fertilizer, and non-treated specimens were compared in terms of height, weight and number of leaves. The COESBROVECIN bio-foliar fertilizer had the highest means in height, weight and number of leaves with 4.4, 14.87 and 6.1 respectively. This is followed by the means of the height, weight, and number of leaves with 4.36, 14.61 and 5.85 respectively. The non-treated specimens had the lowest means in height, weight and number of leaves with 4.17, 13.88 and 5.20 respectively.

#### **DISCUSSIONS**

The COESBROVECIN homemade bio-foliar fertilizer made from ground coffee, eggshells, rotten vegetable extract, and wood cinder is highly recommendable in terms of effectivity, practically and performance against the inorganic foliar fertilizer.

**KEYWORDS:** biodegradable, organic fertilizer, renewable waste

**SUBMISSION ID: R012-COTABP-0010**

**Effectiveness of Project WERPA (Wholly Embracing Repetition Method Produces Commendable Action in Teaching Science) in Improving the Science Vocabulary of Grade IV Apitong Pupils of Paaralang Elementarya**

Jenifer Cuartero, Department of Education

**Abstract**

**INTRODUCTION**

The Department of Education is making the effort to improve the quality of Science Education. Researches on this field are constantly increasing to address the different issues and problems encountered in achieving the desired learning outcomes of the learners. In line with this thrust, the aim of this action research is to determine the effectiveness of Project WERPA (Wholly Embracing Repetition Method Produces Commendable Action in Teaching Science) in improving the vocabulary of Grade IV-Apitong of Paaralang Elementarya ng Talahiban 1.0.

**METHODS**

The study started with an identification of the existing problems encountered in teaching Science specifically in Grade-IV Apitong pupils, and then an action plan was developed and implemented. To evaluate the effectiveness of the implementation, quantitative (questionnaire) data were collected and analyzed.

**RESULTS**

Project WERPA (Wholly Embracing Repetition Method Produces Commendable Action in Teaching Science) was perceived as effective in improving the Science vocabulary of Grade IV Apitong based on the progress of their periodical test result in three consecutive grading period.

**DISCUSSIONS**

The results demonstrate that success can be enhanced by accurate and timely feedback. Findings of this study should be made known to Science teachers to provide them ideas on what to emphasize in the subject. A similar study may be conducted in another grade level along this line.

KEYWORDS: WERPA

**SUBMISSION ID: R04A-BATANP-0747**



## **Effectiveness of Starfruit (*Averrhoa carambola*) as an Alternative Organic Bleach**

Bea Alessandra A. Zapanta, Febie Jeinnlyn T. Ila, Lourdes Jeanne Gonzales,  
& Ynah Marielle Sj. Martinez, Tomas Claudio Colleges

### **Abstract**

#### **INTRODUCTION**

Bleaching agents are materials that lighten or whiten a substrate through a chemical reaction. They are often used for cleaning and disinfection; bleaches kill or control most types of viruses, bacteria, molds, mildews, and algae. Most common bleaches contain substances like sodium hypochlorite, calcium hypochlorite, hydrogen peroxide and sodium percarbonate (Helmenstine, 2018). However, there are some bleaching agents that use oxalic acid - a strong organic acid that can remove stains, rusts, and can even be used as a mordant. Oxalic acid was originally found in the extract from the wood sorrel plant, but it can also be found in plants such as rhubarb, spinach, peanuts, strawberries, and in star fruits or carambolas. The researchers are conducting this study with the purpose of testing the effectiveness of star fruit (*Averrhoa carambola*) as an alternative organic bleach. This study also aims to present a product that is not costly and harmful to the health of the users.

#### **METHODS**

In order to ensure the objectivity of the results of the present study, quantitative research was followed. The experimental research design was used since it primarily establishes causal relationships between variables in a single study. Using this design, the researchers would be able to test a theory under a manipulated or controlled environment and ultimately support or reject it. In this experimental research, the 20 senior high school students from Tomas Claudio Colleges were randomly selected so that the researchers would be able to make generalizations and draw an accurate representation of a larger group.

#### **RESULTS**

The results indicate that the developed alternative organic bleach using star fruit is much effective in terms of usability as evaluated by the respondents. The results indicate that the developed alternative organic bleach using starfruit is much effective in terms of practicability as evaluated by the respondents.

#### **DISCUSSIONS**

The researchers concluded that there is no significant difference on the effectiveness of star fruit (*Averrhoa carambola*) as an alternative organic bleach with respect to the usability and practicability in terms of the respondents' age, sex, and monthly family income, making the null hypothesis accepted.

**KEYWORDS:** Starfruit (*Averrhoa Carambola*), the profile of the respondents, practicability, usability, bleach

**SUBMISSION ID: R04A-REGOFF-0006/ R04A-REGOFF-0007/ R04A-RIZALP-0492/ R04A-RIZALP-0495**

## **Effectiveness of Using Video Clips in Enhancing the Performance of Grade Six Pupils in Science**

Thelma Lemueco, Department of Education

### **Abstract**

#### **INTRODUCTION**

To survive in a new, globally competitive world, today's children need creativity, problem-solving abilities, a passion for learning, a dedicated work ethic and lifelong learning opportunities. Students can develop these abilities through instruction based on best practice teaching strategies. It was observed that some pupils are inattentive during science class. Teachers and even students rely on or use educative videos to learn, compare and understand concepts.

#### **METHODS**

The descriptive qualitative research was employed in the study wherein the respondents were the 28 Grade Six pupils in Pansipit Elementary School. The study is purely descriptive in nature that used survey questionnaire as the research tool in the data gathering procedure. The researcher collected the questionnaires after accomplishing them. The data were quantified using the Percentage Method.

#### **RESULTS**

The study found out that some facilities necessary in using video clips in teaching Science are not available. There is also a problem with the poor internet accessibility in the school. The results revealed that using video clips in teaching Science is very effective that is why an action plan was proposed to address the problems found from the study. Unavailability of some facilities like internet and disc players can be solved by making a request to proper authorities. Upgrading internet accessibility in the school can be done by tapping the authorities. Using video clips will enhance not only pupils' academic performance but the teaching performance of the Science teachers as well.

#### **DISCUSSIONS**

The results revealed that there is a need for every school to provide the necessary materials in using video clips and upgrade the internet accessibility to make video clip presentation possible. Moreover, Science teachers must attend training related to ICT for successful implementation is made possible. Teachers, who use instructional video report that their students retain more information, understand concepts more rapidly and are more enthusiastic about what they are learning. With video as one component in a thoughtful lesson plan, students often make new connections between curriculum topics and discover links between these topics and the world outside the classroom.

**KEYWORDS:** globally competitive, educative videos, internet accessibility

**SUBMISSION ID: R04A-BATANP-1041**

## **Effects of 7E Learning Cycle on the Learners' Critical and Analytical Thinking Skills in Earth and Life Science**

Rhea Masalunga, Laiya National High School

### **Abstract**

#### **INTRODUCTION**

National and international assessments of recent years have cast uncertainties in terms of the quality of Philippine Education. It can be stated that one of the many factors that may affect the performance of learners is the method of teaching. In teaching, it is necessary that the 21st-century skills be incorporated in each lesson. Lessons must require learners to develop higher order thinking skills such as critical and analytical thinking skills. The 7E Learning Cycle is a teaching method that highlights the previously mentioned 21st-century skills.

#### **METHODS**

In this study, the effects of 7E learning cycle on learners' critical and analytical thinking skills in Earth and Life Science was ascertained. The participants were divided into four groups comprising 122 Grade 12 learners. The analysis of variance revealed that the learning of the four groups was homogenous prior to the intervention. Following the rigors of the Solomon Four-Group design of experimental research, two groups were randomly assigned as experimental groups and the other two as control groups. The experimental groups were taught using the daily lesson log in the 7E learning cycle format.

#### **RESULTS**

The analysis of variance of post-test scores revealed that there was a significant difference among the post-test scores of the four groups. The experimental groups got higher post-test scores compared to the control groups. More so, the pretest and post-test scores of Experimental Group 1 and Control Group 1 showed that Experimental Group 1 had a higher gain score. Henceforth, it could be concluded that 7E learning cycle is effective in developing critical and analytical thinking skills of learners in Earth and Life Science.

#### **DISCUSSIONS**

While proven effective, the study has rooms for improvement. The 7E learning cycle was employed in a two-hour class of Earth and Life Science for Grade 12 TVL learners. More so, the study was limited to four topics in the course. On the other hand, the daily lesson log used was anchored on several theories such as constructivism and Bloom's taxonomy of learning domains. In addition, three Master Teachers validated the daily lesson log.

**KEYWORDS:** critical thinking skill, analytical thinking skill, Earth and Life Science, the 7E learning cycle

**SUBMISSION ID: R04A-BATANP-0059**

**Effects of *Annona muricata* (Powdered Guyabano Leaves and its Juice Extract) on Soil Ph as an Alternative To Synthetic Fertilizer**

Jennybee A. De Villa  
(Adviser: Arvin Mark Dimayuga)

**Abstract**

**INTRODUCTION**

This research study aims to determine the Effects of *Annona Muricata* (Powdered Guyabano Leaves and its Juice Extract) on soil pH as an alternative to synthetic fertilizer. The study focuses on the factors involved in achieving the potential growth of the plant

**METHODS**

The researchers prepared four treatments (1) synthetic fertilizers (2) powdered guyabano leaves (3) juices extract of guyabano (4) guyabano leaves and juice extract to gathered reliable findings. The methods of research used are experimental and observational within 56 days. Among the four treatments, treatment 4 (powdered guyabano leaves and juice extract) results to a better soil pH level since there was no significant change recorded before and after applying the fertilizer on a certain plant. The application of fertilizers helps the plant to grow faster and taller. The treatment with the highest recorded plant height after weeks of observation was treatment 4 (powdered guyabano leaves and juice extract) and the lowest was treatment 3 (juice extract). In terms of okra plant size, the best fertilizer was the combination of powdered guyabano leaves and juice extract since this is the treatment with the longest okra after 56 days.

**RESULTS**

After 56 days, the okra plant with the treatment four (guyabano leaves and juice extract) has the size of 15.24 cm which is the largest one. In terms of plants height, the okra plant grows up to 45 inches while the soil ph level is 7.11.

**DISCUSSIONS**

Among the four treatments, treatment 4 (powdered guyabano leaves and its juice extract) results to a better soil pH level since there was no significant change recorded before and after applying the fertilizer on a certain plant. The application of fertilizers helps the plant to grow faster and taller. It is also recommended to conduct further investigations regarding the benefits of applying fertilizer on a certain plant for it to be considered as a substantial product to not only farmers but also all the people living in this world.

**KEYWORDS:** fertilizer, synthetic, juice extract

**SUBMISSION ID: R04A-BATANP-0422**

## **Effects of Different Concentration of Glucose in the Development of Pollen Tube Growth of Acapulco (*Cassia lata*)**

Kate Vizcarra, Lemmuel Badanoy, & Noel Francis Agpoon  
(Adviser: Esperanza Estrada)

### **Abstract**

### **INTRODUCTION**

The study was based on the economic importance of Acapulco (*Cassia lata*) to the market. The researchers studied how the pollen of Acapulco quickly germinates using different media. The molecular and physiological processes of sugar uptake and metabolism during pollen tube growth and plant fertilization was investigated. In-vitro germination assays showed that Acapulco pollen can germinate and grow not only in medium containing sucrose (Suc) as a carbon source, but also in medium containing the monosaccharides glucose (Glc). The concentrations used in the study were 0.25, 0.5, 0.75 and 1.0.

### **METHODS**

Flowers with several mature anthers and has shedding pollen was collected. The point of a mounted needle was gently rubbed over the anthers for the pollen to fall on to the medium on each slide. Then a filter paper was placed in four petri dishes it was moistened with water. Afterward a drop of the medium was placed in the center of a slide. The pollen was transferred to the slide. The step was repeated to have two slides with pollen for each type of flower. The time when the pollen was added to the medium placed in the petri dishes was noted. A microscope with x100 magnification was used to observe the slides over the next 15 minutes for signs of pollen germination. When the pollen tubes have started to grow the length of four or five tubes were measured at three-minute intervals for about 1 hour. Graphs were drawn to show the growth of pollen tubes with time, compared with a graph of group results for each solution.

### **RESULTS**

Substituting sucrose in the germination medium with monosaccharide glucose showed that: a.) after 1 hour of incubation differences were observed with regards to the quality and the growth rates of pollen in the four different media; and, b.) The following 2 hours, tube growth in glucose continued and spicules developed. This experiment showed that an external carbon source is essential in maintaining pollen tube growth. However, this assay could not discriminate whether monosaccharide, disaccharides, or both were actually imported into growing Acapulco pollen tubes.

### **DISCUSSIONS**

Pollen tubes require high and rapid sugar uptake to support their growth. The pollen tubes were actually can easily be seen in the sucrose concentration, on the other hand, it can also be observed in glucose concentration. Series of the test was done after 3 hours of observation and afterward the pollen tube in Acapulco changes morphologically in 0.75 glucose concentration.

**KEYWORDS:** Glucose, Germination, Pollen

**SUBMISSION ID:** R04A-CAVITP-1261

**Effects of Teachers Academic Rank and the Academic Performance of  
Grade Vi Pupils in Science; A Basis for Teachers Academic Rank  
Enhancement Model**

John Peter Salivio

**Abstract**

**INTRODUCTION**

Teachers could improve performance by highlighting an individual's local rank. If an individual is in a high performing group, he could serve as a model or inspiration to others to be better in the conduct of their duties. Teacher's current rank implies the sum total of all his or her efforts to improve his/her professional standing which was attained through attendance to various seminars, enrolling in a post-graduate program, conducting research, getting a high evaluation rating from students and principal. The higher the rank, the higher is the qualification of the teachers.

**METHODS**

This study made use of the descriptive method of research as it was aimed at analyzing the effect of teachers' academic rank to the academic performance of Grade VI pupils in Science of selected public elementary schools in Calatagan Batangas. This research study used the descriptive method. Descriptive research according to James (2010) is a type of research that is mainly concerned in describing the nature and the degree in detail of the present situation. The aim of the descriptive method is to obtain an accurate profile of the individuals, events or situations.

**RESULTS**

The teacher's respondents in Calatagan, Batangas has academic rank of eight (8) teacher 2 or 36.36%, five (5) teacher 1 or 22.73%, four (4) master teacher1 or 18.18%, three (3) teacher 3 or 13.64% and two (2) master teacher 2 or 9/09%. The academic performance of the selected schools in Calatagan, Batangas obtained 82.34, which signify as average level. The teachers rank has very great effective with regards to the academic performance of the students in terms of the three-dimensional learning skills such as cognitive, affective and psychomotor with a mean value of 4.65, 4.68 and 4.67 respectively. Teachers' academic rank is effective in assessing the academic performance of Grade VI pupils according to cognitive, affective and psychomotor through the evident findings that revealed as very great effective.

**DISCUSSIONS**

It projected that there is no significant impact on the teachers' academic rank and academic performances of the Grade VI pupils in terms of cognitive, affective and psychomotor dimensional learning skills. The conceptualized Teachers' Academic Rank Enhancement Model (TAREM) is recommended in order to improve the academic performance of Grade VI pupils of selected schools in Calatagan, Batangas. It should also be intended to qualify, align and meet the Teachers Academic Rank with the support of Teachers Academic Dimensions.

**KEYWORDS:** Academic Rank, Academic Performance, Enhancement Model, Basis

**SUBMISSION ID: R04A-BATANP-0095**

## **Efficacy of Gotu Kola (*Centella asiatica*) Leaves as an Alternative Ointment**

Mikaelah Lye Jamora, Trece Martires City Senior High School

### **Abstract**

#### **INTRODUCTION**

People nowadays are prone to having injuries. They can easily get it just by being clumsy, doing work, and performing daily tasks. To accelerate the healing process of wounds, medical professionals and common individuals use different kinds of medicine in the form of ointments, cream, gel, anti-infection, and anti-bacterial solutions. According to Cohen (2017), gotu kola (*Centella asiatica*) has many benefits especially in the medical field. It possesses different uses, particularly in healing wounds, yet there are no scientific researches that provide evidence that gotu kola obtains healing properties. Thus, this study aimed to fill in the gap by producing an alternative ointment from gotu kola that is an effective wound remedy.

#### **METHODS**

This study used a quantitative type of research; specifically, an experimental research design which involved the manipulation of the gotu kola ointment by assigning different concentrations of gotu kola such as 25%, 50%, and 75% of gotu kola content. Controlled treatment is the base ointment without gotu kola extract. These different concentrations of ointment were used to treat wounds in the laboratory mouse, while three parameters such as the wound size, wound edges, and epithelialization was assessed using the BWAT (Bates - Jensen Wound Assessment Tool) in this study.

#### **RESULTS**

In assessing the most effective amount of gotu kola in an ointment as wound remedy in terms of size, edges, and epithelialization, T3, which is the 75% gotu kola concentration, has a weighted mean of 1.67 which was rated as exceptional. Based on the 5-point Likert scale, the ointment with the lowest weighted mean has the most effective concentration of gotu kola. Thus, the gotu kola ointment with the most effective concentration is the ointment with 75% gotu kola extract (T3).

Testing for the difference of the efficacy of different concentrations of gotu kola ointment in terms of wound size, edges, and epithelialization using the one-way ANOVA test, a P-value of 0.0000357 was obtained which means that there is a significant difference on the efficacy of different concentrations of gotu kola ointment.

#### **DISCUSSIONS**

Hence, this study found out that the most effective gotu kola ointment has 75% gotu kola content compared to the other treatments. Therefore, the researchers concluded that it is exceptional which means it significantly and consistently exceeds the expected performance level. Thus, this study proved that gotu kola (*Centella asiatica*) leaves are effective in wound healing.

**KEYWORDS:** efficacy, gotu kola leaves, alternative ointment

**SUBMISSION ID: R04A-CAVTP-0100**

## **Efficiency of *Curcuma longa* (Turmeric) for Headache and Nasal Congestion**

Mayvel Bendo & Reyn Joy Mojica, Kaytitinga National High School

### **Abstract**

#### **INTRODUCTION**

This research topic focuses on producing homemade vapor rub using turmeric ginger as its main ingredient. *Curcuma longa* or turmeric is a kind of ginger that contains anti-inflammatory and anti-oxidant properties. This is known to relieve headache and nasal congestion.

#### **METHODS**

The product contains aromatic ingredients such as peppermint leaves, rosemary leaves, cinnamon powder and essence eucalyptus which also has anti-inflammatory properties. The researcher also used mineral oil as its cream base for solidifying the product. After the creation of the product, the researcher selected the respondents of the study using purposive sampling method. The product was tested in a means of making the respondents apply it to their skin. After the application of the ginger vapor rub, the respondents were asked to observe the healing effect of the product. The researcher distributed a checklist for the data gathering. After the data collection, analysis and interpretation were done.

#### **RESULTS**

In the summary findings, it was confirmed that the ginger vapor rub is essential in curing some physical ailments such as headache and nasal congestion.

#### **DISCUSSIONS**

It was also demonstrated that the ginger vapor rub can relieve headache and nasal congestion. Likewise, the ginger vapor rub was proven to have a soothing odor. Moreover, the result has also confirmed that the product is not sticky when applied and does not cause skin irritation.

**KEYWORDS:** vapor rub, nasal congestion, headache

**SUBMISSION ID: R04A-CAVITP-1348**



## **Eggshell Pash Cleanser**

Cynthia B. Rosal, Emily Gonzales, & Mariel L. Anahaw

### **Abstract**

#### **INTRODUCTION**

The aims of this project are to determine which brand of cleanser is the best for cleaning the kitchen bowl, kitchen tools, and utensils and to know the effect of the eggshell pash cleanser.

This homemade cleanser can be used for cleaning the kitchen bowl, kitchen tools, and utensils. This product will save excessive use of water for washing and cleaning. This will help a person to be productive, self-reliant. The purpose of this study is to answer the problem. What homemade cleanser in place of commercialized cleanser to save money. It aimed to answer the following questions:

How can eggshell, palay, and ashes be prepared?

What is the effect of eggshell pash cleanser after application prepared eggshells pash cleanser to know the effect of eggshell pash on cleaning kitchen bowl, kitchen tool, and utensil?

More than the world population depends on the homemade cleanser because the prices of commercialized cleanser are high. Besides their availability is not always assured.

What if the poor people cannot afford to buy The answer is obvious, We need to practical remedies for the common problem. Homemade cleanser is the simple and cheap but effective way for cleaning kitchen bowl, kitchen tools, and utensils and save excessive use of water.

This research was conducted at Hukay Elementary School. It is limited to the effect of Eggshell Pash Cleanser for cleaning kitchen tools and utensils.

#### **METHODS**

This chapter represents the researcher design of the study. The participants being studied a description of the materials to be used. Methods and procedures to be used in the data collection. Collect eggshell, palay husk, and ashes. Remove the thin white layer beneath the eggshell Wash and dry the eggshell. Use mortar and pestle to grind the eggshell until they are fine Palay Husk. Fry the palay husk in the pan for easy grinding Grind them with mortar and pestle. Strain the grounded palay Ashes strain and mix all the ingredients.

#### **RESULTS**

The prepared homemade cleanser was found effective in cleaning kitchen tools, utensils also need for washing dishes, the plates glasses fork, and spoon became clean and shiny.

#### **DISCUSSIONS**

Since homemade cleanser was tested in cleaning and washing kitchen tools and dishes, used in place of commercial to save money

**SUBMISSION ID: R04A-CAVITP-1475/ R04A-CAVITP-1483/ R04A-CAVITP-1484**

## **Enhancing Durability of Banana Peel Bio-Plastic Using Acacia (*Samanea saman*) Seed Extract**

Raine Cassandra T. Mesina, Raviel Ernest L. Vida, & Rheign Nhycole C.  
Pamanian, Emiliano Tria Tirona Memorial National High School  
(Adviser: Eric Laurence Gandia)

### **Abstract**

#### **INTRODUCTION**

Plastic was one of the most picked up garbage in the whole world. It was assessed that over 300 million tons of plastic were produced around the world each year (Walter, 2014). Bio-plastic was the best product to lessen the pollution but not the best solution. The only hindrance of this bio-plastic was the lack of durability so that the researchers find a gap in how the bio-plastic increase its durability. The researcher discovered that the acacia seed extract can be an enhancer of bio-plastic. This study aimed to introduce the potential of acacia seed extract to improve the toughness of the present banana peel bio-plastic.

#### **METHODS**

Centrifugation method was used to extract the protein of the acacia seed. For, the production of banana peel bio-plastic the researchers boiled, strained and decanted the banana peel and mixed it with glycerine and acacia seed extract, molded on a foil and then dried for two days. The durability of the plastics was tested using an improvised tensile strength test by adding weights gradually until it reaches its breaking point. Also, the study made use of a four-point Likert scale for the appearance and texture of the plastic. In accordance with the objectives, this utilized weighted mean and t-test of independent samples.

#### **RESULTS**

Each sample underwent three trials of tensile strength test. Banana peel bio-plastic with acacia seed extract takes an average of 2.2867 N to be completely torn down while the banana plastic without extract has an average of 1.6333 N. Using t-test independent, the researchers obtained a t-value of 2.8328 against a critical value of 2.776 which falls under the rejection region which means that there is a significant difference between the two plastics.

#### **DISCUSSIONS**

Since banana peel bio-plastic with acacia seed extract exhibited higher durability than the other group, it was concluded that acacia seed extract was able to enhance the durability of the banana peel bio-plastic. As the results indicated, the researchers settled that banana peel bio-plastic with acacia seed extract can be a good replacer to the oil-based polymers and can be further enriched to be a usable bio plastic product.

**KEYWORDS:** acacia, banana peel bio-plastic, durability

**SUBMISSION ID:** R04A-CAVITP-0161

## **Enhancing Science Teaching and Learning through Harmonizing Learning Resources and Contents in Science in the K To 12 Curriculum in the Philippines**

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Education RXII-QAD-M&E, Testing & Assessment, Quality Assurance  
Division - Monitoring & Evaluation

### **Abstract**

#### **INTRODUCTION**

The study focused on the gaps generated in the implementation of the K to 12 Curriculum under RA 10533 in the Philippines whereby low academic performance in Science, instructional support, large class size (50-90/class), lack of appropriate learning materials/ resources, lack of training and the low service quality of Science Technology and Engineering (STE) program in terms of curriculum and instructional support were found.

#### **METHODS**

The data obtained in the National Achievement Test (NAT- SY 2016-2017) were limited to two Division of City Schools in the Philippines namely Cabuyao (Region IV-A) and Koronadal City (Region XII). The results were analyzed using correlation coefficient for 21st Century Skills obtained by 263, 114 (Grade 10) and 8745 (Grade 6) learners, in Region IV-A and XII, and in the Division of Cabuyao City and Koronadal City, respectively. Profiling of teachers and gaps in spiral progression were sought through Key Informant Interview (KII). A strategic management plan is proposed to enhance the Science curriculum.

#### **RESULTS**

The major gaps revealed were by non-Science major teachers teaching all areas in Science curriculum. In Cabuyao City, 87.30% elementary and 14.29% are non-Science majors. The interview resulted to the same problems on budget allocation for Science laboratory, equipment, textbooks, learning materials, large class size, shifting of classes, congested learning competencies of the curriculum content, low retention of students in academic achievement, non-specialized skills, bulky clerical work, and class disturbances (typhoons, holidays, overlapping activities and ancillary services) that contributed to this low performance. This is supported by the study in Region XII whereby service quality of laboratory support, library facilities and services, ICT integration and school plant and facilities were rated low. This is reflected in the National Achievement Test results (SY 2016-2017) whereby 21st Century Skills obtained MPS way below the target level.

#### **DISCUSSIONS**

A strong positive correlation ( $r = 0.99$ ) by region and division was obtained in Grade 6. The same strong positive correlation ( $r = 0.97$  by region, and by division ( $r = 0.99$ ) was obtained for Problem Solving (mean=34.35), Information Literacy (mean=36.28), and Critical Thinking Skills (mean=33.47) for Region 4A and XII in Grade 10. A strategic management plan was prepared to enhance Science teaching-learning curriculum by harmonizing learning resources and contents in Science.

**KEYWORDS:** Harmonizing curriculum; Service Quality; National Achievement Test; Strategic Management Plan

**SUBMISSION ID: R04A-CABUYA-0031**

## **Enhancing the Performance of Junior High Students in Dr. Arsenio C. Nicolas National High School Using Video Presentation**

Alvin Ansay, Dr. Arsenio C. Nicolas National High School

### **Abstract**

#### **INTRODUCTION**

The imperative level of utilizing video and multimedia have various ways. The utilization of videos in the classroom therefore presents the acceptability of technology in the classroom which the 21st century teaching and learning processes is encouraging to set a new avenue for learning to promote effective teaching in science. The researcher believed that taking necessary action in this alarming condition should be properly addressed. Based on the prevailing condition the researcher decided to craft an intervention program to enhance the teaching-learning process using videos in teaching science concept.

#### **METHODS**

This paper used experimental methods of research to evaluate and determine the significant difference between the pre-test and post-test of the MPS of Grade 8 students of Dr. Arsenio C. Nicolas National High School in teaching genetics. The total number of the students used in the research were 25 Grade 8 in which during the second quarter of the school year the MPS of the student were noticeably low with 56.12 in science. After the administration of the tests, the means were computed. The significant difference was determined through the t-test.

#### **RESULTS**

The performance of Grade 8 students of Dr. Arsenio C. Nicolas National High School in Science was poor but after the utilization of video in teaching the topic the performance increased remarkably. The obtained mean of pre-test and post the average mean of the pre-test is 8.68 while the post-test obtained 14.92. The difference of 10.24 from the pre-test and post-test was remarkably increased. There was a significant difference between the means pre-test and post-test of Grade 8 students of Dr. Arsenio C. Nicolas National High School before and after using the video in teaching genetics. The computed t-value of -9.92 and critical t-value of 1.67 arrived at the decision to reject the null hypothesis. Students showed interest and paid attention when the teacher presented the video. It implied that students were excited and motivated.

#### **DISCUSSIONS**

Because of the advancement in technology like social media, most of the learners nowadays are visual learners. Appropriate videos in science should be carefully selected and should be suitable for the students and the topic. The teacher should have access to [lrmds.ed.gov](http://lrmds.ed.gov) and utilize the learning portal because this is the rich source of videos that will fit your lesson.

**KEYWORDS:** Effectiveness, Video presentation, Increased performance in Science

**SUBMISSION ID: R04A-QUEZON-0077**

## **Evaluation of Makeshift Water Filter and Distilling Device for Water Purification**

Auzeilyne Bautista

### **Abstract**

### **INTRODUCTION**

Nowadays, water, especially in the Philippines, is more likely to be polluted making it harmful for the individuals. By this, Ambulkar, Lanfair and Schroth (2018) stated that methods of purifying water will remove biological contaminants, organic and inorganic materials in water; including the process of distillation and deionization to produce potable water. Thus, each method for water purification was addressed individually and it lacks studies that focus on the combination of any two methods. Hence, this study will fill in the gap by evaluating the makeshift water filter and distilling device for water purification.

### **METHODS**

This study developed a makeshift water filter and distilling device in order to evaluate its effectiveness for producing purified water. The water samples used were gathered from Brgy. Kaytapos, Indang, Cavite then brought to Cavite Water and Wastewater Testing Laboratory (CWWTL) for the physical, chemical and microbiological analysis in terms of turbidity, pH level and Total Coliform count before and after it underwent the device. The results provided by the CWWTL for each property were used for the computation whether the null hypothesis was accepted or rejected using the paired T-test for statistical treatment.

### **RESULTS**

Results from the CWWTL showed that there was a significant change on the physical, chemical, and microbiological properties of the river water before and after it was purified by the device in terms of turbidity, pH level, and Total Coliform count. First, the turbidity of the river water dropped from 8.1 NTU to 7.4 NTU after went through the device. Next, the pH level also decreased from 8.1 to 7.4 too. Finally, the Total Coliform count similarly diminished from 170 MPN to less than 1 MPN or equals to zero. Computing for the significant difference between the properties of the rainwater before and after it undergoes the device in terms of turbidity, pH level, and Total Coliform count, T-test was used. It obtained a T-value of 0.82 which implied that there is a significant difference between the properties of the river water before and after it undergoes the device.

### **DISCUSSIONS**

Specified by the computed results, the makeshift water filter and distilling device was proven to be effective to be used for water purification. Therefore, the researchers concluded that the device developed functioned properly on how it was meant to be. Consequently, this study achieved its target which is to provide clean and safe water for the usage of each individual.

**KEYWORDS:** evaluation, makeshift water filter, distilling device, water purification

**SUBMISSION ID: R04A-CAVITP-0497**

**Extent of Utilization of Laboratory Apparatuses in Teaching Science in  
Public Elementary Schools, District of Pililla, Division of Rizal**

Joyce Ann Cauan

**Abstract**

**INTRODUCTION**

Education is the foremost concern of a nation. It is through education, people become equipped with the essential knowledge, usable skills, rightful attitudes, and moral values. Education plays a huge and vital role in developing its citizenry. Without education, a nation will not grow, improve and develop as a country. It will not meet the demands of the ever continuing changes the world is offering. Quality access to education can be enjoyed by schools if modern trends of instruction that cater quality learning will be given emphasis, thus, it is the utmost concern to fully give the best possible learning experiences to school children. Obviously, Science and Technology spearhead the development and modernization of a country.

**METHODS**

The descriptive survey research design was applied to utilize a researcher-made questionnaire checklist as a tool in gathering the needed data on the adequacy of laboratory apparatuses and the extent of utilization with respect to preparation, safety and protection, and proper storage.

**RESULTS**

The study revealed that most of the teachers of Science in public elementary schools are females and with ages 31 years old and above. Most of them are pursuing graduate education and have been in the service for more than 10 years. Laboratory apparatuses in the teaching of Science in public elementary schools are moderately adequate. Utilization of laboratory apparatuses is done considering the necessary preparation, safety and protection and proper storage. In terms of age and length of service, the null hypothesis is rejected while in terms of sex and educational attainment, the null hypothesis is accepted.

**DISCUSSIONS**

This study aimed to determine the extent of utilization of laboratory apparatuses in teaching Science in nine public elementary schools in Pililla, Rizal during the School Year 2015-2016. These schools include Bugarin Elementary School, Halayhayin Elementary School, Hulo Elementary Schools, Malaya Elementary School, Matagbak Elementary school, Niogan Elementary School, Pililla Elementary School, Quisao Elementary School, and Virgilio B. Melendres Memorial Elementary School. The respondents of the study were 44 Science Teachers in public elementary schools. They were described in terms of age, sex, educational attainment, and length of service Purposive sampling technique was utilized in the selection of respondents.

**KEYWORDS:** Utilization, Laboratory Apparatuses, Teaching Science

**SUBMISSION ID: R04A-RIZALP-0048**

## **Extraction and Properties of Cellulose Powder from Dalandan Albedo**

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(Adviser: Bella Procesa Maniago)

### **Abstract**

#### **INTRODUCTION**

This study explored the use of the albedo of *Citrus aurantium*, locally known as Dalandan as an alternative eco-friendly source for cellulose. The research is inspired by a study in Sicily, Italy wherein orange fiber was invented as a source of good quality fabric. The additional idea also came from a study on the extraction of pomelo fiber in Malaysia. In the Philippines, there is still no study conducted about Dalandan albedo; hence, the researchers were enthused to focus on the extraction and properties of its cellulose powder.

#### **METHODS**

The experimental research design was employed to extract cellulose powder from dalandan albedo and test its properties, specifically, Water Retention Capacity, Oil Retention Capacity, and Flow Property through Hausner's Ratio and Percentage Compressibility Index using Bulk and Tapped Density. After isolating dalandan albedo from the fruit peeling, the patented procedure was followed for cellulose powder extraction. Three different acid concentrations of cellulose powder (30%, 20%, and 10%) were compared in terms of their properties. Mean and the standard deviation was used to describe the samples, while the One-way ANOVA test was utilized to determine if there is a significant difference among these three groups of acid concentration.

#### **RESULTS**

The results for the mean showed precision with values nondistant to one another and so each acid concentration was of the same property which was further proved by the small Standard Deviation values and so was interpreted to be nondistant from the mean. Furthermore, One way ANOVA test resulted in an F-value of 0.0264 which is lower than the critical value (4.2565) and P-value of 0.9741 which is greater than the alpha value (0.05). Therefore, the test is not significant and there is no sufficient evidence to conclude that there is a significant difference between the three acid concentrations based on their properties.

#### **DISCUSSIONS**

The three samples of cellulose powder showed similar and acceptable properties. Therefore, dalandan is a good source of cellulose powder and can be used for further study since it can be utilized as a filament for the thread and as an eco-friendly functional ingredient for fillers in the paper, water absorbents, and cosmetic products. Further test such as particle size analysis, total alpha cellulose content, and Fourier Transform Infrared (FTIR) Spectroscopy to determine its chemical composition are also recommended.

**KEYWORDS:** dalandan albedo, cellulose powder, extraction, properties of cellulose powder

**SUBMISSION ID: R04A-LAGUNA-0004**

**Fire Retardant Spray: An Alternative Fire Extinguisher that Contains Calcium Carbonate from Eggshells and Oxaloacetic Acid From Kamias (*Averrhoa bilimbi*)**

Marlon L. Reolo, Camp Vicente Lim Integrated School  
(Adviser: Leandro De Luna)

**Abstract**

**INTRODUCTION**

Fire is the rapid oxidation of a material in the combustion, releasing heat, light, and various reaction products. There have been 1,758 fire incidents in 2018, which have injured 108 people and damaged over 1 billion pesos in property, according to the statistical record of the Bureau of Fire Protection (BFP). The BFP said that the top three causes of fire in the Philippines are faulty electrical connections, lit cigarette butts, and open flames from unattended stoves, given the fact that most of the houses in the country are made from light materials such as wood. Statistics showed that fire protection should be employed all over the country, meaning all houses should have a good fire exit and fire extinguisher. Thus, the researcher decided to produce a fire retardant spray that can be used as an alternative fire extinguisher containing calcium carbonate from eggshells and oxaloacetic acid from kamias (*Averrhoa bilimbi*).

**METHODS**

A multiple method design was used. The formulation of the fire retardant spray consists of Seeking, Preparing, Extracting, Measuring, and Putting. The investigator sought for resources of kamias (*Averrhoa bilimbi*) and waste eggshells. After that, the extracted kamias (*Averrhoa bilimbi*), and pulverized eggshells were prepared. The mixture was put in a pump hand sprayer for the testing of its effectiveness in different fire cases.

**RESULTS**

Based on the test and evaluation, the fire retardant spray was effective and efficient in extinguishing the fire from different reactants. The test showed that the product was efficient in extinguishing the combustion of alcohol, candle cloth, and wood.

**DISCUSSIONS**

The result of the study indicated that future researchers should try the fire retardant spray in Class C fire such as electric motor, electric wiring, etc. Future researchers should also use a metal sprayer and try to make the two materials become foamed. Additionally, they should conduct more studies on a topic related to the two materials that can be used as a fire extinguisher.

**KEYWORDS:** fire retardant spray, kamias (*Averrhoa bilimbi*), eggshells, calcium carbonate, oxaloacetic acid

**SUBMISSION ID: R04A-CALAMB-0033**



## **Flipped Classroom Exposure: Interactive Intervention to Escalate Independent Learning in Science**

Rosmin Cafirma

### **Abstract**

#### **INTRODUCTION**

Learning in Science is enriched through instructional approach and utilization of blended education that withdraws the traditional learning environment by employing online science concepts. Learners explore effectively with guidance outside the classroom as they transport any type of activities from inside to outside the classroom. This study aimed to escalate independent learning in Science through "Flipped Classroom Exposure" among Grade Six-Diamond pupils of San Juan Elementary School, Alaminos Laguna, S.Y. 2018-2019.

#### **METHODS**

There was one (1) group of respondents included in this action research and this consisted of eleven (11) male and twelve (12) female with a total of twenty-three (23) pupils. Purposive sampling technique was used in the selection of pupils. The data used in this study were the results of Pre and Post- Tests, Performance Tests and Activity exercises (Percentage). Data Analysis used was T-Test for Pre and Post Test while the percentage for performance and exercises.

#### **RESULTS**

The result showed that the post-test scores after "Flipped Classroom Exposure" is remarkably better as compared to the traditional approach. Looking at the mean scores, it signifies that the variance of the Post-test was smaller than that of the Pre-Test, which suggests that the pupils' academic performance improved as compared to the pre-test result. There was a 46% increase in Mean and MPS. It reveals that the Grade Six pupils performed satisfactorily in Science Test.

#### **DISCUSSIONS**

It is therefore implied that strong internet connection and additional IT equipment demands attention for the next implementation. This research is timely as it sought answers concerning to exposition of learners to Flipped Classroom in online education. It is holistic research as it focused mainly on increasing the academic performance of the learners.

**KEYWORDS:** independent learning, on-line learning, Science, Flipped Classroom

**SUBMISSION ID: R04A-LAGUNA-0042**

## **Game-Based Worksheets with Buddy System as Remediation Technique: It's Effect to Learners Academic Performance in Science V**

Lolita Dizon, Department of Education

### **Abstract**

#### **INTRODUCTION**

The learners nowadays are always preoccupied of so many things like gadgets, computer games, and hanging out with friends, but the worst of it all, they do not like memorization in terms of conceptualization. As other studies showed, our millennial learners are considered visual learners. With these, the researcher would like to take advantage on these that is the reason why she incorporates all these hindrances in learning to develop a game based worksheets that can be uploaded in cellular phone and in computer and a buddy system which make an advantage for both learners and teacher. This study is concerned with the effectiveness of the developed game based worksheet with buddy system technique to the Grade five pupils in their academic performance. The gathered data is based on the selected topics and lessons in the prescribed quarter or period in Science V.

#### **METHODS**

This study used the experimental design with a control and experimental group. Hence, to determine the level of performance of the two groups of respondents in the pre-test and post-test, mean and standard deviation were utilized. Moreover, to determine the significant difference in the level of their academic performance in the post-test, independent t-test was employed.

#### **RESULTS**

The developed game based worksheet is composed of pictures connect to identify the parts and functions, jumbled letters and puzzle for vocabulary, mix and match and fact or bluff for the concept. It was found out that there is an increase in the posttest means score of the experimental group. This could mean that the respondents gained more knowledge and the developed game based work sheet has an effect on their performance in Science. Hence, there is a significant difference in their performance before and after exposure to the said experiment.

#### **DISCUSSIONS**

The results demonstrate the effectiveness of using the game based worksheets to help pupils improve their understanding of the basic concepts, knowledge, and vocabulary in Science classes. Exposing pupils to game based worksheets with buddy system affects their motivation, facilitates learning, and demonstrates interest to learn more in Science, thus, this study makes holistic in nature. This is an additional success in the field of education to have this game which is educational in nature, can be brought and opened anytime and anywhere, and learned lesson even the classes are suspended.

**KEYWORDS:** game-based worksheet, Buddy System technique, remediation, academic performance

**SUBMISSION ID: R04A-RIZALP-0412**

## **Guava Toothpaste: Health Hazard-Free, Alternative for Commercial Toothpaste**

Heidi Joy B. Inguin, Department of Education - Malvar

### **Abstract**

#### **INTRODUCTION**

Based on the record of Malvar municipal health center, the top three of the reasons why children ask for medication are with regards to tooth problem. That's why, the researcher tried to find way on how to hinder this matter. Instead of using commercial toothpaste or homemade toothpaste out of peroxide, guava juice together with baking soda and salt do not only clean and whiten teeth, it also provide substances which serve as anti-bacteria. Toothpaste using guava juice is just a simple activity, which can control learners' absenteeism due to toothache.

#### **METHODS**

The researcher to formulate toothpaste using one of the common plants in the community. This was processed by following the following steps: The researcher cut 4 guava leaves into small pieces. She boiled it using 2 tablespoons of water. After boiling, she filtered the mixture. She set aside the guava juice. When the juice was already cool, she added 1 tablespoon of it with 3 tablespoons of baking soda and 1/8 tablespoon of salt. She mixed it well until the mixture became a paste. When the paste was already intact, she placed it in a tube as its container.

#### **RESULTS**

The result shows that guava leaves juice toothpaste can give clean and white teeth result after three weeks. It also shows that out of 30 households that belong to different classes, 93% accepted the product. One hundred percent of Luta Elementary School teachers were convinced that guava leaves juice can be an alternative for commercial toothpaste.

#### **DISCUSSIONS**

After the observations and applications done, it was proven that guava leaves juice can be an alternative for commercial toothpaste. Moreover, it clearly displays the affordability and health hazard-free of the product. For further improvement of this study, support from the local government is somewhat needed for advance testing of the product.

**KEYWORDS:** guava, commercial use, toothpaste, alternative

**SUBMISSION ID: R04A-BATANP-0455**

**Gumamela Juice as Alternative Healthy Drink Science Investigatory  
Project of San Pioquinto ES**

Cian Harvey Z. Acebuque, Department of Education  
(Adviser: Giovanni Petalio)

**Abstract**

**INTRODUCTION**

This investigatory project aims to produce an ornamental juice drink that could be taken as healthier juice than the other commercialized juice drink. Parents nowadays are more concern about the health of their children. This study was conducted to prove that a simple local flower could produce quench thirsting juice. Gumamela were used as the main ingredient for the juice as that is available in the community. The sample was tested, the students, teachers and parents fairly accepted the taste and health benefits of the gumamela juice drink.

**METHODS**

The study will focus on the use of gumamela flowers. The dried petals were washed and placed in a tea bag. The careful procedure was monitored for its safety measures. The teabag with dried gumamela petals was dipped into hot water with calamansi extract and sugar. Additional gumamela jelly is added to make it more appealing.

**RESULTS**

The acceptability test of the gumamela juice shows that it is not only delicious but it has more health benefits and appealing to children. The juice drink is rich in vitamin c and minerals and can potentially cure many diseases like cough, hypertension and served as diuretic medicine.

**DISCUSSIONS**

As a result of this project, it was found out that flowers like gumamela flowers can be a source of juice drink and can be used as an alternative juice drink for commercial juices. Furthermore, it is cheaper and has more health benefits.

**KEYWORDS:** Alternative, Healthy, Drink

**SUBMISSION ID: R04A-BATANP-2297**

## **Heat Energy from Laptop Compressor as an Alternative Source of Electricity in Charging Mobile Phones**

Arvi Charlize R. Pascual & Raya Louise D. Santos, Santa Rosa Science And Technology High School  
(Adviser: Jesusa Gomez)

### **Abstract**

#### **INTRODUCTION**

In our generation that has been very dependent on electricity and the internet, a laptop is seen as a necessity for homes, schools, and work. The only problem concerning these devices is their limited battery supply and in our country, we mostly use non-renewable forms of energy such as coal and oil. In our study, we tried to use the heat energy from a laptop compressor as a potential renewable source of energy. Electricity was produced using the thermoelectric principle wherein a cool and hot side creates a thermal difference, which in turn will become electricity.

#### **METHODS**

Peltier tiles were used as the thermoelectric generator. Liquid nitrogen was also utilized as a coolant while the other is in contact with the laptop compressor. It then creates electricity to charge the batteries that will then charge the mobile phone. It is connected to a setup that is composed of the thermoelectric generator, an improvised circuit, DC booster, and cable wires. Through this, it can draw heat energy from the laptop, convert this energy into electricity to charge the mobile phones. The data is then recorded and tabulated.

#### **RESULTS**

The data collected showed that laptop heat is able to charge a mobile phone. Pearson Correlation was used to identify if there is a significant relationship between the variables. The data showed that there is a significant relationship between the voltage output of the setup and the duration of usage of the laptop with  $r$  equal to 0.98. The computed value of  $r$ , being 0.94, also showed that the voltage output and the different laptop heat temperatures have a strong association with one another. As seen from the results, duration of laptop usage and different laptop temperature are directly proportional to the voltage output garnered from the device. An average of 4.04 volts was also produced from the setups created.

#### **DISCUSSIONS**

It is evidently possible to convert the heat energy from the laptops into electricity enough to charge our mobile phones. However, a more sustainable coolant may be used in the device that can also produce a high thermal difference. It may not be enough to replace the present electricity source but through the collective effort of laptop users, dependence on the non-renewable source of energy could be significantly diminished.

**KEYWORDS:** Renewable energy, laptops, thermoelectric principle

**SUBMISSION ID: R04A-STAROS-0011**

## **Herbal Plants Extracts as an Alternative Remedy for Lessening Palmar Hyperhidrosis**

Freya Jiana T. Arellano & Krizalane Angelica B. Salazar, Calsen Science Club  
(Adviser: Criselda De Chavez)

### **Abstract**

#### **INTRODUCTION**

The main objective of the study is to produce a hand spray that can be an alternative remedy for palmar hyperhidrosis, the excessive sweating of the hands. This explores the effectiveness of herbal plants extracts such as green tea leaves, lemongrass, sampaguita and aloe vera. The study specifically aims to create a hand spray at cheaper cost, make use of herbal plants and ease people's worry about too much sweating.

#### **METHODS**

The ingredients and materials used were gathered from Bay and Calamba City. In extracting the juice, each plant was boiled in a casserole, half of it filled with water and then the mixture was distributed evenly to the spray bottles. It was then tested to ten selected respondents for five consecutive days to examine if the produced hand spray is effective. Purposive sampling was used to determine the respondents based on the needed subject of the study. Through the survey, the researchers were able to find out the severity of sweating of the hands of the respondents before and after the application of the product, by rating themselves according to the given criteria. Also, the texture, fragrance, convenience, and acceptability of the spray were observed.

#### **RESULTS**

Based on the findings, at a 5% level of significance, Wilcoxon signed rank test, which resulted in a p-value of .008 shows a significant difference before and after the treatment was applied. This indicates that there are changes in the severity of sweating of the hands of the respondents when the spray was applied. Twenty percent of the respondents strongly agreed, 60% agreed, and the other 20% disagreed that the natural hand spray is effective in terms of texture, fragrance, convenience, and acceptability.

#### **DISCUSSIONS**

According to the statistical result, there is a significant difference in the severity of the sweating of the hands of the respondents before and after the application of the product. Herbs extract can be an alternative remedy for lessening palmar hyperhidrosis. The product can be beneficial for people worrying about excessive sweating and it is a good start in using herbal plants as a remedy. Extending the number of days of application of the product and keeping it in a cool area can make the result more effective.

**KEYWORDS:** herbal plants extract, palmar hyperhidrosis

**SUBMISSION ID:** R04A-CALAMB-0118

## **High-Density Polyethylene (HDPE) and Polystyrene (PS) as Constituents in Creating Plastic Bricks**

Danielle Lane D. Metiam & Dannel Mark A. Onte, Calsen Science Club  
(Adviser: Criselda De Chavez)

### **Abstract**

#### **INTRODUCTION**

The invention of plastics is deemed as a remarkable breakthrough upon the existence of humankind, with its key properties that comprise of good durability and low weight. However, microorganisms are not able to decompose its molecules, and so, concern in increasing number of pollutants upon ocean, air, and land has raised awareness among people. With these in mind, the researchers attempted to develop lightweight and durable construction bricks out of waste from two types of plastics, High Density Polyethylene (HDPE) and Polystyrene (PS).

#### **METHODS**

Varying amounts of HDPE and PS are utilized to form three setups, namely, 100% HDPE, 100% PS, and 50% HDPE 50% PS. In order to melt, mold, and compress HDPE and PS, they were exposed to heat and chemicals, particularly acetone, respectively. The setups were subjected to tests of weight and durability - water absorption test and compressive test at Universal Testing Laboratory and Inspection, Inc. if it fulfilled the conditions of a standard brick. The distribution is normal using the skewness test. One-way ANOVA was used to determine if there is a significant mean weight difference between the three.

#### **RESULTS**

Having five trials for each set-up, the test for weight was as follows, setup 1, 100% HDPE, has a mean of 2629.2 g, setup 2, PS, has 1418.6 g, and setup 3, mixed HDPE and PS, has 1953.6 g. Lightweight construction bricks are considered more economical and can reduce the load by 30%-40%. It was then analyzed that there is the significant difference among the three set-ups at 5% level. On the other hand, the test for durability comprises of water absorption test and crushing strength test. A standard brick requires less than 7% water absorption to provide resistance from freezing. All the setups satisfied such condition, having only 0.8%, 3.2%, and 1.8% respectively. On the other hand, durability entails 70 MPa compressive strength to withstand and sustain compactness once exposed to high pressures. Then again, all of the setups exceeded the highest compressive strength and the values are 92 MPa, 105 MPa, and 95 MPa, respectively.

#### **DISCUSSIONS**

Upon the test for weight, it was declared that PS is the lightest, followed by mixed, and then HDPE. As all of the setups have fulfilled the Water Absorption Test and exceeded the Compressive test, they are deemed as durable. Moreover, the set-up that was highly recommended was 100% PS as it has the lightest weight, appropriate water absorption rate, and highest compressive strength.

**KEYWORDS:** plastic waste, weight, durability

**SUBMISSION ID: R04A-CALAMB-0119**

## **Home-Based Hydroelectric Generator**

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(Adviser: Angeline Pagkaliwangan)

### **Abstract**

#### **INTRODUCTION**

Electricity is an important part of our daily life. It has become the foundation of development happening in our surroundings. To produce electricity, humans tap energy from fossil fuels, wind, and water. Although effective, some sources are non-renewable, and most of them are almost depleted. In light of this problem, the researchers proposed a generator that runs on the stored potential energy of water. This will run the turbines that shall produce mechanical energy that will be then transformed into electrical energy by the dynamo, through electromagnetic induction.

#### **METHODS**

Two circles were cut from bottle caps. These were cut in half and glued onto one end of a GI wire. This becomes the turbine. Two water pipes were fitted into the tee fitting. Then, the turbine was placed into the said fitting. In another bottle cap, a hole was created in the middle and put through the turbine. The bottle cap was glued to the fitting. Lastly, other end of the turbine soldered to the dynamo. The durability of the product was tested by applying pressure on it with increasing amounts. On the other hand, a voltmeter was used to measure the amount of voltage produced. Lastly, the efficiency was computed by a given formula. These data were presented in tabular form and subjected to statistical analysis.

#### **RESULTS**

After the tests were conducted, the researchers found that the maximum pressure that the home-based hydroelectric generator can hold is 4.9 kPa. At this rate, the generator can withstand water pressure from the top of a two-storey house. For the value of the voltage that the said generator can produce, the amount averaged 4.8 V. At this value, the generator can be used in charging a phone. On the other hand, its cost is more economical than commercialized ones. Lastly, the generator's efficiency resulted to a mean of 71.7%. This means that 28.3% of the work input was wasted during the energy transformation process.

#### **DISCUSSIONS**

Based on the analysis, it can be concluded that the cost of the home-based hydroelectric generator is significantly lower than those of commercialized ones. This is due to the use of scrap materials in making the generator. However, the durability, efficiency, and the amount of voltage produced by the product were not comparable to that of a commercialized hydroelectric generator. It is recommended to use a stronger adhesive and better installment of the generator.

**KEYWORDS:** hydroelectric generator, electricity

**SUBMISSION ID:** R04A-BATANP-1059



## **Honing Cognitive and Manipulative Skills in Science of Junior High School Students in Area 1 Division of Batangas**

Shiela Aceveda, Department of Education

### **Abstract**

#### **INTRODUCTION**

Cognitive and manipulative skills predict performance in science. Efforts at developing skills in science to become scientifically literate citizens are a laudable reform that should be considered by all educators. This is in response to resolve issues involved in the declining performance of students in science. Along with this view, this study aimed to assess the cognitive and manipulative skills in science of junior high school students with the end view of proposing enhancement activities.

#### **METHODS**

The study used the descriptive method of research with the questionnaire as the data gathering instrument with an interview conducted to substantiate data. Respondents were 53 junior high school science teachers in three selected biggest schools in Area I, Division of Batangas. Frequency, percentage, weighted mean and Pearson product correlation were the statistical tools utilized to treat data.

#### **RESULTS**

Results of the study revealed that the respondents were mostly biology majors with MA units who had attended local and national seminars and training for the last five years of teaching and participated in science competitions. As based on their assessments, the students' cognitive skills in earth science, biology, chemistry, and physics were sometimes observed and students' manipulative laboratory skills were evident. A significant relationship between the cognitive skills in all science areas and manipulative skills in terms of cleaning and safekeeping were noted; however, no significant relationship was noted between the cognitive skills in chemistry and manipulative skills in terms of handling scientific laboratory apparatus.

#### **DISCUSSIONS**

Findings also indicated that science teachers agreed that there were factors that hindered the development of the students' cognitive and manipulative skills. As a contribution to enhancing science literacy among students, the researcher proposed activities to hone students' cognitive and manipulative skills, which were recommended for evaluation. Moreover, it was recommended that factors that hindered the development of students' cognitive and manipulative skills be addressed and found solutions to make students science literate individuals.

**KEYWORDS:** cognitive skills, manipulative skills, honing

**SUBMISSION ID: R04A-BATANP-2293**

## **Implementation of Project BaMPY (Basura Mo, Pera Yan) in Relation to Waste Management in Tadalak Elementary School**

Michelle Ann Quinan, Department of Education Rizal, Tadalak Elementary School

### **Abstract**

#### **INTRODUCTION**

Disposing of waste is one of the hundred things we do in our daily life. Unluckily, there are some people do not have discipline in disposing of waste. They throw waste anywhere and everywhere not knowing the consequences of their actions. Improper ways of dumping wastes can cause floods because it makes the sewer clog and can affect our health. In relation to this problem, YES-O formulated "Basura Mo, Pera Yan Project". Collecting and selling empty plastic bottles are the process of the project. The collected amount from the project will be used to support the activities of YES-O.

#### **METHODS**

This study aimed to know the status of waste management before and after implementing Project BaMPY at Tadalak Elementary School. Descriptive method of research utilizing the researcher-made survey form was used in the study. The respondents of the study were ten (10) randomly selected school staff and ten (15) randomly selected grades 5 and 6 pupils of Tadalak Elementary School S.Y. 2018 - 2019.

#### **RESULTS**

The status of waste management before the implementation as perceived by the pupils obtained the mean of 1.22 and standard deviation of 0.04 while the staff has a mean of 1.62 and standard deviation of 0.08 and has a verbal interpretation of not evident. On the other hand, the status of waste management after implementation, pupils had obtained the computed mean and standard deviation of 4.48 and 0.06 respectively and verbally interpreted as highly evident whereas the staff gained a mean value of 4.49 and 0.6 as standard deviation and verbally interpreted as highly evident. The overall computed mean and standard deviation are 4.49 and 0.66 respectively verbally interpreted as highly evident. Based on the results, pupils and staff have almost the same perception on the status of waste management.

#### **DISCUSSIONS**

The result revealed the present situation of waste management in Tadalak Elementary School it also implies that Project BaMPY is an effective innovation since the null hypothesis is rejected that there is a significant difference on the status of waste management after the implementation. Pupils and staff must strictly observe proper waste segregation in order for the effectiveness of the innovation.

**KEYWORDS:** BaMPY ( Basura Mo, Pera Yan), waste management, waste segregation

**SUBMISSION ID: R04A-RIZALP-0426**

## **Implementation of Spiral Progression in Teaching Science**

Ranel Briones, Department of Education, Lingig National HS

### **Abstract**

#### **INTRODUCTION**

The profile of the implementers contributed to the level of implementation of the spiral progression approach as to The Classroom Management, Curriculum and instruction, and School facilities. The spiral progression in teaching science is a technique used in teaching where first the basic facts of a subject are learned without worrying about details. Then as learning progresses, more and more components are introduced, while at the same time they are related to the basics which are reemphasized many times to help enter them into long-term memory. The K+12 Basic Education program is a major education reform implemented in 2012 in the Philippines. It aims at decongesting and enhancing the primary education curriculum for learners to master basic competencies, lengthening the cycle of basic education to cover Kindergarten through year 12 (SEAMEO INNOTECH,2012).

#### **METHODS**

This study utilized descriptive-evaluative research. It is descriptive-evaluative research since the characteristics used to describe the situation or populations are usually some categorical schemes also known as descriptive categories and evaluative in the sense that evaluation of the implementation of the existing curriculum was employed. Conducting a survey is one of the approaches in this study to collect appropriate data for interpretation. The researcher-made questionnaire as the tool was used by the researcher to gather the necessary data from the five (5) high schools in the municipality of Lingig, Surigao del Sur. Only the heads and science teachers answered the survey questions separately containing items related to the implementation of spiral progression. The whole enumeration data was used with the questionnaire as the instrument of the study. Secondary science teachers and school heads were the respondents of the study. For the treatment of the data frequency count and percentage, weighted mean, Pearson moment correlation, and One Way ANOVA were used to interpret the data.

#### **RESULTS**

Both the teachers and heads acquired excellent in classroom management, the same with the curriculum and instruction with an adjectival rating of excellent, while for school facilities, the administrators rated it excellent but satisfactory for Science teachers. It was observed that the school head's rating and teacher's rating for school facilities differ. The respondents regarded that there is dearth laboratory equipment. It is considered as a problem. It inferred that there is a significant relationship between the profiles of the respondents as to the implementation of spiral progression.

#### **DISCUSSIONS**

The kind of implementer gauges the level of implementation of the spiral progression approach as to Classroom Management, Curriculum and Instruction, and School facilities. It was also determined that there is a significant difference with the classroom management, curriculum and instruction, and school facilities in the implementation of the spiral progression approach based on the interpretation of gathered data. A proposed intervention should be utilized to address the existing problems encountered by the respondents.

**KEYWORDS:** Spiral Progression, Classroom Management, School Facilities, and Curriculum Instruction

**SUBMISSION ID: R013-SURSUR-0197**

## **Improving Pupil's Achievement in Science of Grade VI-Instagram at San Luis Central School**

Paulina Cuasay

### **Abstract**

#### **INTRODUCTION**

Science is a learning area that needs to explore teaching strategies and approaches that would facilitate understanding of science concepts and learning of every individual pupil. It is at the core of every individual and political decisions. We use scientific information to make choices and judgments for every issue and event that occur every day. Nevertheless, despite the obvious importance of scientific literacy, the tests administered before showed poor student performance in Science. In this stud, researcher hopes she would produce functionally literate pupils, who demonstrate the ability to solve problems critically, think innovatively, make informed decisions and improve achievement in the said learning area.

#### **METHODS**

Different methods were used. A data gathering method wherein the researcher personally distributed questionnaires and were collected and data obtained were tabulated in tables and interpreted using the simple percentage.

#### **RESULTS**

Although it is the second section in Grade Six of San Luis Central School, this set of pupils belongs to the heterogeneous group. The poor performance in Science of Grade Six- Instagram was observed during the pretests conducted on June 8, 2016 (first semester) and November 3, 2016 (second semester) respectively. In this set of pupils, the following solutions were effective: parents' assembly, conducting questionnaires, giving enrichment exercises or drills, utilizing the ICT (Information and Communication Technology) and the integration or applying different approaches and strategies in teaching.

#### **DISCUSSIONS**

Upon applying different approaches and strategies, the Grade VI-Instagram class participated actively during the discussion. Nobody kept idle. Eagerness to join in conducting Science activities and experiments were shown by everyone. Pupils' progress in quizzes and summative tests were observed. The employment of enrichment exercises or drills facilitates pupils' learning. The harmonious relationship between parents and teachers contributes to pupils' interest in science activities.

**KEYWORDS:** science, technology, achievement, integration

**SUBMISSION ID: R04A-BATANP-2166**

## **Improving Students' Performance in Science through Multimedia Instructional Devices**

Urik Maglana, Department of Education, Lingig National HS

### **Abstract**

#### **INTRODUCTION**

Based on observation, Science subject is one of the most difficult subjects in the curriculum due to complex terminologies, mathematical formulas, and operations used. This experience is manifested from the first periodical exam result of Grade 10 Section Courteous Students, S.Y 2016-2017. It was found out that the mean percentage score is very low. It is in this grading period that multimedia instructional devices were not utilized during classroom instruction. With the desire to increase the mean percentage score of students on the succeeding quarterly examinations, the proponent intensifies the use of the said innovative style of teaching.

#### **METHODS**

The study used descriptive method and universal sampling to determine the extent of the relationship between the use of multimedia instructional materials and improvement of the performance level of students in Science 10 Section Courteous. All 42 students of the said class were the respondents of the study and were exposed to a variety of multimedia instructional devices during the second grading period. The mean percentage score difference index and the significant difference before and after the intervention were measured and compared using the unpaired-sample t-test.

#### **RESULTS**

It is noted that there is a significant increase from 37.19 % mean percentage score difference index in the first grading period when multimedia instructional devices were not utilized in teaching to 52.67 % in the second grading period when the said innovative style of teaching was already utilized. The computed p-value of 0.00001, which is less than 0.05, indicates that there is a significant effect/difference between the intervention and improvement of students' performance level. The result of the study is parallel to the study on the positive impact of utilizing technology-based instructional materials on the performance level of students (Erwin and Rieppi, 1999).

#### **DISCUSSIONS**

Absence of multimedia instructional devices in teaching results to the poor performance level of students in science. This is evident because there is a significant increase in the level of performance of students when multimedia instructional devices are utilized in teaching. Furthermore, there is a significant difference and large effects based on the p-value statistic on the performance level of students before and after multimedia instructional devices are utilized in teaching.

**KEYWORDS:** Multimedia instructional devices, benchmark, difference index, a significant increase, a significant difference

**SUBMISSION ID: R013-SURIGA-0003/ R013-SURSUR-0216**

## **Increasing Students Achievement in Science using Intentional Vocabulary Approach**

Dianesse Lane Rendal & Xandra Lee P. Cervitillo, Manuel I. Santos Memorial  
National High School

### **Abstract**

#### **INTRODUCTION**

Science is a core element in the elementary and high school levels. Its inclusion in the school curricula aimed at achieving a degree of "scientific literacy", which will enable citizens to be effective in modern societies. However, based on the result of the National Achievement Test, poor achievement levels in Science of Filipino students have been observed for years. The purpose of this action research is to observe student achievement in Science based on different vocabulary teaching strategies. It also aims to increase students' knowledge of Science concepts by developing their vocabulary background.

#### **METHODS**

This study used experimental design to determine which teaching approach provides better learning outcomes, the traditional teaching approach or the INTENTIONAL VOCABULARY APPROACH. The respondents of the study were purposively selected based on the mean gain performance on the First Periodical Examination and were assigned as the control and experimental group. A validated pre-test was given to the respondents prior to the use of INTENTIONAL VOCABULARY APPROACH to the experimental group and the traditional teaching approach to the control group. After incorporating different vocabulary strategies, validated post-test was administered to check if the proposed approach increases science achievement.

#### **RESULTS**

Data were statistically analyzed using the mean to determine the level of performance of the control and experimental group based on the pre-test and post-test in Biology 7. Dependent t-test were used to determine the significant difference between the pre-test and post - test results of the control and experimental group. The significant difference between the post-test results of the control and experimental group were analyzed using the independent t-test. The results show that INTENTIONAL VOCABULARY APPROACH significantly provides better learning outcome as compared to the traditional teaching method.

#### **DISCUSSIONS**

VOCABULARY DEVELOPMENT is explicitly teaching specific words to students and is commonly used in English subject. However, there are domain-specific words that must be clearly introduced to the students before, during and after a discussion on other learning areas specifically in Science. Developing the vocabulary background of student increases literacy and content-area achievement. Direct instruction enables students to learn complex concepts and ideas that are more common in the written text compared to spoken language. Thus, it is suggested that teachers should incorporate vocabulary learning as a priority and include it on the instructional activity.

**KEYWORDS:** Tiers of Vocabulary, Intentional Vocabulary

**SUBMISSION ID: R04A-RIZALP-0431**

## **Indoor Auto Smoke Detector and Odor Adsorbent**

Kirck John Anthony A. Pamposa III

### **Abstract**

#### **INTRODUCTION**

Indoor air pollution is the worldwide cause of different respiratory diseases such as asthma, TB, common colds, and cough. Many air purifiers and cleaners are available in the market but are at very high prices, which ordinary people cannot afford. Hence, this study was conducted.

#### **METHODS**

The materials used were taken from the researcher's residence, while some were purchased from the hardware store and online. It all started with the assembly of the wooden frames and inner canister for the charcoal. Then a smoke sensor was connected to a wire for a relay if the sensor senses a smoke.

RESULTS. As observed from both the testing and actual trials, it was evident that IASDOA adsorbs the smoke as it turns off, when the smoke was already gone in the container. No smokes were observed to pass the canister with the charcoal. The odor becomes slightly noticeable after the application. In all of the trials, the amount composition of air ranges from 94-97 as it was exposed to smoke and before the application of IASDOA. After application, there is almost a half difference in the amount of air composition, ranging from 42-43.

#### **DISCUSSIONS**

The grand mean difference, which is 52.8 shows that there is a significant difference between before and after the application of IASDOA. It means that there is a change for composition and IASDOA has the potential and capacity to adsorb the smoke.

**KEYWORDS:** AUTO SMOKE DETECTOR, ODOR ADSORBENT

**SUBMISSION ID: R012-TACURO-0021**

## **Influence of Fermented Rice-Water on Mung Bean**

Karl Nikolas Alcala

### **Abstract**

#### **INTRODUCTION**

Throughout the world, farmers were ensuring that they harvest enough supply of crops that will match local demands. For this, fertilizers were applied. However, synthetic fertilizers pose as deleterious threat not only to human health but also on soil ecology, which interferes the interaction of plants and microorganisms, causing decreased plant growth; for these, a safe, cheap and readily available material was sought to become a potential bio fertilizer. Since rice water acquires the said qualities, it was investigated. Its influences on plants were evaluated using mung bean (*Vigna radiata*) as a subject for being commonly used as crop.

#### **METHODS**

The Randomized Complete Block Design (RCBD) was utilized with two (2) blocks""W-block and R-block""with five trials in which, W- block was the control block of mung beans irrigated with water while R-block was the experimental block irrigated with rice water that is openly fermented from the day when the mung beans were triggered to germinate. The irrigation of the two blocks started on day 5 up to day 30, relative to the start of mung bean germination. On day 30, all the mung beans were evaluated in terms of final height, stem count and leaf count. Hence, in the fourth parameter; height increase rate was investigated by determining the heights of plants on days 5, 10, 15, 20, 25 and 30.

#### **RESULTS**

The data gathered from the two blocks were comparatively analyzed. Based on the results, the mung beans irrigated with fermented rice water had an average leaf count of 8.4 that is 100% greater than the W-block leaf count of 4.2. In terms of stem count, W-block had a mean of 1.8 while R-block had 3.4. The comparison showed that the R-block was superior over W-block, with 89% higher than the latter. However, on final height and height increase rate of mung bean, W-block had means of 25.78 cm and 1.55 cm every five days, while R-block had 31.46 cm and 2.72 cm respectively. Thus, R-block was once again superior over W-block by a magnitude of 22%, in terms of final height; whereas, on height increase rate, it was greater by 75%.

#### **DISCUSSIONS**

The superiority of the mung beans irrigated with fermented rice water over the block irrigated with water is evident. When statistical analysis was applied, generally, there is a significant difference between the two blocks. These results demonstrate the positive influences of fermented rice water on mung beans. Hence, fermented rice water can be defined as an effective bio-fertilizer.

**KEYWORDS:** Fermented rice water, bio fertilizer, W-block, R-block, four parameters

**SUBMISSION ID: R04A-CALAMB-0078**



## **Influence of Light Filtering Materials on the Growth Performance of Pechay (*Brassica rapa*)**

Joven G. Mantalaba  
(Adviser: Jomel Montero)

### **Abstract**

#### **INTRODUCTION**

Globally, Pechay plant is one of the vulnerable vegetables to global warming. Due to drought and lack of water supply and fertilizers in the Philippines, several farmers encountered a problem on how to improve the growth performance of Pechay. One of the potential solutions to this problem is by introducing light filtering materials. Since many studies did not show what color of light filtering materials could perform best for the growth performance of Pechay, this study was therefore conducted.

#### **METHODS**

This study employed the Randomized Complete Block Design (RCBD) with five treatments and four replications. Different colors of light filtering materials were used such as blue (Treatment 1), red (Treatment 2), white (Treatment 3), yellow (Treatment 4) and control (Treatment 5). In planting Pechay, cultural management practices were implemented such as land preparation, seeding preparation, out planting of seedlings, care, and maintenance of Pechay, and construction of filter. Data gathering follows every week within one-month observation. Plant height, number of leaves, and width of leaves were measured to examine the growth performance of Pechay. Data were treated using average mean, frequency count, and one-way ANOVA.

#### **RESULTS**

Based on the results of the study, red and yellow color of light filtering materials have the highest measurements of Pechay in terms of height, width of leaves, and its number of leaves compared to the control group. It further revealed that there is a significant difference of plant's height, width of leaves, and the number of leaves at 0.05 level of significance.

#### **DISCUSSIONS**

Among light filtering materials employed in this study, red and yellow color was found consistent in performing the best medium for the growth and development of Pechay. The significant difference of the growth performance of Pechay indicated that there is positive influence of the different colors of light filtering materials. Therefore, it could be deduced that light filtering materials especially red and yellow color are effective for the rapid growth and development of Pechay plant.

**KEYWORDS:** Influence, Light Filtering Materials, Growth Performance, Pechay

**SUBMISSION ID:** R013-SURSUR-0156

## **Innovative Science Approach on Students' Achievement Using Mnemonic Device**

Jackie A. Intoy, Department of Education - San Pablo City

### **Abstract**

#### **INTRODUCTION**

Mnemonic devices are learning strategies that can often enhance the learning process and later the recall of information. On the other hand, mnemonic systems are special techniques or strategies consciously used to improve memory; they help employ information already stored in long-term memory in order to make memorization an easier task. There is no doubt that mnemonic techniques are one of the most important methods and methodologies used in education. The aim of vocabulary learning and teaching is to transfer the lexical information from the short-term memory to the long term memory.

#### **METHODS**

In this study focused on the development and validation of Mnemonic Device that will enhance the students' academic achievement in Science VI. The respondents were sixteen (16) from Grade VI who got an MPS lower than 75% mastery during the Science First Grading Test for the School year 2018-2019. Science experts, as to relevance, adequacy and scope, evaluated the constructed Mnemonic Device. To be an effective tool, the (R and D) Research-Based Development methodology stages were utilized: Planning stage and validation Stage. In terms of these criteria, the mnemonic device, the use of the t-test of difference between means was computed.

#### **RESULTS**

Results showed that there is a significant difference between the pretest and posttest after the mnemonic device during their remedial instruction. The mnemonic device was likewise found to be an effective tool in improving the academic achievement of Grade VI students. Mnemonic devices are not only superb for the average student, but they also work fantastically for students with learning disabilities and for students that need a little extra help learning.

#### **DISCUSSIONS**

One of the most challenging parts of every science learning is the acquisition of Science terms. Students, however, complain that they cannot remember the words they have learned. To solve this problem, teachers can attempt to include mnemonic devices into their classes. Mnemonic devices are useful ways of enhancing Science terms learning and recall. Such memory techniques should not replace other approaches to vocabulary learning, but should complement them. An even bigger number of students deal with an increasing amount of distractions that can slow down or inhibit their learning. By using mnemonic devices, teachers would be able to reach a wider variety of students, and would be able to help different student through the same method.

**KEYWORDS:** Mnemonic Device, Academic Achievement, memorization, learning difficulties

**SUBMISSION ID: R04A-SANPAB-0022**

## **Integrating Computer-Based Activities in Teaching Grade 10 Physics**

Evelyn Reña

### **Abstract**

#### **INTRODUCTION**

This study aimed to investigate the effectivity of integrating computer-based activities in teaching Physics. It has been a commonly hated subject in Science at Calubcub 1.0 National High School and students get low rating in both academic and conceptual reasoning skills in Science subjects. The researcher believes that as the world moves on in the 21st century, the increasing demand for information and Communication Technology skills in the work place and schools has necessitated technology integration in teaching.

#### **METHODS**

The researcher utilized the experimental design and was used questionnaire about the level of interest in using Computer-Based Activities and conducted pretest-posttest consists of multiple choice-type of questions covering knowledge, understanding, processes and performance. The researcher used module includes activities, which aligned with the Grade 10 competencies and topics as prescribed in K to 12 Curriculum. The experimental group was taught with lessons integrated with computer-based activities in Grade 10 Physics.

#### **RESULTS**

The module integrating computer-based activities is an effective tool in teaching Physics. The computer-based materials in teaching Science gained the interests of the students in studying Physics. The use of technology in education provides the students with a more suitable environment to learn, serves to create interest and a learning centered-atmosphere, and helps increase the students' motivation. The use of technology in this way plays an important role in the teaching and learning process. The motivation among students learns Physics with modern technology provides a bigger room for intellectual development. This result showed that integrating computer in different Physics activities increased the achievements of the student.

#### **DISCUSSIONS**

The instructional material was developed with integration of computer-based activities to enhance the performance of each student in Physics. The designed activities used computer to motivate the students in learning Physics. This is true with the findings of Racoma (2011) that the use of computer results to high score in achievement test. Future researcher may conduct similar studies in other science topics and grade levels for the K to 12 Curriculum.

**KEYWORDS:** Computer Based Activities, K-12 program, Physics

**SUBMISSION ID: R04A-BATANP-1013**

## **Integration of Genyo E-learning Technology in Science Teaching at Batangas Eastern Colleges**

Mac Millan C. Tobeo, Alupay National High School

### **Abstract**

#### **INTRODUCTION**

The Genyo E-learning system as an instructional content is delivered by electronic technology by way of internet or intranet to create experiences and to educate students. It is most preferred by privately schools due to its access and its many advantages in providing Education. High-end instructional materials have been developed and used in teaching but as always, there is question on the level of technology Integration and on the competency of faculty in using Genyo E-learning technology in the K to 12 curriculum.

#### **METHODS**

The study made use of the descriptive method of research utilizing survey questionnaire and interview in the assessment and analysis of data. Thirty-two (32) teachers of Batangas Eastern Colleges handling the give core subjects of English, Filipino, Mathematics, Science, and Araling Panlipunan were involves in the assessment of the status extend, and constraints met in the Integration of E-learning technology in spiral progression. Purposive sampling was utilized in selecting 52 active senior Students as respondents based on certain criteria.

#### **RESULTS**

Teachers' utilizing Genyo E-learning technology in teaching was also high focused on the five core subject areas. Teachers created online lessons, games, and other learning activities in applying Genyo E-learning technology in teaching the different lessons. It was highly evident that the Genyo E-learning technology brought interactive multimedia and hands-on activities. Moreover, teachers sometimes met barriers in the Integration of Genyo E-learning technology in the teaching-learning process. With this, the designed lesson package aims to enlighten the teachers and the students on the importance and effect of technology in teaching, addresses the issue and concerns of their instructional management tasks, and enhances science instruction in the K to 12 curriculum when implemented.

#### **DISCUSSIONS**

The results demonstrate that E-learning technology is applied largely in delivering instruction. It is moderately evident that E-learning technology is integrated in activity, analysis, abstraction, application, and evaluation. There is significant relationship between the extent of application and the status of integration of E-learning technology in teaching. In addition, the major barriers or constraints met in are lack of confidence, lack of access to resources, and lack of competence.

**KEYWORDS:** Genyo E-learning Technology, Science Teaching, Lesson Package, Constraints, Teaching-Learning Infrastructure

**SUBMISSION ID: R04A-BATANP-0037**

**Juan sa Silid-Aralan: Pag-uugaling “Bahala na” at Pagpapasya ng mga  
Mag-Aaral ng Calamba City Senior High School**

Jimwel Bryan Christopher P. Ferrer, Lenard D. Visaya, & Marc Cyrel M.  
Magnawa, Calsen Science Club  
(Adviser: Edizon P. Dela Cruz)

**Abstract**

**INTRODUCTION**

Ang pananaliksik ay isinagawa upang tukuyin ang kaugnayan ng paguugaling “Bahala na” at ang kakayahang magpasya ng mga mag-aaral. Lubusang pinagtuunan ng pansin ang (1) mga salik na makakaapekto sa pag-uugaling “Bahala na”, (2) ang epekto ng pag-uugaling “Bahala na” sa pagpapasya ng mag-aaral, at (3) ang mga paraan upang malabanan ng mga mag-aaral ang pag-uugaling “Bahala na” pagdating sa pagpapasya.

**METHODS**

Ginamit ang penomenolohiyang pamamaraan upang talakayin ang karanasan ng mga mag-aaral na maaaring may kinalaman sa pag-uugaling “Bahala na”. Pinag-aralan ang pananaw ng mga mag-aaral tungkol sa epekto ng pag-uugaling “Bahala na”. Ang mga mag-aaral ng Calamba City Senior High School na umamin na may pag-uugaling “Bahala na” ay pinili upang maging kalahok. Walo (8) ang pinili sa batayan ng antas o kadalasang pagpapakita ng pag-uugaling “Bahala na”. Ang mga natuklasan ng mga kalahok ay ginawan ng tema.

**RESULTS**

Napag-alaman na ang mga salik sa pag-uugaling “Bahala na” ay (1) ang kahinaan sa time management, (2) motibasyon sa pag-aaral, at (3) mga pagkalingat sa pag-aaral. Ang epekto ng pag-uugaling “Bahala na” sa pagpapasya ay (1) ang kalidad ng gawa at (2) ang pagtimbang ng pagpapasya. Samantala, kung kailangang gawin ang isang napakahalagang gawain, nagagawang labanan ng mga mag-aaral ang pag-uugaling “Bahala na”.

**DISCUSSIONS**

Samakatuwid, (1) malaki ang epekto ng sarili at ng kapaligiran sa antas ng paguugaling “Bahala na”; (2) ang pag-uugaling “Bahala na” ay pinapairal sa mga bagay na sa tingin ng mga mag-aaral ay may mahabang halaga lamang pero hindi sa mga mahahalagang bagay; at (3) nagagawang labanan nang panandalian ng mga mag-aaral ang pag-uugaling “Bahala na” sa pagkakataon ng napakahalagang gawain sa loob ng paaralan.

**KEYWORDS:** “Bahala na”, Pagpapasya, Mag-aaral

**SUBMISSION ID: R04A-CALAMB-0121**

## **Kitchen Food Waste Processor**

Chierizel Vaughn G. Castaño

### **Abstract**

#### **INTRODUCTION**

Food waste processor is an electronic device used to process food and make it more useful to us, to plants and to the environment. Food waste is a decrease in the quantity or quality (nutritional value) of food intended for human consumption (FAO). This study aimed to design and develop a Kitchen Food Waste Processor to be a tool to help handling food waste issues.

#### **METHODS**

In constructing the machine, the researchers used recyclable materials such as AC motor and propeller from an old electric fan. The container is entirely casted of cement while some parts were made of metal sheets. After the machine was constructed, it was tested. Food waste was placed in the machine and processed for three hours. Then, it was repeated by two more times. The respondents watched before and after the process in order to rate the satisfactory observation. In evaluating the efficiency of the device, it was taken by the observations of the researchers and by sensory evaluation of the respondents.

#### **RESULTS**

The machine was tested its efficiency by the observation of the researchers and the sensory evaluation made by the respondents revealing a "Very Satisfactory" response. Economic value was also tested through sensory evaluation, which was described as "Excellent".

#### **DISCUSSIONS**

After the processing period, the size of the food waste changed from coarse form to fine granules. The food waste became homogenous in phase. These were due to the grinding made by the mixer of the machine. The odor of the food waste abated after the procedure because of the presence of the charcoal and baking soda. In addition, the food waste decreased in amount due to separation of the liquid part. The newly devised machine showed satisfactions and low cost in terms of economic value. The results proved that the Kitchen Food Waste Process has the potential to process food waste and has capability to work efficiently. Moreover, the materials used are affordable that made the study a low economic value.

**KEYWORDS:** KITCHEN, FOOD WASTE, PROCESSOR

**SUBMISSION ID: R012-TACURO-0027**

## Larvicidal Activity of Kawad Kawaran (*Cynodon dactylon*) Plant Extract Against *Aedes albopictus*

Victor Shanly Millan  
(Adviser: Annalyn Loreto)

### Abstract

#### INTRODUCTION

Mosquitoes are the common insects that endanger health by spreading human diseases through bites. Millions of death worldwide every year is attributed to mosquitoes (Chzarmyn, 2014). Synthetic use of mosquito control agents is said to have an immediate action and more effective in recent times. However, studies showed that excessive use of synthetic chemicals has caused an alarming resistance and harmful effects on the human health and to nature. With these, the use of larvicides from plant extract is highly encourage (Brown, 1986). Its phytochemicals such as flavanoids, phenolic compounds, tannins, phytosterols, triterpenoids, alkaloids, ergonovine, and ergonovinine have insecticidal activities and larvicidal effects (Stuart, 2016).

#### METHODS

The experimental research design was used in this study. The plants were air-dried, minced, soaked in ethanol, filtered and underwent modified evaporation utilizing oil bath technique. The mosquito larvae, *Aedes albopictus* was subjected with the varying concentrations, 50%, 75%, and 100% of Kawad Kawaran (*Cynodon dactylon*) plant extract. The data gathered was computed using non-parametric tests, which was the Kruskal-Wallis Test to know if there was a significant difference among the varying concentrations and the control group.

#### RESULTS

In table 1 is the mean ranks of the mosquito larvae *Aedes albopictus* treated with the varying concentrations of Kawad-kawaran (*Cynodon dactylon*) and the commercial liquid. The test shows the mean rank in minutes of the samples in T1 is 5.60 and 5.40, T2 is 5.80 and 5.20 and T3 is 6.00 and 5.00 with a total mean rank of 5.80 and 5.20 for control and experimental group, respectively. In table 2 showed that value for Kruskal-Wallis is 7.600 ( $Kru=7.600$ ,  $p<.022$ ) the p-value which is 0.022 that is less than 0.05 level of significance.

#### DISCUSSIONS

The results showed that the experimental group has lesser mean rank the control group. It implies that the mosquito larvae *Aedes albopictus* treated with the varying concentrations of Kawad-kawaran (*Cynodon dactylon*) died earlier than the control group. In addition, the p- value is 0.022, which is less than 0.05 level of significance. This implies that there is significant difference on the larvicidal effect of the different concentrations of plant extract Kawad-kawaran (*Cynodon dactylon*) as compared to the commercial insecticide against *Aedes albopictus*. Furthermore, the extract can be an endemic alternative for the tested commercial product against the mosquito strain *Aedes albopictus*.

**KEYWORDS:** larvicide, *Aedes albopictus*, Kawad Kawaran, *Cynodon dactylon*

**SUBMISSION ID:** R011-COMPOS-0015

## **Larvicidal Property of Dalandan (*Citrus aurantium*) Ethanolic Leaf Extract on *Aedes aegypti* Larvae**

Marylene Dime, Kaytitinga National High School

### **Abstract**

#### **INTRODUCTION**

Dengue fever is a severe, potentially fatal, disease caused by dengue viruses, which is carried and transmitted by the female *Aedes aegypti* mosquito, through biting. One way of preventing it is by using larvicides that target larvae in the breeding habitat before they can mature into adult mosquitoes and disperse. Dalandan is widely scattered in cultivation in the Philippines. The leaf of the said plant was proven to possess limonoids -are said to have anti-fungal, anti-bacterial, anti-malarial and anti-viral properties. The objective of this study is to investigate larvicidal property of Dalandan (*Citrus aurantium*) ethanolic extract on *Aedes aegypti* larvae.

#### **METHODS**

Researcher used the two-group design wherein the control group was the ethanol only and the experimental was the ethanol with 100% limonoids. In this design, there is one experimental group and one control group. In addition, parallel group design was used in this study to identify if there will be significant difference between the control group and the experimental group at different concentration.

#### **RESULTS**

The first set-up, which was a two-group design, the control group ethanol, killed all 15 larvae in all three replicates. Moreover, for the experimental group, which was the ethanol with 100%, limonoids, the same number of larvae was killed. The second set-up was the parallel group design. The data was mainly gathered to find out if there is a significant difference between the commercialized larvicide and the ethanol with limonoids that has 25%, 75% and 100% concentration. The Commercialized larvicide killed an average of 14.33 larvae in each of the three replicates. Meanwhile, for the Ethanol with 75% limonoids, it has an average of 11.67. Then for the 25% concentration, it has an average of 8.33. Lastly, for the 100% concentration, it has an average of 15.

#### **DISCUSSIONS**

The researcher was able to extract Dalandan (*Citrus aurantium*) leaves using maceration procedure. The 100% ethanolic extract of Dalandan can kill *Aedes aegypti* larvae because of its component limonoids and ethanol, which have anti-larva properties. In comparing the commercialized larvicide to the ethanolic extract, there is no significant difference between them except for the 25% extract. Similarly, for the 100% and 75% concentrations of the extract, there were also no significant difference. In general, the ethanolic extract of Dalandan, can also be an effective larvicide against *Aedes aegypti*.

**KEYWORDS:** Larvicide, Dalandan. Limonoids, *Aedes aegypti* , Larvae, ethanolic

**SUBMISSION ID: R04A-CAVTP-1059**



## **Learning Qs and Science Achievement of G10 Students of Dipintin High School, Maddela, Quirino**

Melinda C. Garpida, Department of Education

### **Abstract**

#### **INTRODUCTION**

The present state of science education in the Philippines, particularly in the basic education level, lags behind when compared with other countries in the world. With the poor student achievement, educational researchers worldwide are prompted to continuously identify factors that can account for academic outcomes in the classroom. It is therefore the role of a teacher to motivate the learners by making his lesson interesting using digitized materials. One of these materials is the e-learning Quipper School.

#### **METHODS**

The study employed the descriptive-quantitative research design wherein the statistical tools used in the analysis of data were Mean and Standard Deviation, Paired Samples t- Test and Eta-squared. Mean and standard deviation were used in determining the pretest and posttest scores of the participants while Paired Samples t-Test was used to determine significant difference in the scores of participants before and after the implementation of the intervention; e-Learning Quipper School. The eta squared was also computed to find out the effect size of the intervention to the science achievement of the participants. The participants were chosen through purposive sampling. There were 58 Grade 10 participants.

#### **RESULTS**

Based on the aforementioned revelations, there was an increase in the mean score of the participants from pretest to posttest, the increase of the scores after the implementation of the e-Learning Quipper School as an intervention was significant and the e-Learning Quipper School as an intervention in teaching Science was effective in improving the achievement of the participants. Thus, this intervention is recommended for use in science subjects.

#### **DISCUSSIONS**

The results manifested that the e-Learning Quipper School as an intervention in teaching Science was effective in improving the achievement of the participants. Hence, the researcher recommends that there should be an intensified utilization of the intervention in Science instruction. Further, it should be adopted as one of the teaching strategies in teaching all subjects and parallel studies that will employ bigger sample and experimental research design to validate its findings should be conducted.

**KEYWORDS:** e-Learning Quipper School, level of science achievement and eta2

**SUBMISSION ID: R002-QUIRIN-0093**

## **LED Light as Automatic Night Lamp**

Hycinth Xyra C. Dolojo

### **Abstract**

#### **INTRODUCTION**

The study entitled "LED light as automatic night lamp" was conducted to assess the potentiality of the LED light in terms of its life span, sensitivity, voltage, generated before and after, and voltage difference.

#### **METHODS**

This was conducted at Block 3, Purok Rosal, New Isabela, Tacurong City. The study used Complete Randomized Design with three treatments replicated three times.

#### **RESULTS**

Results of the study showed that all the three treatments were comparable to each other. In terms of life span, treatment 1 with 1 LED gain the highest numerical mean of 40 hours followed by treatment 2 (2 LED light) and treatment 3 (3 LED light) with 36 and 34 hours respectively. As of its sensitivity, treatment was more sensitive compared to the other 2 treatments. However, in term of voltage generated before treatment 2 has the highest numerical mean of 9.74 volts while its voltage after, treatment 3 gained the highest numerical mean of 6.44 volts. Moreover, treatment 1 consumed much larger voltage with 3.42 volts.

#### **DISCUSSIONS**

Based on the findings treatment 1 with one LED light was comparable to treatment 2 with two LED lights and treatment 3 with three LED lights. This automatic night lamp is cost effective and can be materialize to be a public use. Moreover, in terms of its life span in hours, sensitivity in centimeters, voltage before and after and its voltage difference, all the three treatments have no significant difference with respect to each other.

**KEYWORDS:** LED LIGHT, AUTOMATIC, NIGHT LAMP

**SUBMISSION ID: R012-TACURO-0029**

## **Lemongrass (*Cymbopogon citratus*) Extract as a Mouthwash**

Heba Fsurkhana Dela Cruz, Looc Integrated School

### **Abstract**

#### **INTRODUCTION**

The researcher's goal is to help improve the oral hygiene of the other high school students. It may also be beneficial to students in Looc Integrated School that have bad breath. Therefore, the researcher conducted the study to evaluate if the lemongrass extract is feasible enough in making mouthwash.

#### **METHODS**

The researcher firstly prepared all the materials needed. Such as the lemongrass, cheesecloth, ice bag, distilled water and baking soda. The lemongrasses were washed and were cut into 20cm lengths. Then it was placed inside the cheesecloth and squeezed to get the extract. After that, 15 mL of distilled water was poured into the ice bag with the 1mL of lemongrass extract added. The 2.5g of baking soda was added. Lastly, mix all the ingredients and tightly seal the ice bag.

#### **RESULTS**

From the data gathered it was found out that the greater amount of lemongrass extract the more it was feasible in making mouthwash. Therefore, the researcher concluded that there is no significant difference between the different amount of lemongrass extract added to every sample in terms of color, odor and taste.

#### **DISCUSSIONS**

The results demonstrated that lemongrass extract could be used as a component in making mouthwash.

**KEYWORDS:** pH characteristics, lemongrass extract, mouthwash, analysis of variance

**SUBMISSION ID: R04A-CALAMB-0108**

**Level of Human Immunodeficiency Virus Awareness among Grade 11  
STEM in Olivarez College Tagaytay SY 2018-2019**

Viatrix N. Bayacal  
(Adviser: Pedro Jr. Sesma)

**Abstract**

**INTRODUCTION**

In Asia Pacific, the Philippines has become the country with the fastest growing HIV cases. According to the report of UNAIDS, the number of new HIV cases in the Philippines has increased in the past six years. Additionally, National Center for HIV/AIDS stated that 1 in 4 HIV positive individuals is 13 to 24 years old. This indicates that many high school students could possibly be a victim of the virus. Hence, it is vital that the students have enough knowledge towards the virus specifically, its nature, causes, effects etc. In line with this, the researcher conducted this study to determine the level of awareness on HIV in Olivarez College. The result of this study will be a basis for the curriculum enhancement for STEM Strand specifically on its subjects where HIV is tackled.

**METHODS**

This study utilized quantitative descriptive research design. The respondents of the study were the 196 Grade 11 STEM students in Olivarez College since they are most likely to be in the field of medicine in the future. In collecting data, the researcher adapted a questionnaire from the World Health Organization. The researcher used frequency, percentage, and mean score.

**RESULTS**

As the data gathered were summarized, the researchers arrived at the following findings: The statement "Having Sex with someone who is HIV infected and not using a barrier can transmit HIV," got the highest weighted mean of 3.4 interpreted as very high level. This may imply that the respondents are very aware that in order for them to prevent HIV they need barriers. According to the International Association of Providers of AIDS Care, safer sex guidelines are ways to reduce the risk of spreading HIV during sexual activity. The statement, "HIV can be cured by herbal medicine" got the lowest mean score of 2.04 interpreted as moderate level. Overall, the level of awareness towards HIV among Grade 11 STEM mean score is 3.01 verbally interpreted as High Level. This may imply that the respondents have sufficient knowledge towards HIV.

**DISCUSSIONS**

The Philippines certainly needs actions that can boost the youth's awareness towards the HIV. The result of this study stated that in Olivarez College, Grade 11 STEM students have enough knowledge towards the virus but it does not mean that the school administration should maintain their present actions on such. This may be the basis for the curriculum enhancement for STEM specifically on its subjects where HIV is tackled emphasizing the use of different herbal medicine as a cure for the virus.

**KEYWORDS:** Human Immunodeficiency Virus

**SUBMISSION ID:** R04A-CAVITP-0651

**Level of Practice of Superstitious Beliefs among the Students of Callejon National High School: Basis for Scientific Literacy Campaign**

Mayleen L. Luna, Callejon NHS  
(Adviser: Morlan Pasia)

**Abstract**

**INTRODUCTION**

Superstitious beliefs have probably been present among Filipinos since the beginning of time and have been passed on through the centuries. It is culturally shared and transmitted from generation to generation, despite the modern age of technology and scientific advancement. Thus, the interest of the researcher is to examine what superstitious beliefs are known and practiced by Grade 7 and 12 students of Callejon National High School in terms of burial, house rules and business and how it affects their way of living with an end view of proposing scientific literacy campaigns.

**METHODS**

This study made use of the descriptive research design with the use of survey-questionnaire as the main data-gathering instrument. The total respondents of the study are 66 where 36 students came from Grade 7 and 30 students from Grade 12 in Callejon National High School. Responses were interpreted using the following statistical tools: weighted mean, frequency, percentage, ranking and t-test for independent sample.

**RESULTS**

This study finds out that there is no significant difference between Grade 7 and 12 students concerning the level of awareness and practice of the different superstitious beliefs. Both groups are aware of the different superstitious beliefs associated to burial, house rules and business with a weighted mean of 2.55, 2.80 and 2.78, respectively. However, these beliefs are sometimes practiced only with a weighted mean of 2.24, 2.39 and 2.35 respectively. As to how it affects their way of life, most of the respondents agreed that it is connected with their behavior.

**DISCUSSIONS**

After all this modernization and enlightenment, superstitious beliefs still exist in society. Problem solving and critical thinking skills must be developed among the students. Through this study, scientific literacy campaigns are proposed for the advancement of science and technology.

**KEYWORDS:** Superstitious Beliefs, Scientific Literacy Campaign

**SUBMISSION ID:** R04A-QUEZON-0042

**Levels of Awareness and Understanding of Chemical Warning Signs  
among Selected Stem Students of Tanauan City National High School:  
Basis for an Action Plan**

Beverly S. Ignacio

**Abstract**

**INTRODUCTION**

Developments in science and technology change the world rapidly. Thus, primary objective of the society should be founding a science and research based information-society, which makes science and technology. One of the best places where students can practice learning-by-doing is science labs at schools. In these labs, students may learn science subjects more effectively and discover basic concepts, principles and laws of science through experiments. Lab studies provide students to participate science activities learn scientific methods and appreciate it. Moreover, they let students observe and develop their ability to generate ideas and make comments. Students also develop their reasoning, critical thinking and problem solving abilities via lab studies (Kaptan, 2008).

**METHODS**

The study made use of a researcher made questionnaire that was subjected for modification and validation by experts before actual use. The study made use of frequency count to determine the number of responses in each item in the questionnaire. Percentage was used to determine what part of the respondents answered a particular item. Ranking will be used to determine the problems and the ways the teachers adopted in the absence of tools/equipment and materials. Weighted Mean was employed to determine the average response based on the weight of the chosen option. Chi square test was used to determine association between profile and their assessment, and Pearson r to ascertain correlation between level of awareness and level of understanding of the respondents.

**RESULTS**

These findings are parallel with the results of a case study done at Jimma University of Southwestern Ethiopia by Adane and Abeje (2012) which assessed students' familiarity and comprehension of chemical hazard warning signs at the Departments of Chemistry and Biology. The results of the study revealed that the majority of the respondents regarded that they were aware of the hazards of laboratory chemicals but with lower familiarity with hazard signs of laboratory chemicals.

**DISCUSSIONS**

This study was undertaken to assess the awareness of students about hazards and risks of laboratory chemicals and understanding of hazard warning signs of chemicals. The data gathered were statistically treated using percentage, ranking, weighted mean, chi square, and Pearson r.

KEYWORDS: THESIS

SUBMISSION ID: R04A-TANAUA-0203

## **Malunggay Leaves (*Moringa oleifera*) as an Antibacterial Soap**

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& Neil Andrei O. Esguerra, Department of Education - Batangas Province  
Science High School  
(Adviser: Angeline Pagkaliwangan)

### **Abstract**

#### **INTRODUCTION**

Many soaps that can be purchased commercially vary in ingredients and formulations. Most of them contain unwanted chemicals that cause skin irritations. Since Malunggay also called as *Moringa oleifera* is known for its abundance in vitamins and minerals, the researchers thought that it would be a good component in a soap. Based on the research, the malunggay contains a component called pterygospermin that makes it antibacterial. It also contains fats and alkali that are needed in conducting saponification.

#### **METHODS**

In the preparation of malunggay soap the following were used caustic soda lye, coconut oil and hot water, stirring rod, mortar and pestle, beaker, platform balance, container (soap mold) and graduated cylinder. Ordinary processes like heating stirring, grinding and the used of coconut oil were used. The following properties like pH level odor texture and effectiveness were tested. Respondents were used and devised rating scale to describe the properties and their preference. A pH meter was used in determining the pH level of the product. In testing the effectiveness, the cultured bacteria were used to determine how much of it was killed.

#### **RESULTS**

After the testing of its properties, the results were obtained and analyzed. The soap's pH level was concluded to be almost neutral which the same with the commercial products is. Its odor is unpleasant but tolerable but aromatic agents can be added to improve the product's odor. For the texture, the product had a neutral result, which is acceptable for a soap. The effectiveness of the soap was indicated by the 84% elimination of bacteria from a cultured setup. The cost is comparable to the commercial soaps.

#### **DISCUSSIONS**

Based on the gathered data, the product's odor does not smell good, but tolerable. This is significantly different from the commercial product. The texture was acceptable for a soap compared to the commercial one. The pH level of the soap is just the same as the commercial products. Lastly, the product killed 84% of the bacteria, which means that the product is effective for a soap.

**KEYWORDS:** malunggay, soap, pterygospermin, antibacterial

**SUBMISSION ID: R04A-BATANP-1090**

## **Mind Mapping Technique in Enhancing the Learning of Grade 9 Students in Atoms**

Eden Sanchez, DMDPNHS

### **Abstract**

#### **INTRODUCTION**

The "how" of teaching is now being given much significance in the educational setting. Teachers must learn different effective teaching techniques and strategies. They must know different practices or techniques that can stimulate students to enhance and enrich their learning experience. One of the techniques that teachers can employ is mind mapping. This technique is used in scientific community as tool for representing knowledge, using both knowledge and creativity that signifies academic achievement. In this study, the mind map was tested if it could enhance the learning of grade 9 students in the lessons of Atoms in Chemistry.

#### **METHODS**

Descriptive and experimental methods by applying pre-test - post-test control group design were utilized. The respondents consisted of sixty grade 9 students as well as twenty science teachers from different public high school in Mauban, Quezon. The selected students were grouped into two as control and experimental groups. The basis of grouping is their pre-test scores and previous grade in Science. The experimental group was given the treatment by using mind-mapping technique while the other group was subjected to conventional method in teaching science. Both groups were post tested and the experimental group and twenty science teachers were requested to answer the acceptability questionnaire of mind-mapping technique.

#### **RESULTS**

The profile of the experimental and control group in Science grade and pre-test scores have no significant difference. It signifies that the entrance knowledge of the respondents is the same. The post-test mean scores of the control and experimental group were 27.50 and 30.07 with a difference of 2.57. To determine the significant difference of posttest scores of control and experimental groups, a t - value of 2.48 was obtained. It was found out that mind-mapping has a significant effect in enhancing the learning of students. Therefore, the hypothesis is rejected at 0.05 level of significance. The mind-mapping technique as a whole received an overall weighted mean from the students and teachers of 3.64 with a descriptive rating of strongly acceptable. Both students and teachers strongly accept the mind-mapping technique as teaching tool in chemistry.

#### **DISCUSSIONS**

The result indicates that the mind-mapping technique is an effective tool in teaching atoms and it is commendable among students and science teachers. Science teachers, to enhance students learning, can use it. Other mind maps can also be developed for other disciplines to facilitate learning and develop a more holistic student.

**KEYWORDS:** mind-mapping technique, enhancing, learning, atoms

**SUBMISSION ID:** R04A-QUEZON-0354



**Molluscicidal Activity on Golden Kuhol Applied With Ipil-Ipil Leaves (*Leucaena glauca* L.), Makahiya (*Mimosa pudica*) and Guava (*Psidium guajava* L.)**

Marivic Alampayan, Department of Education  
(Adviser: Marivic Alampayan)

**Abstract**

**INTRODUCTION**

The golden apple snail, popularly known as "golden kuhol" [*Pomacea canaliculata* Lamarck], was introduced into the Philippines between 1982 and 1984. It came from South America (Brazil and Argentina) via Taiwan. Its high nutritive value as food for human beings and farm animals generated interest among both public and private sectors to propagate the production of this organism. However, a few years after its introduction, the golden apple snail became a major pest of rice. It is known to be one of the farmer's worst enemy in the rice field. This pest can be very destructive by consuming the rice stalks and rice stuff thus, will lessen the farmer's harvest.

**METHODS**

One way of controlling this rampant infestation of this pest is to apply a natural way of eliminating it by using a plant molluscicide in the form of ipil-ipil, guava and Makahiya leaves extract applied to the golden kuhol to inhibit its laying of egg and killing the golden apple snail without affecting the plant host. The plant materials of ipil-ipil, guava and makahiya were gathered in a farm lot and were thoroughly washed and air-dried. This was brought to CSU Diagnostic laboratory for weighing of about 100 grams of each botanical plants (makahiya, ipil-ipil, guava). Then, place the weighted botanical plants in the Erlenmeyer flask. Add 320 ml of in each Erlenmeyer flask containing the botanical plants for 24 hours and covered by a aluminum foil. After soaking the plant samples, this was then filtered and the sample extracts using the filter paper, funnel and beaker. Put the filtered extract in the cylinder and then place it in the hot plate. Using the hot plate let the extract be heated with a temperature of 450Â°C within 30 minutes. After 30 minutes, allow the extract to cool down. Then label and store for application on the mortality rate of snails.

**RESULTS**

The study shows the effectivity of botanical plants as molluscicide with the golden kuhol applied with different time interval of 10 minutes, 20 minutes and 30 minutes and different concentrations of 5%, 7.5% and 10% of extract. Mortality rate was computed within this time interval, it was found out that guava leaves extract was the most effective, followed by ipil-ipil leaves extract, and the least among the three botanical plant is the makahiya leaves.

**DISCUSSIONS**

Guava is the most potent hence tannins and saponins were abundantly present, ipil-ipil is abundantly present in saponins and moderately abundant with tannins. Meanwhile, makahiya has moderately presence saponins and slightly present in tannins. Thus, it shows that the plant samples had a molluscicidal activity especially saponins according to some researchers the interaction between plants and phytophagous insects are multiple particularly those focused on toxicity of certain substances toward insects. This toxicity appears primarily in the interference with the feeding behavior, which makes it a good pesticide.

**KEYWORDS:** Golden Apple Snail, Tannins, Saponins

**SUBMISSION ID: R013-SURSUR-0217**

## **Multimodality in the 21st Century: Understanding Elementary Teachers' Lived Experience in Teaching Science**

Michael Romera, Department of Education - Cavite

### **Abstract**

#### **INTRODUCTION**

Educators and curriculum designers in the 21st century seem to highlight a significant concern and opportunities in incorporating educational technologies and other multimedia platforms to present various representations of content (text, video, audio, images, interactive elements among others) so as to cater more effectively to the different learning styles of students from different cultural and societal backgrounds. For this matter, the researcher undertook this study to describe and understand the lived experience of science teachers in utilizing multimodality in their classes.

#### **METHODS**

The research pertains to how participants' made sense of multimodality in the teaching and learning process of Science. This study is about the lived experiences in utilizing multimodality in their Science classes and

#### **RESULTS**

The study, employing psychological phenomenology, used the participants' verbatim responses. This analysis resulted in seven themes: (1) Integral Means to Learning; (2) A Challenger to Teachers and Learners; (3) Improved Learning Experience; (4) Changing Standpoint; (5) Availability of Time, Space and Materials Calls for Concern; (6) Getting Acquainted with Modern Means of Learning; and (7) A Critical Eye and Mind for Suitability) which were categorized into textural (what) and structural (how) descriptions of the phenomenon.

#### **DISCUSSIONS**

The study concluded that utilizing multimodality in Science classrooms is integral means to learning, serves as a challenger to both teachers and learners, improves learning experience, and changes the standpoint of Science educators in their profession. In addition, using multimodality stresses the availability of teaching and learning materials and enough time and space for preparation and execution.

**KEYWORDS:** Incorporating technologies and other multimedia platforms to cater needs of learners

**SUBMISSION ID: R04A-CAVITP-0990**

**Natural Topical Treatment For Mange and Tick Infestation on Dogs  
Using Coconut (*Cocos nucifera*) Oil and Spent Barako Coffee (*Coffea  
liberica*) Grounds**

Pamela G. Parole, Camp Vicente Lim Integrated School  
(Adviser: Leandro De Luna)

**Abstract**

**INTRODUCTION**

Dog owners want their pets to be clean, healthy and comfortable. Having a good hygiene plays a vital role in accomplishing this goal. Due to some reasons, there are instances that are inevitable such as insect bites, allergies, and excessive scratching that can lead to irritations and discomfort of the dogs. These can lead to infections. Knowing how to maintain the dog's skin and fur can prevent these problems. A natural ingredient found to be helpful in treating pests and parasites is coconut oil. According to Fife (2015), coconut oil is loaded with Medium Chain Fatty Acids (MCFA), which can defend animals from these harmful microorganisms. Coffee in general, acts as an antioxidant because of the presence of phenolic compounds and caffeine. The role of these antioxidants is believed to be considered essential to accelerate the healing of a wound. With these, the researcher was intrigued to make a natural topical treatment for mange and tick infestations in dogs using coconut oil and spent coffee grounds.

**METHODS**

The two key ingredients used are coconut (*Cocos nucifera*) oil and spent barako coffee (*Coffea liberica*) grounds. The oil from the coconuts was extracted using the cold pressed method. Moreover, the spent coffee grounds were obtained from a fast food restaurant. They were mixed in a 1:1 ratio and were put on glass jars. The product was applied to three dogs: one with mange and two with ticks whose ages range from 12-24months, for 14 consecutive days. The test for its effectiveness is determined by the reduction/elimination of ticks, healing progress of wounds, and physical changes observed on the dogs after the treatment. The product was also compared to a store-bought treatment and undergone trials.

**RESULTS**

Significant changes were already observed on the first week of application in terms of the reduction/elimination of ticks, healing progress of wounds, and physical changes. Additionally, the effectiveness of the product was found to be almost the same as the store-bought treatment as shown in the trials which measured the time for the ticks to be eliminated.

**DISCUSSIONS**

The result of the study indicates that coconut oil and spent barako coffee grounds are both effective ingredients against mange and tick infestation. Due to the availability and affordability of these ingredients, dog owners can now switch to an effective treatment that will not cause them too much.

**KEYWORDS:** Coconut oil, spent barako coffee grounds, mange, tick infestation, dogs

**SUBMISSION ID: R04A-CALAMB-0036**

## **Neem Repellent Lotion**

Ma. Solita S. Muya, Putingkahoy Elementary School

### **Abstract**

#### **INTRODUCTION**

Neem tree, *Azadiracta indica* is considered the "village pharmacy" because of its numerous uses in healing different diseases. All of its part can e used to treat any kind of diseases ranging from cancer to skin infections. This study aimed to test the affectivity of neem leaves made as lotion in repelling insects especially mosquitoes. Report shows that dengue hemorrhagic fever is on the rise killing children. This is cause by *Aedes aegypti* mosquitoes.

#### **METHODS**

To make lotion, neem leaves was extracted using a blender and filtered using clean cheesecloth. The extracted juice was combined with 250 ml of water 15 ml of borax. 375ml of olive oil with emulsifying wax steric acid, ilang - illang, lecithin and vitamin E was added to the water mixture. The finished product was subjected to evaluation for their color, odor, viscosity effectively in preventing mosquito bites, time for the lotion to take effect, general acceptability, for allergic reactions and the cost. Thirty (30) respondents aged 11-54 years old were used to test the lotion.

#### **RESULTS**

Result showed that using neem repellent lotion ward off mosquitoes for about 40 minutes or more. It was also as effective as the commercial off lotion with little qualitative differences. In addition, the finished product proves to be cheaper than the commercial off lotion with saving of P63.87

#### **DISCUSSIONS**

As compare to commercial off lotion, neem lotion is safer because it does not contain harmful substance.

**KEYWORDS:** INVESTIGATORY RESEARCH: REEM REPELLENT LOTION

**SUBMISSION ID: R04A-CAVITP-1379**

## **New Improved Dragon Fruit Soap with Pandan Extract**

Celia Espineli, Tambo Munti Kulit Elementary School

### **Abstract**

#### **INTRODUCTION**

Bath soap, a cleansing agent, is formed by the reaction of alkali such as sodium hydroxide with animal fat or vegetable oil. Because of the awareness of the people on the cleanliness of their bodies, some of the bath soap manufacturers tried to increase the soap's effectiveness and quality. Since dragon fruit stem contains oil, there is a possibility that dragon fruit extract can be used in the manufacture of bath soap. Dragon fruit soap serves as a storehouse of many health benefits. It essentially serves as natural moisturizer as it contains about 80 percent of water and comes packed with antioxidants, vitamins and nutrients, which can be beneficial for overall health and skin related problems, including, signs of aging, acne, and sunburn. The fruit is loaded with vitamin B3 that enable it to soothe sunburn skin and provide instant relief from inflammation, redness and itchiness caused by harsh ultra-violet rays. It is said that dragon fruit is amazing for acne-prone skin and works wonders for inflamed skin.

#### **METHODS**

Extract oil of dragon fruit and pandan leaves for dragon fruit soap. Prepare the lye by dissolving 1 kg Caustic Soda (sodium hydroxide) in 2 L water cool room temperature. Mix thoroughly the coconut oil, pandan leaves extract, lye, dragon fruit extract and lime in a plastic container using electric mixer. Mold the mixture in an improvised molder. Set aside for 4 hours, then cut the soap into a required shape. Finally wrap the soap with white transparent plastic.

#### **RESULTS**

Over-all mean acceptability among four groups of respondents, Treatment 3 got a mean score of 4.16, which was qualitatively rated as acceptable. Moreover, the best proportion acceptable to use in preparation of dragon fruit soap with pandan extract was 500 ml dragon fruit extract, 15 ml lime, 15 ml pandan extract, 600 ml lye and 1.2 L coconut oil.

#### **DISCUSSIONS**

The use of dragon fruit extract was acceptable in the production of dragon fruit soap with pandan extract. Since the stem of dragon fruit contains oil, the researchers found out that this oil could be extracted and used in the production of bath soap. The researchers also found out that dragon fruit soap with pandan extract can moisturize and whitens skin. It is also proven that it can prevent aging and can regenerate cell. There is a good possibility of using dragon fruit soap because wide group of respondents accepted it.

**KEYWORDS:** DRAGON FRUIT, PANDAN, SOAP, EXTRACT, INVESTIGATORY

**SUBMISSION ID: R04A-CAVTP-1168**

**NIJI-SHIKI MAZE: A Mathematical Puzzle in Developing Skills on Solving Quadratic Equations of Grade 9 Students of Camarines Norte National High School.**

Liamme Angelique Rio Silva, Camarines Norte National HS

**Abstract**

**INTRODUCTION**

Mathematics is a science of numbers, and quantities between them and always been considered as a tough subject. Therefore, learning concepts and acquiring skills must be entertaining and unique compared to usual method of chalk and talk, so that students will be more interested to appreciate difficulties in Mathematics. Children and students give a lot of time in solving equations while incorporating puzzles and mazes are quite fun to play, hence a useful learning tool. These insights gave the researchers to combine puzzles in solving quadratic equations. Thus, Niji-Shiki Maze, a mathematical puzzle was conceptualized.

**METHODS**

Descriptive-evaluative research design was utilized in the study. The population and respondents were chosen through nonrandom purposive sampling. They were two sections of Science and Technology Engineering Class of CNNHS divided into control and experimental group, 30 students each. Utilization of research instrument through conduct of pre-test and posttest as well as 5-Point survey questionnaire followed. Data gathering, computation, and analysis of data were conducted. Means, MPL's, SD, computed T-Value and grand weighted mean were the statistical tools used and served as numerical facts to significant difference and level of satisfaction of the respondents on the NIJI-SHIKI MAZE puzzle in developing knowledge and skills on solving quadratic equations.

**RESULTS**

The accurate computation is in the control group, the mean difference is 5.33, the SD is 3.50, the computed T-value is 8.34, and the Tabulated T-value is 2.043, while on the experimental group, the mean difference is 12.03, the SD is 3.40, the computed T-value is 38.60, and the Tabulated T-value is 2.043. Having the grand weighted mean of level of appreciation of 4.706, which is very highly satisfied.

**DISCUSSIONS**

The tabulated data clearly shows that t computed T-Value of 38.60 of Experimental group is higher than the T-value of 8.34 of the Control group and likewise greater than the tabulated T-value of 2.043. Hence, shows that puzzle is significant to the development of KSA on solving quadratic equations. Similarly, grand weighted mean of 4.706 revealed that respondents are highly satisfied. Therefore, the conclusion is that NIJI-SHIKI MAZE is significant tool in increasing academic performance of the students in Mathematics.

**KEYWORDS:** Solving Quadratic Equations in a fun and easier way.

**SUBMISSION ID: R005-CAMNOR-0031**

## **Okra Seeds: Alternative Coffee**

Arlyn Buela, Mabini Central School

### **Abstract**

#### **INTRODUCTION**

From early morning activities to late night projects, coffee has proved its presence to be most helpful to a person in need of a boost (Gunnars, 2015). The mildly stimulating effect of the caffeine in coffee gets people going for the day or helps one to extend it, which is the most evident reason on why the public patronizes it.

#### **METHODS**

This study, "Okra Seeds as Alternative Ingredient of Coffee" uses an exploratory research. This study aims to explore the research questions regarding the feasibility of okra seeds as substitute to coffee beans and to better understand the problem. According to Business Dictionary, this type of research is a method of collecting data for topics with currently limited information. In other words, this type of research study is primarily focused on discovering newly gained facts through the process of investigating, experimenting, interviewing, and the like. This approach was ideal to ascertain if *Abelmoschus esculentus*, specifically its seed, is feasible as an alternative coffee ingredient and can be an alternative coffee altogether.

#### **RESULTS**

There are many components of commercialized coffee such as caffeine, linoleic acid, trigonelline, chlorogenic acids, cafestol and kahweol (diterpines), carbohydrates, protein, peptides, amino acids, minerals, and lipids. These chemical compounds all exhibit certain properties, which contribute to the taste, color, aroma, and health effects of coffee. Half of the helpful components of coffee, such as carbohydrates, linoleic acid, lipids, protein, peptides and amino acids, are also present in okra seeds. Nevertheless, with the absence of caffeine in okra, the health benefits of these components of coffee can work more efficiently. To produce coffee from okra seeds, there are certain steps that can be followed with proper execution. The researchers made observations and analyzed the coffee.

#### **DISCUSSIONS**

Like carbohydrates, proteins found in okra seeds are necessary for maintaining good health and providing energy. It helps with tissue repair and supports the immune system as well. There are minerals present in okra seeds namely potassium and magnesium. Potassium is used to build muscles and break down carbohydrates into energy while magnesium is essential for protein synthesis and it assists with the contraction and relaxation of muscles.

Those chemical compounds found in both plants prove the feasibility of okra seeds as alternative ingredient of coffee.

**KEYWORDS:** Caffeine, Trigonelline, Coffee, science investigatory project, alternative

**SUBMISSION ID: R04A-BATANP-1149**

**Oregano (*Origanum vulgare*) Leaves and Neem Tree (*Azadirachta indica*) Leaves Extract as a Component in Making Hand and Body Soap**

Lara Ayezza Ibardaloza, Looc Integrated School

**Abstract**

**INTRODUCTION**

Air pollutants have free radicals, which, usually occurs in car exhausts and industrial fumes. Free radicals from car exhausts is a source of Polycyclic hydrocarbons, that can lead to skin aging, inflammatory or allergic conditions such as fungal, ringworms, atopic dermatitis, psoriasis, acne, and skin cancer (Baudouin et al, 2002). In this research study the researcher aimed to produce a soap out of oregano leaves and neem tree leaves extract that can be beneficial to the community and as well as to its residence.

**METHODS**

In preparing the oregano leaves and neem tree leaves extract the leaves were washed and it was extracted and put on a five container. To prepare the soap, the oregano leaves and neem tree leaves extract were mixed. This was combined with the mixture of sodium hydroxide and essential oil and it was stirred and checked the temperature of the mixture, as the mixture cools, it was placed on a five container within 12 to 14 hours first and was checked second it was placed within 1 month.

**RESULTS**

Based on the data gathered, it was found out that 100% of neem tree leaves extract, 50% of oregano and neem tree leaves extract, 75% of oregano leaves extract, 25% of neem tree leaves extract and 25% of oregano leaves extract, 75% of neem tree leaves extract gained an acceptable results based on the standard of the soap the characteristics in terms of color, odor, texture and pH level, whereas the 100% of oregano leaves extract are only acceptable in terms of color, texture and pH level. In addition, in terms of the analysis of variance, there is no significant difference between the different samples of oregano leaves and neem tree leaves soap in terms of color, odor, and texture.

**DISCUSSIONS**

The results demonstrated that the greater and same amount of oregano leaves and neem tree leaves extract the more it possess the characteristics of a good quality soap in terms of color, odor, texture, and pH level.

**KEYWORDS:** Oregano leave, Neem tree leaves, pH level, soap, Analysis of Variance

**SUBMISSION ID: R04A-CALAMB-0107**



## **Pansin Lemongrass (*Cymbopogon citratus*) Insectishield**

Carren Balitostos, AMARE

### **Abstract**

#### **INTRODUCTION**

Majority of the cases of insect related diseases are in National Capital Region (NCR), Central Luzon and CALABARZON. Last 2015, the provincial government of Cavite declared a province-wide dengue outbreak. In 2016, there were a total 25 deaths and 5,121 cases in the province. In 2017, a total of 27 dengue-related deaths and 6,129 cases were reported in the province's upland and lowland districts. On 2018, The Provincial Epidemiology Surveillance Unit (PESU) confirmed the dengue outbreak in some areas in Cavite province. The PESU said the cases recorded from Morbidity Weeks 1 to 9 were higher by 64 percent as compared with the same period in 2017 with three deaths and 850 cases. Fatalities were reported in Tanza and one each in Dasmariñas City and the towns of Silang and Alfonso in the first nine weeks of 2018. The existing insect related diseases, made us to create an effective repellent that can be an alternative to commercially sold ones, which can also help solve health, economic and environmental problems.

#### **METHODS**

An experimental method was used. Using different amount of lemongrass, we performed an experiment creating an alternative insect repellent that works as good as commercially sold repellents. It undergoes procedures that will not harm the environment.

#### **RESULTS**

Three trials were conducted in making lemongrass repellent. The lemongrass repellent was tested for its capability to repel insects using candies without lemongrass repellent and candies sprayed with the product from the three experiments. The first trial did not produce the strong smell of lemongrass, the second trial has achieved the lemongrass smell and it repels some of the ants. Third trial was conducted to prove that lemon grass can really be used as an ingredient in making insect repellent and it can really repel insects. When the product (third trial) is used or sprayed, most of the ants do not come closer. Some insects move close, but immediately flee afterwards.

#### **DISCUSSIONS**

In this investigatory project, we formulated an organic insect repellent. We found out that the more amount of lemongrass the more effective it is as an insect repellent.

**KEYWORDS:** natural, alternative

**SUBMISSION ID: R04A-CAVITP-1021**

## **Parental Involvement through "Anak Ko, Sagot Ko" and the Academic Performance in Science of Grade-8 Students**

Alexis Matito & Cristine Joy C. Togonon, Cabacungan NHS

### **Abstract**

#### **INTRODUCTION**

The intervention "Anak Ko, Sagot Ko" refers to parental involvement on the children's educational aspect, especially on their academic performance. Parental involvement on the other hand, refers to a situation that directly involve parents to their children's education and that they fulfill their duties and responsibilities to their children. This study employed the use of descriptive-correlation method to determine the relationship between the "Anak ko, Sagot ko" intervention and academic performance of the low-performing Grade-8 students of Cabacungan National High School in Cabacungan, Barobo, Surigao Del Sur this School Year 2018-2019. It follows the purposive sampling procedure, and uses t-Test and Mean statistical tool to analyze the data. Results showed that there is a significant correlation of the said intervention on the academic performance of the respondents.

#### **METHODS**

This study employed the use of Quantitative method in analyzing the data. The researchers identify the respondents through purposive sampling method. These respondents are the 20 Grade-8 students, who have low-ratings on the first quarter of the S.Y. 2018-2019, presently enroll in Cabacungan National High School.

#### **RESULTS**

Results showed that there is an increase of the performance of the respondents from the first quarter to third quarter because of the implementation of "AKSK". It also reveals the significant correlation of the said intervention to the academic performance of the students.

#### **DISCUSSIONS**

Therefore, the "AKSK" has a positive impact to the students showing the increase of their academic performance. This further shows that parental involvement is necessary to children's education. The findings of this study give a significant mindfulness to the school authorities, to the teachers, and to the parents in implementing the said intervention for the benefits of the students. This will help the students to attain higher grades and therefore to be successful in their academic performance.

**KEYWORDS:** Parental Involvement, Academic Performance, Intervention, and Benefits

**SUBMISSION ID: R013-SURSUR-0274**

## **Parents' Perceived Effectiveness of the Extent Use of Social Media in Science Instruction**

Sarah Jane C. Zepeda, Sirang Lupa Elementary School  
(Adviser: Sarah Jane Zepeda)

### **Abstract**

#### **INTRODUCTION**

Social media would allow students to create and test knowledge claims. Social media would extend communication networks, provide immediate access to information, and facilitate new forms of creative expression. Teachers are best situated to influence students' use of social media for learning purposes when they have an understanding of students' social media practices for learning and can leverage and/or support students to develop the ability to benefit from the high levels of connectivity.

#### **METHODS**

The researchers used the descriptive method type of research to acquire accurate, valid, and adequate facts and data for the study. The collection of data was done with the use of survey questionnaire. It was used to identify effectiveness of social media in science instruction as well as the observation of the parents regarding the use of social media in instruction.

#### **RESULTS**

Results revealed that very often science teachers used social media in science instruction. Parents perceived many challenges met by their children using social media in teaching Science. Specifically, their children became very dependent on social media, only browsing the news feed but not studying. Parents also perceive their children to spend more time with their gadgets or computers rather than on their books, and are visiting other social media platforms rather than focusing only on the assigned activities since they interpreted it having great extent.

#### **DISCUSSIONS**

It can be seen that social media is useful in studying science since schools begin to use Facebook groups to communicate with parents through their children activities. Social media is a tool that should be utilized by the teacher; it improved the communication skills of the students through chatting and it updates the development of the technology for instruction.

**KEYWORDS:** Social Media, Science Instruction, Students' Performance, Parent's Perception

**SUBMISSION ID: R04A-BATANC-0471**

**Perceived Impact of Quarterly Scheme Rotation Focused on the  
Attitude of Students Towards Learning Science in Lumbangan National  
High School, Nasugbu Batangas**

Josephine T. Cello, Department of Education

**Abstract**

**INTRODUCTION**

Quarterly Scheme Rotation (QSR) refers to the teacher's quarterly scheduling of class assignment. They are grouped according to their field of specialization or to the science subject they are comfortable to teach. The main purpose of the Quarterly Scheme Rotation is to cope with the spiral approach of K-12 curriculum, which aims to enhance the science education of the country. This study aimed to assess the impact of Quarterly Scheme Rotation of Science teachers focused on the attitude of students in Lumbangan National High School.

**METHODS**

This study utilized the descriptive-correlational method of research. The researcher prepared a questionnaire as the main instrument to determine the impact of quarterly scheme rotation on the attitude of three hundred ninety (390) Grade 8, 9 and 10 students towards learning Science in Lumbangan National High School.

**RESULTS**

The study revealed that there was a great impact of quarterly scheme rotation of Science teachers because it affects and influence the learners' attitude towards learning Science and their attitude towards the teachers. Intrinsic motivation of the learners influenced themselves to enhance the academic performance in the subject. The good interpersonal attitude of the learners toward the teachers gained thru self-efficacy. Learners' attitude towards the teacher, their final grades, and sex and grade level showed significant correlation with the students' attitude towards learning Science. Only age showed no significant correlation with the learners' attitude towards learning science.

**DISCUSSIONS**

The results suggested that teachers on Secondary schools should implement the Quarterly Scheme Rotation of teachers to test its effectiveness. The school administration should give full support to the teachers by providing sufficient and suitable implementation plan for effective instruction and best learning of the learners. Additionally, implementation of the scheme rotation model is highly recommended to serve as framework in dealing with other studies pertaining to quarter scheme rotation of teachers in Science.

**KEYWORDS:** Quarterly Scheme Rotation, Spiral Progression, Impact, Learners' Attitude

**SUBMISSION ID: R04A-BATANP-1441**

**Perceived Response of Grade 7 Special Science Class Students at  
Batangas National High School to Alternative Assessments**

Leovil Perez, Batangas National High School

**Abstract**

**INTRODUCTION**

This study aimed to determine the different alternative assessments to evaluate students' outcomes in Science with the end- view of proposing variety of assessment methods to enhance students' learning outcomes in the said subject. Specifically, this likewise explored the different alternative assessments employed by teachers to evaluate students' learning outcomes in Science, their observations in their academic performance and the perceived effects of these alternative assessments on regard to students' learning outcomes.

**METHODS**

Research design was descriptive with the use of a researcher-constructed questionnaire as the main data gathering instrument and supplemented with on-hand record of the activities and strategies given to students in evaluating their academic performance. Statistical tools used were weighted mean and ranking.

**RESULTS**

Findings revealed that teachers of special science class used different assessment strategies to evaluate students' performance in science in which foremost on these assessments were on performance tests followed by self-assessment and open-ended questions and making inferences. Likewise, results revealed that majority of teachers employed the strategy of asking students questions to assess the latter's performance in class; while least utilized is the structured observation. It was also shown that students have a positive response on the different alternative assessments that their teachers have utilized in evaluating their performance and lastly, different alternative assessments were proposed to evaluate students performances in science class.

**DISCUSSIONS**

The researcher recommended that the current assessments be evaluated to see how well they meet the needs of students and how well they assess the knowledge and skills of learners in science. It is necessary to ensure that a collection of evidence approach is included in the final assessment that uses tasks that are part of students' coursework connected to the standards of the course syllabus; and brainstorming and collaborating with other teachers could be done for a better and wider implementation of alternative assessments for students.

**KEYWORDS:** Special Science Class, Perceived, Response, Alternative. Assessment

**SUBMISSION ID: R04A-BATANC-0305**

**PET (Polyethylene Terephthalate) Bottle Reverse Vending Machine: An Innovative Way of Reducing the Expanding Garbage Problem and its Environmental Impact in Plaridel Integrated National High School**

Aivanchester P. Dorado, Ella Marie S. Ricalde, & Joan C. Maldo, Plaridel  
Integrated NHS  
(Adviser: Shiela C. Calinga)

**Abstract**

**INTRODUCTION**

The environmental benefits of reusing our waste are known, this long-standing, small-scale recycling is now getting a modern revamp with the widespread introduction of reverse vending machines. Reverse vending machines are so called because they accept used containers and then pay out a certain amount of cash depending on the size of the deposit-the opposite of a traditional vending machine. The researchers conducted this Science Investigatory Project with the help and support of our science teacher, which aims to reduce the amount of garbage by recycling bottles and maintain the cleanliness of our school.

**METHODS**

A descriptive research design was used in this study. The researchers made questionnaires for 25 selected students and 25 faculty members of Plaridel Integrated National High School who were purposively selected as source of information because they were able to express their perception or answers on the effectiveness of PET Bottle Reverse Vending Machine.

**RESULTS**

Most of the respondents viewed that the machine with the ability to change bottle into a coin is very satisfactory. It can help the environment to reduce bottles in the surroundings. It really works well even though there are some problems because of the sensitivity of some parts, but it was successfully done. Most of the students and teachers were amazed because of its uniqueness and its ability to replace plastic bottle into coins and recognize the plastic bottle and not like metals and glass bottles. All respondents agreed that the PET (Polyethylene Terephthalate) Bottle Reverse Vending Machine has been beneficial to school as it reduced the expanding garbage problem to community by 20%.

**DISCUSSIONS**

Based on the results, sensitivity of the parts of machine could be improved more to ensure efficiency. Researchers could explore different sizes of bottle that can be inserted in the machine. This may be a small step but this may be one of the solutions to contribute in reducing the expanding garbage problem. The advantage of this machine is that people will be motivated in reducing tons of garbage particularly bottles.

**KEYWORDS:** PET (Polyethylene Terephthalate), Bottle Reverse Vending Machine, Expanding Garbage Problem, Environmental Impact

**SUBMISSION ID: R04A-LAGUNA-0236**

## **Physicochemical and Microbiological Contaminants of Riverside Drinking Water: Insights and Implications to Health Education**

Jenly Moran, Northern Canaman High School

### **Abstract**

#### **INTRODUCTION**

Water is the indispensable ingredient for the continued existence of all life forms on Earth. This study provides information on the analysis of the physicochemical and microbiological contaminants to validate the potability of water from the riverside feeder barangays of Northern Canaman High School.

#### **METHODS**

Quantitative method was used to determine the physicochemical and microbiological contaminants and their levels in the water sources. Qualitative method was employed to qualify the responses of the respondents that include health professionals, LGU officials, barangay officials, school officials and community residents in the structured interview.

#### **RESULTS**

(1) On physical contaminants, in terms of turbidity, Station A (0.89 NTU), Station B (2.90 NTU) and Station C (7.27 NTU). In terms of color, Station A (3 CU), Station B (6 CU) and Station C (8 CU). In terms of odor, the three stations' sources of drinking water have No Objectionable Odor. In terms of pH level, Station A (7.78), Station B (7.52) and Station C (7.66); (2) along chemical contaminants, in terms of TDS, Station A (1.20 mg/l), Station B (1.71 mg/l) and Station C (1.36 mg/l). In terms of sulfate concentrations, Station A (76 mg/l), Station B (102 mg/l) and Station C (110 mg/l). In terms of iron concentrations, Station A (0.07 mg/l), Station B (0.08 mg/l) and Station C (0.05 mg/l); (3) along microbiological contaminants, in terms of HPC, Station A (34 CFU), Station B (25 CFU), and Station C (40 CFU). In terms of Total Coli forms, Station A (>8 MPN), Station B (>8 MPN), and Station C (>8 MPN). In terms of Fecal Coli forms, Station A (>8 MPN), Station B (8 MPN), and Station C (>8 MPN); (4) Some of the common water - borne health related problems experienced by the respondents includes stomach ache (76%), abdominal discomfort (62%), diarrhea (54%), vomiting (20%), fever (9%), headache (5%), and nausea (3%).

#### **DISCUSSIONS**

The study concluded that: (1) Generally, all the three barangays' sources of drinking water were safe under the physical contaminants; (2) All the three feeder barangays' sources of drinking water were safe under the chemical contaminants but do not mean that they were safe for drinking purposes; (3) The three feeder barangays' sources of drinking water were not safe under the microbiological contaminants; and (4) The drinking water sources of the three feeder barangays were contaminated with impurities that caused some water - borne health related problems;

**KEYWORDS:** Physicochemical; Microbiological; Drinking Water; Insights; Implications; Health Education

**SUBMISSION ID: R005-CAMSUR-0145**

**Phytochemical Screening and Allelopathic Activities of Buyo-Buyo  
(*Piper aduncum*) Extract on the Mitotic Cell Division of Onion**

Bobbie Andrea Antaran

**Abstract**

**INTRODUCTION**

*Piper aduncum*, or buyo-buyo (local), is 6-7 meters tall green shrub. Recently it was found showing allelopathic activities that generate problems on certain areas it was found including Sto. Nino, South Cotabato. The purpose of this study was to identify the phytochemicals present in buyo-buyo, determine its specific allelopathic chemicals, and observed its effect to onions' skins and root tips.

**METHODS**

The buyo-buyo extract was tested for phytochemical contents. Its effects to onions' skins and root tips were observed.

**RESULTS**

The buyo-buyo extract was proved to have alkaloids, anthraquinones. Flavonoids, saponins, and tannins phytochemicals. The cells of onions, which are exposed to buyo-buyo extract, are smaller and elongated. Some of the nuclei were also observed to move on the other side of the cell instead of remaining in the center. Cells tend to be disorganized as the nuclei were partially developed. The onions that served as the control are larger. They also look healthier compared to the exposed onions. The nuclei are compact and remained at the center of the cell. Some are also observed undergoing mitotic division. For the roots, it was found out that control roots stay healthy and intact while the treated root tips tend to stop cell dividing at the root tips, some undergo cell lysis and when exposed to a higher concentration of buyo-buyo extract, shrunk in size.

**DISCUSSIONS**

The buyo-buyo has been proved to have negative effects on the onions' skins and root tips. Its phytochemical compositions have been identified, thus making ways to control them in the future and suppress their negative impacts with the aid of additional studies, is already at hand.

**KEYWORDS:** PHYTOCHEMICAL SCREENING, ALLELOPATHIC, BUYO-BUYO EXTRACT, MITOTIC CELL DIVISION, ONION

**SUBMISSION ID: R012-TACURO-0025**



**Pili National High School Selected Junior High School Students'  
Personal Hygiene: An Assessment**

Ma. Lilany Barnedo

**Abstract**

**INTRODUCTION**

The simplest way to protect ourselves from illnesses is to practice personal hygiene. Minor actions matter from the second you wash your hand to the point when you clean your body. In addition, bathing is the basic hygiene that we carry out, but for some reasons, bathing alone is not enough. It is expected that an individual, especially one who has already reached the puberty stage will experience specific changes in his body.

**METHODS**

The researcher started disseminating information about the essence of practicing good hygiene in the form of a room-to-room campaign while discussing teenage personal hygiene using a practically economical substance (Tawas). The researcher explained how it would help them in improving personal hygiene through which the researcher introduced the use of "Tawas" and distributed the product to each respondent for testing. Classes of Grade 9- Diamond (30), Grade 9-Pearl (31), Grade 10-Einstein (32), and Grade10-Newton (34) were selected having a total of 127 students' respondents. To test the efficacy of the product, respondents were requested to use the distributed "Tawas" for personal hygiene testing was conducted where it revealed improved hygiene and academic participations in class.

**RESULTS**

Checking of odor personally achieved 88% in day 5 while evaluation by partner achieved 98% improvement in characteristics odor and the paleness of the uniform's armpit was eliminated using the Tawas. Therefore, results for better class performance being comfortable in eliminating the characteristic odor and the darkening coloration in the uniform's armpit add confidence and inspire students in class participation. Compared with the commonly used perfumed deodorant that results with hardening of uniform's armpit discoloration the use of Tawas found to be economical and effective.

**DISCUSSIONS**

Therefore, the researchers concluded the validity of the alternative hypothesis, for Tawas as an effective agent to help in lessening bad odor and stain colorations in students' uniform especially on armpit portion. Tawas had been proven through this study as a practically economical maintenance for personal hygiene in preventing body characteristic odor and as improvement in personal hygiene, results with improved academic performance level helped much students in coping up shyness in raising arms and characteristic body odor. This study significantly improved students' personal hygiene together with academic performance level that instills personal confidence among the respondents.

**KEYWORDS:** Hygiene, Tawas, Health

**SUBMISSION ID: R005-CAMSUR-0041**

**Plant Residues Organic Compound: It's Potential as Agar- Based  
Nutrient Media in In-Vitro Culture of Oyster Mushroom (*Pleurotus  
ostreatus*)**

Mika Yssa F. Marcelino

**Abstract**

**INTRODUCTION**

One very important issue that the Philippine is facing today is the disposition of agri-wastes. There are farmers who opted to burn agri-waste as disposition. The burning of these agri-wastes such as rice hull, rice straw, corncobs, cornhusks, palm oil empty bunch, and coco coir dust is pollution to the environment that contributes to climate change. These agricultural wastes can be recycled by maximizing their uses as well as minimizing the burning process which has harmful impact to our environment. It is on this premise that the researcher used these agri-wastes as artificial media in the cultivation of mushroom. Hence, this study was conducted.

**METHODS**

The growth of oyster mushroom (*P. ostreatus*) in in-vitro culture was conducted to evaluate its potential as influenced by the different crop residues organic compound as agar-based nutrient media. The study was laid out in a Complete randomized Design (CRD) with four (4) treatments replicated three (3) times. The different agri-wastes were collected from various farm areas in Tacurong City. These were cooked with agar then dispensed into petri plates with three duplicates each treatment. The *P. ostreatus* were sliced into small squares and each square was isolated at the center of the petri plates with different media. These were incubated in the dark room temperature until its full colonization. The mycelial growth of *P. ostreatus* in the different media was measured using Vernier caliper starting from 3 days after isolation until full colonization.

**RESULTS**

The different agar-based nutrients such as Water Hyacinth, Potato Dextrose Agar, and Palm Oil Empty Bunch can be a good substitute media for oyster mushroom production, since the substrate favors the growth and colonization of oyster mushroom (*P. ostreatus*) in in- vitro culture. However, Treatment 1 & 4 could be the two of the best alternatives since it colonized the media in a shortest period compared to other treatments. Further, this is more economical than using PDA. The cost analysis implies that T4 is more expensive culture media compared to different agar-based nutrients.

**DISCUSSIONS**

It is therefore recommended that T1 (Palm Oil Empty Bunch Agar) can be used as substitute culture media in in-vitro culture of *P. ostreatus*, the use of Water Hyacinth is also recommended in areas where Palm Oil Empty Bunch Agar is not available.

**KEYWORDS:** PLANT RESIDUES, AGAR, IN-VITRO, OYSTER MUSHROOM

**SUBMISSION ID: R012-TACURO-0019**

## **Plastic Bottle Control Practices of Tacurong National High School**

Bryan Canta

### **Abstract**

#### **INTRODUCTION**

Nowadays, most of the public schools are suffering from the average problem regarding with the plastic bottle waste. Principals, teachers, and student leaders tend to give the best of their attention out of this problem but sometimes they cannot manipulate the behavior of students in terms of giving care in our school environment. They might have and give their full encouragement, but sometimes the other students ignore this encouragement. Since then, plastic pollution is a massive and the same time an intensely personal school environmental problem. The incorrectly disposal of plastic bottles because we are unaware of the consequences may lead to destroy our mother nature. We should be responsible enough to use plastic bottles in order for us to control its effect in the near future.

#### **METHODS**

The study utilized the descriptive method using quantitative approach in gathering information about the present condition. This study employed the use of a questionnaire as a primary and research instrument to gather data. A random thirty students of Tacurong National High School Extension Campus are chosen as the respondents. The given data will be organized and will make an evaluation upon the plastic bottle control practices.

#### **RESULTS**

Based on the thirty respondents most of students in Tacurong National High School are always using plastic bottles, they are responsible to all the plastic bottles that they used and plastic bottles is not really important, some of the students are providing containers, it is really important that are school provide a separate trash bins for plastic bottles.

#### **DISCUSSIONS**

The result demonstrates that plastic bottles should be disposed in a nice manner and should be properly managed and used. Plastic bottles must have separate bins for easy and quick ways to get when it is going to recycle. To control the school climate we need to in usage or selling of beverages in plastic bottle in the school canteen. Instead of plastic bottle, we can use beverages in can or glass bottle.

**KEYWORDS:** plastic bottle, practices, control

**SUBMISSION ID: R012-TACURO-0004**

## **Plastic Consumption for Brick-Making**

Yson Abarintos, Mabini Central School

### **Abstract**

#### **INTRODUCTION**

Plastic is the general common term for a wide range of synthetic or semi synthetic organic materials suitable for the manufacture of industrial products. We live in the age of plastic bright, attractive, colorful, long-lasting, relatively inexpensive substances. Waste materials in the environment and the effective removal of wastes in the environment will leads to pollute our society our society. Techniques were used to reduce the waste but it was not hopeless. Therefore, the effective treatment of wastes is done in our project without affecting our environment in manufacture of bricks.

#### **METHODS**

The study makes use of exploratory research. Kowalczyk defines it as "the initial research into a hypothetical or theoretical idea. This is where a researcher has an idea or has observed something and seeks to understand more about it. An exploratory research project is an attempt to lay the groundwork that will lead to future studies, or determine if what is being observed might be explained by a currently existing theory.

#### **RESULTS**

Analysis and interpretation was being done for the experimentation 1. What is the difference between concrete brick and brick made from plastic? Bricks made from plastic are bricks having with concrete size and durable structure. It can absorb the water because of the plastic pores inside the bricks that makes it slump on the ground to prevent flood. 2. What is the effectiveness of the waste disposal project in school? Waste materials in school like plastic wrappers are in decreasing in number.

#### **DISCUSSIONS**

The continuing process of the bricks makes useful not only in the school but also in Mabini Community. Through the initiative and support of Local Government Unit the project is used in different facade in Mabini District. The bricks help to lessen the plastic in school as well as in the community and as a beautiful ground pavement in the surrounding.

**KEYWORDS:** beautification, plastic, recycle, renewable materials, science investigatory project.

**SUBMISSION ID: R04A-BATANP-1087**

## **Portable Hydropowered Generator: A Potential Power Technology**

Dennis E. Estrella Jr.

### **Abstract**

#### **INTRODUCTION**

The study entitled PORTABLE HYDROPOWERED GENERATOR: A POTENTIAL POWER TECHNOLOGY aimed to determine the capability of technology to answer power generation problems in terms of voltage, current, power, and energy. It aimed to design a generator that is hydro-powered, portable, and low cost. Furthermore, it identified water source that can produce more power and energy. The design of the technology was done at the Science Laboratory, Tacurong National High School, Tacurong City from April to September 2018.

#### **METHODS**

In making the portable hydro-powered generator, scrap metals, synchronous motors, sprockets and chains were used. The details of the construction of the portable hydro-powered generator were outlined in the Materials and Methods. Data were gathered from three different waterways such as river, canal and home gutter to determine the capability of the technology.

#### **RESULTS**

Flowing water from home gutter yielded the highest current with an average of 0.6A while water from the river produced the highest voltage with 75.96V. River obtained the highest power and energy with an average of 43 watts and 21.5Wh, respectively. Home gutter produced the highest frequency of 1.5Hz for its turbine and 0.45Hz for its motor.

#### **DISCUSSIONS**

Based on the findings, the three different waterways produce power and energy. Of the three waterways, river is the best water source of energy and electricity with the portable hydro-powered generator. In addition, based on the ANOVA the null hypothesis was rejected, hence the portable hydro-powered generator can become an alternative power technology.

**KEYWORDS:** PORTABLE, HYDROPOWERED GENERATOR, POTENTIAL POWER

**SUBMISSION ID: R012-TACURO-0022**

## **Portable Solar Water Purification System**

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Madinne, Pauline R. Tolentino, Department of Education - Batangas Province  
Science High School  
(Adviser: Angeline Pagkaliwangan)

### **Abstract**

#### **INTRODUCTION**

A huge portion of the vast waters surrounding the world has not been completely exposed for human use. However, the available water sources have been subjected to unwanted physical substances and because of this a large quantity of people nowadays are not capable of having an accessible clean water supply. This has been a serious cause for multiple diseases that affect the whole environment. In response to these problems, the researchers thought of a simple yet efficient way to contribute in cleansing existing unsanitary waters.

#### **METHODS**

In the making of such a device, the researchers have chosen to use stainless steel as a medium. One must be able to construct a box like figure made entirely out of stainless steel with a downspout in its four upper edges. The researchers used solar heat energy from the sun to evaporate the dirty water. As it is already indicated that the vapor caused will rise and make its way to the downspout. This would be act as a passage for the distilled water to another container to be filled with the resulting clean water. A stand would be necessary to elevate the distiller itself and to make sure the clean water would flow downwards. In order to test the product, the researcher added the dirty water into the container and let it soak under the heat of the sun and wait for a fixed number of hours.

#### **RESULTS**

Several attempts and trials were tested to accumulate results needed to know the product's inept ability to produce clean water. The resultant data gathered were noted and compared to that of the commercially available water distiller. The given data was enough to provide support for the proficiency of the product. Certain properties were also recorded and evaluated and it showed the potential of the product.

#### **DISCUSSIONS**

The product was capable of producing mere results that proves its ability to cleanse water. Even though the researchers were not able clean the water thoroughly, which includes the chemical properties that makes the water potable itself. Certain critical data was found that supports the hypothesis of the researchers. This will be a great help for others especially those who are in need of a clean water sanitation because it can be a temporary or maybe a permanent solution for the given problem.

**KEYWORDS:** Distillation, Unsanitary Waters, Solar Heat Energy

**SUBMISSION ID: R04A-BATANP-1104**

## **Potential Health Effects of Wi-Fi Radiation to the Chicken Embryonic Egg as an Animal Model**

John Paulo Florida

### **Abstract**

#### **INTRODUCTION**

Technology innovations are one of the latest trends to the society nowadays because it helps a lot to the people to communicate, learn, and etc. Although these technologies help the people, particularly, the Wi-Fi, but it gives harmful effect to the person that exposed a lot to this. In this study, the researcher investigated the possible health effects of Wi-Fi radiation (also called electromagnetic frequency) to the development of embryonic eggs from chicken.

#### **METHODS**

Two simple set-ups were used. The eggs are selected according to the fertilization and similarity of weights. The researcher provided a man-made improvised incubator with the same outcome with the commercialized one. Each set, the researcher placed three fertilized eggs and monitored it daily for 21 days. After this, the researcher placed one set-up near ten meters Wi-Fi range and the other one was placed about 100 meters away. In addition, the normal incubation was also used.

#### **RESULTS**

The researcher found out that the fertilized eggs exposed to the ten meters Wi-Fi range (1.6 to 6.5GHz frequency exposure) wasn't hatched (died) but the eggs away for about 100 meters (0.01 to 0.09 GHz frequency exposure) was hatched. Also, the results showed that the weight of eggs near ten meters was increase rapidly, from 30.0 grams average initial to 38.33 grams average final after 20 days (before hatching schedule). On the other hand, the eggs in the 100 meters Wi-Fi range also increased partially, from 30.0 grams average initial to 34.6 grams average final.

#### **DISCUSSIONS**

The results prove that Wi-Fi radiation has significant effects to the health and development of embryonic eggs. Living cells exposed for about 1.6 to 6.5 GHz of frequency dies. The experiment also proves that electromagnetic radiation frequency of 0.01 to 0.06 GHz has no significant effects to the embryonic eggs. For this reasons, the study proves that Wi-Fi radiation can boost up the cell division of embryonic eggs and living cells, causes massive gain of weight, but on the other side, radiation destructs the cells that causes death. Radiation frequency of 1.6 to 6.5 GHz radiation frequency is dangerous to living cells, particularly that it kills the cells.

**KEYWORDS:** Embryonic eggs, incubator, radiation, frequency, electromagnetic, Wi-Fi, Weight, GHz

**SUBMISSION ID: R04A-CALAMB-0081**

## **Powdered Egg Shell Tablets as Waste Acid Neutralizer**

Kirck John Anthony A. Pamposa III

### **Abstract**

#### **INTRODUCTION**

Cleaning is a very important task of removing anything that might cause contamination and disease to spread out. It is an important part of our daily lives. Cleaning is done everywhere, in homes, in schools, hospitals, and every institution. Since it is important, many things were developed to maintain cleanliness, tools, devices and solutions, which provide total disinfection-to clean especially using substances that kill germs and other disease-causing microbes. These chemical substances contain acids that can cause jarring. Cleaning solution found at home, schools and hospitals have acids. Because of the jarring effects of these acidic chemicals, even after it was diluted, many animals and plants are still affected. When these acidic solutions are washed through the sinks, comfort rooms, canals and sewers where many animals are drinking or being exposed, they eventually suffer tremendous injuries that can fatally kill them.

#### **METHODS**

The study utilized Completely Randomized Design or CRD. It was consisted of three treatments replicated three times. Eggshells were collected from the school canteen, cleaned, dried and powdered using the conventional method of mortar and pestle. It was then measured and mixed with commercial flour as binder and molded into tablets. Its capacity to neutralize acids was then tested by applying it into the most common acids used at home-sulfuric acid, muriatic acid and oxalic acid. The pH of the acids was taken before and after application.

#### **RESULTS**

PEST worked well in oxalic acid with an acid level of 4.14 before the application and turned the pH level to 6.57 with a mean difference of 2.44. However, it failed to neutralize the acidity of the oxalic acid. In sulfuric acid, after the application of PEST, it has a pH level of 6.97 and a mean increase of 1.61. Still, the Sulfuric Acid is nearly neutralized. On the other hand, muriatic acid before the PEST application has an acid level of 6.55 and 7.67 after the application. It has a mean difference of only 1.71; however, it successfully turned the acid to base level.

#### **DISCUSSIONS**

Results showed that PEST as acid neutralizer has the capacity to neutralize waste acids. Result implies that PEST is capable of neutralizing the acidity of Diluted battery solution, Diluted muriatic and Diluted oxalic solution.

**KEYWORDS:** POWDERED EGG SHELL TABLETS, WASTE ACID, NEUTRALIZER

**SUBMISSION ID:** R012-TACURO-0020



## **Powerbank from E-waste: Constructing a 220v Power Bank from Discarded Laptop Battery**

Bernard Van Silong, Manuel I. Santos Memorial National High School  
(Adviser: Mrs. Danica Ana E. Golfo Mr. Aristotle G. Villarina)

### **Abstract**

### **INTRODUCTION**

Garbage disposal is one of the problems of the country. Electronic waste like laptop batteries is one of those waste materials that should be given attention on proper disposal. There were tons electronic wastes being disposed and bring harm to the people residing near the site. In this study, we would like to lessen the electronic wastes and turn it to a useful device. The developed portable 220-power bank from discarded laptop lithium-ion battery was constructed to produce electricity for emergency purposes. The device's practical use during calamities where there will be no electricity would be recommended.

### **METHODS**

The study started with a layout plan of the device. It is followed by gathering of the needed materials for the project construction. The lithium-ion batteries were tested according to voltage and arranged in a series-parallel connection to achieve the desired voltage (12 V). Batteries were soldered and covered with masking tape that served as an insulator. An inverter was installed to convert 12 V of electricity to 220 V output. Then necessary wiring was installed for 5V USB charger output for cellphone charging, 220V AC output for appliances, 12V load terminal for 12V DC appliances, DC voltmeter and exhaust fan. Each output has individual switches for efficient voltage management. The chassis used in this device was an old case of microphone for portability that it could be carried anywhere in any situations.

### **RESULTS**

The developed device was subjected for actual battery run time testing on the common appliances and gadgets such as television, electric fan, laptop, projector and cell phone for charging purposes. Based on the results, the actual battery run time of constructed device shows a close result compared to the computed battery run time.

### **DISCUSSIONS**

Based on the result, the computed run time of 75 watts ceiling fan is 2.67 hours; 45 watts television is 4.44 hours; 170 watts projector is 1.18; 4 watts mobile phone is 50 hours and a 65 watts laptop is 3.08 hours. The formula of getting the total run time of power bank is  $r = 10 \times \text{Ampere Hour} / P$  (run time is equal to the product of 10 and Ampere Hour divided by power consumption in watts). It was observed that the gadget/appliances with smaller wattage consumed less electricity therefore, have longer run time. Thus, appliances with high wattage consumed shorter run time.

**KEYWORDS:** Discarded laptop, E - waste, Power bank

**SUBMISSION ID: R04A-RIZALP-0084**

## **Power of Science Vocabulary Words in Improving the Academic Performance of Grade V Pupils**

Jesussein Ricafrente, Cavite Association For Research Educators

### **Abstract**

#### **INTRODUCTION**

The main objective of this study was to determine the POWER OF SCIENCE vocabulary words in improving the academic performance of Grade V pupils of Tejeros Convention Elementary School Rosario, Cavite. Major components of literacy is vocabulary or the words employed by a language or is a field of knowledge, understanding, novel words, and concept is important for young students as they are confronted with a great deal of new terminology in the passages they read specially in content areas such as a Science is a discipline. This relies heavily on students, ability to understand new terms and concepts. A strong focus on vocabulary helps students understand and communicate using appropriate terminology, and the incorporation of imagery makes learning fun. Research has shown that words and text, which enable the formation of images, facilitate recall. This research discusses the relationship between science and literacy, vocabulary instruction within the science classroom, and the use of imagery to enhance this instruction.

#### **METHODS**

Descriptive method of research was utilized as well as teacher-made-vocabulary checklist and questionnaires to gather relevant/necessary data, which can be used for the purpose of study. Twenty three ( 23 ) male and Twenty three ( 23 ) females a total of 44 pupils . Weighted mean was computed to determine the distribution of the respondents' vocabulary level about the words used in reading text.

This study used descriptive method with observational studies, but they are not limited with observation as the data collection method. Case studies and surveys can also be specified as popular data collection methods. Descriptive research gives a better and deeper understanding of a phenomenon based on an in depth study of the phenomenon.

#### **RESULTS**

After analyzing the results of the study, the proponent arrived to the following results.

1. The Science vocabulary level of the students of Tejeros Convention Elementary School has a weighted mean of 84 .20. Their general average is proficient.

2. There is power in building the science vocabulary words because the weighted mean increases from 7340 to 84.20.

#### **DISCUSSIONS**

The worker of this study realized that vocabulary words for science should be strengthened for effective teaching.

**KEYWORDS:** power, academic performance

**SUBMISSION ID:** R04A-CAVITP-1711

## **Powerpoint Presentation: A Tool to Increase Grade 12 Student's Academic Interest and Performance in Physical Science**

Rodel Loresto, Dr. Arsenio C. Nicolas National High School

### **Abstract**

#### **INTRODUCTION**

Integration of information, communication and technology (ICT) prepare the students for current digital era. The aims of ICT are to improve and increase the quality, accessibility and cost-efficiency of the delivery of instruction to the students. With the alarming condition of the apparent MPS results and observed scenario in the classroom, the researcher found a tool in utilizing PowerPoint presentation. The researcher opted that is very timely to conduct an action research to test if the PowerPoint presentation would increase the interest and academic performance of students.

#### **METHODS**

The researcher utilized descriptive-comparative method where the research itself considered two entities: pretest and posttest of the respondents after the use of PowerPoint presentation. Fifteen students out of 49 grade 12 students were chosen using purposive sampling method responded to the questionnaires, pre-test, and posttest. The data gathered was analyzed using mean score and t-test.

#### **RESULTS**

The result of the questionnaires given to the respondents before the utilization of the PowerPoint presentation showed that they are undecided with their interest in physical science with a mean score of 3 while after the utilization of the PowerPoint presentation the mean score of the respondents become 4. The result of the pretest and posttest, given to the 15 respondents in 10-item test conducted before and after the utilization of the PowerPoint presentation, revealed that the pretest acquired a mean of three and mean of five substantiate the posttest result. One hundred percent of the respondents said that they enjoy and learned better with the PowerPoint presentation (personal interview, 2019).

#### **DISCUSSIONS**

PowerPoint presentation increased the interest of the respondents. There is also an increased in the mean of the pretest of the respondents after the utilization of the PowerPoint presentation.

**KEYWORDS:** PowerPoint, senior high, physical science

**SUBMISSION ID: R04A-QUEZON-0078**

## **Predict-Observe-Explain (POE) Strategy: Basis for Enhancing the Performance of Students in Science**

Liezl Ann Marie Oliva

### **Abstract**

#### **INTRODUCTION**

The science curriculum in the K to 12 program provides students with a repertoire of competencies important in the world of work and in a knowledge-based society. It also aims to develop scientific literacy among students toward application of scientific knowledge that will create social, health, and environmental impact. In this study, the researcher focused on the assessments of teachers and students on the use of predict-observe-explain strategies in teaching Earth and Life science. It also determined the utilization of the said strategies to strengthen the cognitive, affective, and psychomotor development of students. The professional characteristics of teachers and performance of students were also described in the study.

#### **METHODS**

The descriptive method of research was used in this study with the questionnaire as the main data-gathering instrument. There were 21 teachers and 203 senior high school students who served as respondents of the study. As another source of data, the students' final grade in Science in Grade 10 was also taken. Frequency, percentage, ranking, weighted mean, and two-tailed test of independence were the statistical tools applied in the study.

#### **RESULTS**

The teachers and students assessed that predict-observe-explain strategy is helpful in providing deeper learning in Earth and Life science subject. The two groups of respondents believed that the utilization of predict-observe-explain strategies strengthened the cognitive, psychomotor and affective development of the students. The teachers and students differ in their assessments on the use of predict-observe-explain strategies in strengthening the cognitive development of the learners. The proposed enrichment activities covered the low assessments of the two groups of respondents regarding the use of predict-observe-explain strategies. This is designed to propose meaningful, challenging and innovative activities for the learners. These activities aim to upgrade the capabilities of science teachers as well as the students through the utilization of varied POE strategies with ICT integration.

#### **DISCUSSIONS**

The study recommended that the Science teachers must take advanced study in their specialization. Their knowledge and skills will also be enhanced in attending several trainings relevant to other science strategies that may also lead them to construct/design other useful and innovative enrichment and simulation activities.

**KEYWORDS:** Predict, Observe, Explain, strategy

**SUBMISSION ID: R04A-BATANP-0019**

**Production of Bio-Based Plastic made from Cassava Peel (*Manihot esculenta*) Reinforced with Chitin Derived from Golden Apple Snail (*Pomacea maculate*) and Glycerin as Plasticizer**

Mark Angelo H. Vargas, Camp Vicente Lim Integrated School  
(Adviser: Leandro De Luna)

**Abstract**

**INTRODUCTION**

The abundance of plastic isomers brought a huge impact on the planet. According to World Economic Forum (2018), in 2015, over 320 million tons of polymers, excluding fibers, were manufactured across the globe. Few commercial applications exist for bio plastics. In principle, they could replace many applications for petroleum-derived plastics. However, previous versions of bio plastics, although rigid and absorbent, are still brittle"this pushed the investigator to produce an innovative plastic made from cassava peel, added with chitin derived from snails, and glycerin which acts as a plasticizer. Hoping that through deep theoretical works and experiment, this product could be used in the industry in the near future solving the Philippines' problem concerning mismanaged plastic wastes.

**METHODS**

The first stage of the research is the extraction of chitin from Golden Apple Snail (*Pomacea maculate*) which consists of Preparation, Deproteinisation, Demineralisation, Deacetylation and Drying. Upon the preparation of the bio-based plastic, the investigator prepared the extracted chitin, glycerin, fined cassava peel and water. The mixture was then treated in a cooking pot. After drying, the samples produced were cut into 1-inch-by-2-inch strips for testing.

**RESULTS**

The experimental design of this product is better when the bioplastic is reinforced with glycerin, thus, this key material served as a binder, which promotes durability. The organic plastic was made possible using chitosan from snail, and mainstay from cassava, which are both agricultural waste and cost effective. The commercial plastic still have a greater tensile strength compared to the produced organic film. Conversely, the bio plastic on flammability test lasted longer compared to polyethylene. When the organic plastic was tested and evaluated, the results showed that water-resistant coating reduced the H<sub>2</sub>O absorption of the hydrophilic starch.

**DISCUSSIONS**

The results of the study indicate that future researchers should find more ways to make the product more durable as compared to commercial plastic, such as to find a biodegradable coating to certify that all of the materials are organic. Furthermore, the addition of Polyvinyl Alcohol and Epoxylized Soya bean oil (ESBO) as binders are the significant factors in the success of the innovation.

**KEYWORDS:** cassava peel, glycerin, chitin, isomer

**SUBMISSION ID: R04A-CALAMB-0031**

**Production of Homemade Herbal Tea from Dried Blue Ternate,  
Moringa Leaves and Mangosteen Pericarp: An Optimization of its  
Pharmacological Benefits**

Patrick Vince Carion, Maltana National High School

**Abstract**

**INTRODUCTION**

The present paper deals an experimental study in producing herbal tea from dried blue ternate, moringa leaves and mangosteen pericarp. This research is beneficial to the students, environment, and community as it envisions creating a product that has the power to prevent various human illnesses. Furthermore, this innovation will produce an alternative tea that uses natural ingredients.

**METHODS**

This research used three (3) plants to create tisanes tea namely: blue ternate, moringa leaves and mangosteen pericarp. The blue flowers of blue ternate, moringa leaves, and mangosteen pericarp were collected in November 2018 from the locality. The flowers were dried at room temperature and were stored in an airtight container. The stalks were dried in a month and the leaves were removed. In addition, blender was used to grind moringa leaves. The mangosteen rind and its outer part were removed. It underwent a three-day sun drying before it was grinded.

**RESULTS**

The finished products were all edible and safe since it is made from natural plants. To prove its effectiveness, the entire study underwent a one-month survey through qualitative research. In the second week of December 2018, tea samples were given to a respondent who had constipation. After 3 days of intake, normal bowel movement was observed. In the third week, a man suffering from stomach pain was given a tea sample. After 2 days of intake, he noticed that his stomachache was gone. In the fourth week, researchers gave six tea samples to their last respondent to be taken within 2 days. Accordingly, the product is good for relaxation and it has a color changing property when lemon is added.

**DISCUSSIONS**

Research had shown that the tea produces nutrients needed to the human body. These effects were comparable to the study of Mukherjee et al. (2008) that its extracts possess a wide range of pharmacological activities including antioxidant, anti-inflammatory, aid stomach problems, and cleansing and relaxing properties. The result also indicates that the tea has no toxicity profile. Moreover, the paper reviewed all the ingredients as promising medicinal plant with wide range of pharmacological activities, which could be utilized in several medical applications because of its effectiveness and healthful effects.

**KEYWORDS:** Homemade Herbal Tea, Dried Blue Ternate, Moringa Leaves, Mangosteen Pericarp, Pharmacological Benefits

**SUBMISSION ID: R012-SOUCOT-0001**

**Project (RSVP) Revitalize Science Vocabulary for Pupils' Improvement  
an Intervention Program to Improve Comprehension in Science  
Concept for Grade Six Pupils of Carlos S. Batino Sr. Elementary School**

Floribel C. Tibayan, Rosalinda A. Sta. Ana, Department of Education

**Abstract**

**INTRODUCTION**

One of the problems that the Grade six teacher and learners in the teaching-learning process in Carlos S. Batino Sr. Elementary School is the pupils' difficulty in comprehension in Science Concept resulting to poor academic performance in the said subject. This action research was conducted with the grade five pupils composed of 25 boys and 24 girls. The pupils in the class had short attention in their academic performance in science. Vocabulary has always been a weak area for these pupils and the researcher wanted to get an answer on how teaching vocabulary can improve the comprehension in science concept.

**METHODS**

The study used the purposive sampling. The study involved for 49 Grade five pupils of Carlos S. Batino Sr. Elementary school for the school year 2017-2018. They were chosen as the respondents for the study. All data gathered from the respondents will be organized tallied and presented in a series of tables and graphs. Frequency counts, percentages, weight values and weighted mean will be use in the analysis and interpretation of data.

**RESULTS**

When looking at increasing comprehension in content areas through science vocabulary instruction, it is important for teachers to include different strategies that address struggling learners. Teachers need to attempt to identify the individual reasons why learners struggle in science vocabulary words. As a result of the action research project, it was proven that the students slightly gained more knowledge in science concept because of their vocabulary awareness. By exposing them to vocabulary constantly during the treatment period, they gained more science content knowledge. Using different vocabulary strategies allowed students to discover a way to help them remember and understand the vocabulary needed for the science topic being taught. The students were able to use their vocabulary words in science talks and in their journals.

**DISCUSSIONS**

Vocabulary knowledge serves a critical role in comprehension especially in science concept. Increased vocabulary knowledge will aid in increased comprehension and the achievement level of the students. From the review of literature, studies have shown that a combination direct instruction and vocabulary strategies will improve students' vocabulary knowledge. Depending on the content and students' needs, it may be necessary to teach individual word meanings to ensure that they are available for instant access when reading text in science.

**KEYWORDS:** Performance, Purposive, struggling

**SUBMISSION ID: R04A-CAVTP-0499**

## **Project AESOCS (Automated Eco-Solar Charging Station)**

Janine Banaria

### **Abstract**

#### **INTRODUCTION**

An administration lawmaker revealed that the Philippines has become the world's third largest source of plastic leaking into the ocean and has among the highest trash collection rates in Southeast Asia. Plastic materials especially plastic bottles can take centuries to break down. Several government agencies and other lawmakers began to develop ways, programs and policies to reduce the use and its effect. The reduction of plastic bottles urged the researcher to develop a device that would at least help the government to alleviate this problem. This research is focused on a device that will help the consumers to charge their smartphones even in public places in exchange of their used and empty plastic bottles.

#### **METHODS**

The researcher gathered the materials needed on the construction of the device for both the framework and the circuit. The framework of the device was made of aluminum following the garbage-bin design created by the researcher. Several wiring connections for sensors, electrical components and the microcontroller have been followed. The software of the device was also programmed by the researcher to communicate or run as server to the hardware connection. Trial and error in operating the device has been made to realize effectively its function and later placed in some areas along the municipality.

#### **RESULTS**

The created device was tested through placing it in some public places along the municipality and asking some of the users to answer the survey questionnaires. The device can successfully detect plastic bottles once the user throws it in the bin. When the device detected the bottle, the charging station will be activated for the user to charge their phones. It showed that for every plastic bottle inserted on the bin, the user can charge his phone for five minutes. The charging capacity of the battery also depends on the type of the battery and brand of the phone. Based from the results gathered from the respondents, the weighted mean for functionality, effectiveness and physical structure of the device were 4.9, 4.6 and 4.5, respectively. Thus, the device functioned effectively based on its main task and the physical structure was excellent in holding the capacity of the inserted plastic bottles.

#### **DISCUSSIONS**

The collected plastic bottles of the device can be sold to some junk shop in the area. The attached solar-panel in the device serves as the powerhouse of the entire charging station. To prevent electrical fluctuation, proper execution of wiring is necessarily needed.

**KEYWORDS:** Plastic bottles, microcontroller, charging station

**SUBMISSION ID: R005-CAMSUR-0039**



## **Project AMOSIS (Automated and Moving Sprinkler Irrigation System)**

Jessie B. Roxas  
(Adviser: Janine Banaria)

### **Abstract**

#### **INTRODUCTION**

Irrigation is an artificial application of water to land for the purpose of agricultural production. It assists in the growing of the agrarian crops, suppresses the weed growth, prevents soil consolidation, and maintains landscapes, yet we are still facing problems in it. Hence, the researchers constructed an intelligent irrigation sprinkler device that can automatically detect the dry soil and go to the area where the dry soil is and sprinkle it with water to meet soil moisture requirement; and will work and function well even without any people around and will also contribute to water conservation and will minimize the work of the farmers.

#### **METHODS**

In making of the device, the framework was constructed first, followed by the installation of the components, which is the stepper motor, bicycle sprockets, aluminum pulleys, and ultrasonic sensors. Then, the researcher made the circuit. After that, the researcher assembled the cylindrical water pump and the sprayer. Subsequently, for the device to work, the code was programmed by the researcher. The randomly selected grade 12 Agri Crop Production (ACP) students participated to assess the device.

#### **RESULTS**

The soil moisture reading is less than or equal to 550 if the soil is wet, while 750 up if it is dry. The device can detect the dry soil and activates the sprinkler subsequently. When the reading of the two soil moisture sensors is less than or equal to 550, it means that the soil is dry. The sprinkler will go to that area and the buzzer will buzz and activates the sprinkler right after for one minute. Moreover, with the total average of 2.77 gathered from the ratings of the 10 respondents, it indicated that the Project AMOSIS functions well and shows excellence in agricultural field. The device structure is appropriate and effective based on its task.

#### **DISCUSSIONS**

Based from the findings and result, the researchers concluded that the Project AMOSIS (Automated and Moving Sprinkler Irrigation System) displayed absolute effectiveness in maintaining the moisture of the soil. The soil moisture sensor is responsible in reading the value of moisture of the soil that ensures the functionality of the device, which is to water the plants if the reading reached a certain level. The research study proved that the device performed well especially the sensors used in detecting and watering the plants. Generally, the device performed its task and function as the researchers expected.

**KEYWORDS:** Irrigation, Soil Monitoring, Agriculture, Microcontroller

**SUBMISSION ID: R005-CAMSUR-0040**

**PROJECT SVENTIL (Science Vocabulary Enhancement Needs:  
Towards Individual Learnings)**

Mary Grace Manalo, Department of Education

**Abstract**

**INTRODUCTION**

Science is the core principle of knowledge that enhances and develops the experiences and skills of an individual. It plays a vital role in the life of every individual and it helps to understand and exist in the modern world of learning. Despite several methods and strategies in teaching science, teachers are still encountering problems in making and developing students' ability in mastering and understanding Science vocabularies. Being one of the skills needed to develop 21st century learners, it is vital to nurture research skills among students in order for them to become competitive in the new millennium. As such, this study aimed to give more opportunities for students to develop scientific literacy and practice scientific habits of mind. By identifying these problems, academic leaders will be able to devise enrichment activities and supplemental materials to augment the science learning of the pupils.

**METHODS**

A quantitative-descriptive method was used in this study with validated questionnaire as research instrument. The study made use of 33 Grade III Santol pupils of Paaralang Elementarya ng Talahiban 1.0, School Year 2018 - 2019. It was obtained through purposive sampling. Before conducting the study, the researcher secured permits to authorities. The study started with an identification of the existing problems encountered in the field. She personally administered the research instrument used.

**RESULTS**

Out of 33 Grade III Santol pupils, only 9 or 27% can decipher vocabulary words in Science Lesson and 24 pupils were identified at risk in terms of decoding words or had difficulties in learning the vocabulary words in Science in School Year 2017 - 2018. After the utilization of the new teaching strategies the level of improvement raised to 79% with 52 % increase in School Year 2018 - 2019.

**DISCUSSIONS**

An effective teacher requires the implementation of creative and innovative teaching strategies in order to meet students' individual needs. The study revealed that it is necessary to use methods and strategies that are suited for the learners. Therefore, new ways in teaching science vocabularies made a great help for pupils understanding.

**KEYWORDS:** SVENTIL

**SUBMISSION ID: R04A-BATANP-0776**

## **Pulverized Banana (*Musa acuminata*) Bark as Crude oil Absorber in Sun Drying and Oven Drying Method**

Mary Joy Valdez

### **Abstract**

#### **INTRODUCTION**

Crude oil spill is one of the major dilemma that affects water pollution of the different bodies of water around many countries in the world, including the Indonesia, Malaysia, United States of America, United Arab Emirates, Western Europe and the country of Philippines as stated by (Noriham,2014. Furthermore, according to the study of Salako et.al (2012) there is an estimated 1 million gallons of crude oil spill generally affects the life of aquatic organisms living on the bodies of water. Crude oil is one of the major factors that affect the marine organisms living on it. Moreover, as a solution, the researcher decided to investigate the ability of banana bark in absorbing crude oil in terms of sun drying and oven drying method.

#### **METHODS**

Two methods were done for the experimental set-up. The researcher had followed the procedures adapted from the Method of Absorbing Oil using powdered Aquatic Lily Plant by Jorge V. Diaz. Banana barks were gathered cut into 15 inches long and undergone sun drying and oven drying method. Then, sun dried and oven dried banana bark were pulverized. Three (3) separated trials were prepared for the two methods. Trial 1 was with 5g of banana bark, 200 mL of water and 10 mL of crude oil sample. Meanwhile, Trial 2 was with 10g of banana bark, 200 mL of water and 10 mL of crude oil. Lastly, Trial 3 with 15g of banana bark, 200 mL of water and 10 mL of crude oil. Banana bark were soaked and observed on the solution for 12 hours.

#### **RESULTS**

As a result of the observation, in sun dried method, T1 weighed 1.3g, T2-0.18g and T3-2.18g. In oven dried, T1 weighed 0.6g, T2- 1.2g, and T3-0.13g. To sum it all, the average weight of sundried banana bark is 3.66 compared to oven dried banana bark, which is 1.93. It shows that between the two methods, sun drying is the most effective method for to follow in drying banana bark.

#### **DISCUSSIONS**

Based on the outcome, it showed that Trial 3 that is sun dried banana bark is the most attested among the three (3) trials prepared by the researcher. In line with this, the researcher concluded that banana bark is effective as crude oil absorber in sun drying method.

**KEYWORDS:** sun drying, Oven drying, pulverized, absorption capacity

**SUBMISSION ID: R04A-CALAMB-0088**

## **Recycled PET (Polyethylene Terephthalate) Bottles as Whiteboard**

Lucila Canalita, Department of Education

### **Abstract**

### **INTRODUCTION**

Plastic waste is a silent threat to the environment. It is also one of the most challenging problems in Kaylaway National High School. Eliminating plastic waste material such as PET bottles is a big concern of the school's waste management team. Another problem arises in our school is the shortage of functional chalkboard or whiteboard inside the classroom. The researcher comes up with the idea on shooting two birds with one stone, the use of PET bottles as possible materials in the production of whiteboard which could not only provide solution to one of the environmental problems, instead counterpart the problem with learning materials.

### **METHODS**

Experimental method was used in this research. The materials used aside from PET bottles are oven toaster, white paint, iron molder and scissors. School's laboratory is also used as the research site. The procedures are; collecting and cleaning PET bottles, cutting PET bottles into small pieces, liquefying, solidifying and molding PET bottles and last applying paint to solidified Pet bottles.

### **RESULTS**

PET (Polyethylene terephthalate) bottles have a polymeric material that has the capacity of being molded or shape usually by the application of heat and pressure. Its special property such as low density, low electrical conductivity, transparency and toughness allow plastic to be molded into the desire materials such as whiteboard. The researcher did four trials. Each trial with different quantities of PET bottles and temperature came up with different outcomes. In the first trial, small pieces of PET bottles absorbed heat but does not change its form. In the second trial, pieces of PET bottles were squeezed and slightly changed its shape. In the third trial, pieces of PET bottles were melted but not able to compress. Lastly, at the fourth trial, pieces of PET bottles were totally melted and were able to reshaped and solidified as the shape of the molder.

### **DISCUSSIONS**

Based from the results gathered, PET bottles can be liquefied, reshaped and molded into other product such as whiteboard through the application of heat produced by the oven toaster with a temperature of 550  $^{\circ}\text{C}$ . The heat conductivity of molder used in the study contributed to the success of the overall process. It was also proven that the property of the PET bottles of being malleable enables the desired whiteboard to be possible. Polymeric material present in PET bottles has the capacity of being molded usually by the application of heat and pressure.

**KEYWORDS:** Polyethylene terephthalate, Whiteboard, Recycle, Liquefying, Solidifying, Molding

**SUBMISSION ID: R04A-BATANP-1562**

## **Recycling Strategies of Tacurong National High School for Clean and Green Environment Program**

Kathrina Audrey R. Jacob

### **Abstract**

#### **INTRODUCTION**

Filipinos produce millions of tons of waste in our communities every day. One might wonder if some even think about where the trash is going and the negative impacts are. Nowadays, recycling has become popular topics because it affects our environment in our life. The goal of recycling is always to make the best use of all materials, and only landfilling those materials for which there are currently unused anymore. Many people assume that the environment is not in danger. They believe that as technology advances, we do not need to worry about renewing natural resources, recycling, and finding new ways to produce energy. Our natural resources are slowly disappearing, and we must work together to save them and the Earth from ruin.

#### **METHODS**

The study utilized the descriptive method using quantitative approach in gathering information about the present condition. This study employed the use of a questionnaire as a primary and research instrument to gather data. A random sixty-five students of Tacurong National High School Extension Campus are chosen as the respondents. The given data will be organized and will make an evaluation upon the strategies in maintaining cleanliness.

#### **RESULTS**

Based on the sixty-five respondents most of them are throwing their own garbage properly. Some are cleaning their surroundings every day. As the lowest rating most of them are not attending seminars or workshops about the proper method in waste disposal and they are not organizing a team to identify key players for managing the waste issues. They all gave an equal rating about their strategies in maintaining cleanliness.

#### **DISCUSSIONS**

The results demonstrate that the school must have a seminars or workshops about the proper method in waste disposal. Also after the seminar or workshop it is helpful to organized a team and identify key players or leaders for solving and managing the waste issues in the school.

**KEYWORDS:** recycling, strategies, renewing

**SUBMISSION ID: R012-TACURO-0005**

**Removal of Lead (Pb) from Mining Wastewater by Fabricated Filter  
from Coconut (*Cocos nucifera*) Husk and Banana (*Musa sp.cv.Cardava*)  
Lignocellulosic Materials**

Jogie Elcanto, Department of Education, Tagbina National High School  
(Adviser: Ryan Paul Vales)

**Abstract**

**INTRODUCTION**

Caraga has been a home to a number of mining companies, which produce wastewater. Heavy metal-rich mining effluent pollutes water resources if discharged without treatment. Exposure to heavy metals such as Pb is proven to cause adverse effects on human health. It is therefore imperative to treat wastewater before discharging them back to the environment. However, standard treatment facilities are only affordable to well-off mining firms; small-scale miners usually resort to indiscriminate wastewater discharge. This encouraged the researcher to create inexpensive and sustainable wastewater filter from common agricultural-wastes---coconut husks and banana pseudostem.

**METHODS**

Forty-five cm<sup>2</sup> long, 1.27 cm thick mat-like filters with 0.5 mm pore size were fabricated out of weaved coconut husks and banana pseudostem. Wastewater collected from a Gold-ore Processing Plant in Tambis, Barobo, Surigao del Sur were filtered through---banana filter- single sheet (treatment 1), banana filter-double sheet (treatment 2), coconut filter-single sheet (treatment 3), coconut filter-double sheet (treatment 4), and unfiltered water (control). Water samples were tested for Pb content using Microwave Plasma-Atomic Emission Spectrometer at the Department of Agriculture's Integrated Laboratories in Butuan City.

**RESULTS**

The results showed that unfiltered mining wastewater contained 12.33 ppm Pb. After filtration, that number decreased to 8 ppm for banana filter-single sheet (35.12% reduction) and 7 ppm (43.23% reduction) for double sheet. For coconut filter, the water filtered through single sheet was found to have 8.33 ppm Pb (32.44% reduction), and 8 ppm Pb (35.12% reduction) for double sheet. Analysis of variance revealed that there is a significant difference in the Pb concentration of water before and after filtration.

**DISCUSSIONS**

The results demonstrate that the amount of Pb in unfiltered mining wastewater is 62 times higher than DENR's effluent standard for Pb (0.2 ppm). The coconut husk and banana lignocellulose filters have significantly reduced the Pb concentration. The significant reduction of Pb after filtration could be attributed to the lignin-bonded cellulose in the filters. Studies showed that lignocelluloses have high adsorption capacity to metal ions (Ge, Li, Kong, Song, and Wang, 2014; Nair, Panigrahy, and Vinu, 2014). If mass-produced, the filters could not only minimize Pb pollution, it could also provide livelihood to locals.

**KEYWORDS:** Agricultural wastes, filter, lignocellulose, Pb, wastewater

**SUBMISSION ID: R013-SURSUR-0053**

**Retention of Science Concepts among Grade- Iii Pupils in Dacanlao G.  
Agoncillo Elementary School**

Elizabeth Ilagan, Department of Education, Calaca , Batangas

**Abstract**

**INTRODUCTION**

Science, as one of the three core subjects, ignites student's creativity, triggers to think logically, and allows them to reason out on certain phenomena. Being an active subject with hands-on labs and experiments, Science allows students to explore and discover new things. Since it is mandated that learners should be globally competitive in terms of technical and pedagogical knowledge, introduction of inquiry-based methods to primary level should be prioritized. Throughout the experience, success lies on the learner's skill in forming concept, which is found difficult to achieve. In this study, the author will explore on ways to improve students' retention of concepts through action research.

**METHODS**

Descriptive method was used in this study. It involves the description, recording, analysis, and interpretation of the present nature, composition or processes of phenomena, or how a person, group or thing behaves or functions in the present. With the approval of the principal, 50 Grade III Batch 2017-2018 students of Dacanlao Gregorio Agoncillo Elementary School (DGAES) were asked to answer questionnaires prepared by the author. Upon collection, data were subjected to appropriate statistical treatment to test its validity.

**RESULTS**

The respondents revealed that the main reason why they suffered difficulty in retaining the Science concepts was they do not re-study the lesson at home. They also disclosed that they find it hard to construct what they have learned and they cannot understand the concepts because their classmates are noisy. The respondents also agreed that the effect of not retained Science concept to their achievements such as they are not equipped in utilizing Science apparatus, they find it hard to apply what they have learned during quizzes and they received lower grade in Science compared to other subjects.

**DISCUSSIONS**

After applying the necessary innovation, intervention and strategies the researcher found out that the pupils who re-studied the lesson at home by means of memorizing the Science concept learned in the tune of familiar song, rap, mellow, RNB music and jazz chant improved their performance in class. Contextualized lesson using situations familiar to them made them interested in the lesson thus helped in avoiding noise. Hands-on activity using different Science apparatuses led them in their discovery of the Science concept. Using differentiated instruction suited to the needs of the learners also worked in helping the pupils retain the concept of the lesson.

**KEYWORDS:** core, triggers, phenomena, hands-on labs, inquiry-based, pedagogical knowledge

**SUBMISSION ID: R04A-BATANP-0697**

**Revitalizing Whole School Approach (WSA) through Project SIMPLE  
(Scientific and Interactive Materials that Process Literacy in English) in  
Enriching the Academic Performance in Science of Grade Ten Le**

Edwina R. Solano, Joseph Guerrero, Liziel M. Guerrero, Department of  
Education - Calamba City

**Abstract**

**INTRODUCTION**

Revitalizing Whole School Approach through Project SIMPLE was the purpose of this study in enriching the academic performance in Science of Grade Ten learners. The proponents employed a responsive, relevant and appropriate approach infused with Bloom's Taxonomy of Cognitive Thinking Skills as well as text-visual instructional materials and 5E Learning Model developed into different SIMPLE cards in teaching Science 10 that established a higher order thinking skills among the learners.

**METHODS**

One hundred twenty grade ten learners classified by the researchers together with the Grade 10 English teacher into frustrated, instructional and independent readers. Pre-test - Posttest Non Equivalent Groups Design was utilized where the pre-test and posttest were administered to the identified respondents. This research was conducted in the science laboratory by the researchers within 24 days per grading period, once a day and for 24 sessions. The experimental group occupied the science laboratory four (4) hours per week.

**RESULTS**

Processed data were presented systematically to address each of the action research questions. The results of the study are as follows: (a) There was a variance of -4 to the actual number of frustrated readers and an increased in the number of instructional reader, from 67 to 68 and independent readers from 46 to 81; (b) Mean percentage scores of the experimental group (79.70% and 81.86%) obtained from posttest in each grading period was significantly higher than the pre-test MPS (66.98% and 68.84%); (c) The study also revealed experimental group 77% or 46 learners who performed outstandingly; 17 % or 10 learners who performed very satisfactory; 3 % or 2 learners who performed fairly satisfactory; and 3% or 2 learners who did not meet expectations; and (d) There are two types of activities that are suggested in this study : follow-up activities and additional intervention measures in order to improve the teaching and learning process in Science 10.

**DISCUSSIONS**

The observations and findings of the study have a strong and useful educational implication to improve the academic performance level of the learners in science using SIMPLE Cards. The results of the study implied that SIMPLE CARDS could be a tool to improve the performance level of the students. Other learning areas and year level can: (a) Adopt or imitate; (b) Adapt or adjust or level up; and (c) Adept or excellence/ institutionalize in order to maximize the use of SIMPLE Cards.

**KEYWORDS:** Whole School Approach, Project SIMPLE, Grade Ten Science

**SUBMISSION ID: R04A-CALAMB-0236**



## **Robocutter: A Helping Hand in Cutting and Collecting Grasses**

Aivril H. Lorenzo, Kate Nadine D. Inocencio, & Tracy Althea S. Ramos  
(Adviser: Preacy Ann Llantos)

### **Abstract**

#### **INTRODUCTION**

Grass cutter has been very helpful in mowing lawns and to everyone who aims to solve their problems concerning grasses. Grasses has been one of the major contributors of the upsurge in dengue and malaria cases. It also causes grass allergy to some people and these grasses has been the place where animals that are threat to human lives like snakes live. The research labelled as the "RoboCutter' is a robot which objective is not just to cut grass but also collect it. The study targets to help the potential owners in dealing with grasses and the problems, which concerns it.

#### **METHODS**

The robot was constructed using EV3 Lego Mindstorms kit, EV3 sensors, Lego elements and other materials. It was programmed using Lego Mindstorms Education EV3 Programming Software at Rosario National High School, school year 2018-2019. The researchers tested the efficiency of the robot on different types of grasses and terrains. They used sand boxes and planted three types of grasses with different terrains on each. With this, we can test if the robot really has the ability to cut grasses in such areas, and if the robot itself can perform properly.

#### **RESULTS**

Therefore, the researchers concluded that the RoboCutter is effective alternative to the commercial grass cutter and was proven to be beneficial to the potential owners. The use of the robot has a promising result as an efficient grass cutter and collector. The robot indeed perform its responsibility to cut and collect grass in different terrains such as flat and rocky. As a result, after using pre-and-post-test of the two groups namely RoboCutter which is an EV3 robot and the commercial lawn mower specifically the gas operated. The result was gathered by the researcher.

#### **DISCUSSIONS**

The researchers built RoboCutter to make cutting and collecting grasses easier and faster. They promote an energy-efficient robot that works even without the assistance of human power. RoboCutter can also lessen the occurring problems that we may encounter that concern grasses. The researchers suggest that the proposed robot should have a development in terms of its effectiveness, durability and efficiency that will be more applicable in performing its tasks. The testing proved that RoboCutter is an effective robot that cuts and collects grass easier and faster. It can perform its task properly as how it was programmed.

**KEYWORDS:** RoboCutter

**SUBMISSION ID:** R04A-CAVITP-0563

## **Robomaitron: A Robot That Can Absorb Dust and Dirts**

Archelle Rose V. Ganarial, Errine Paras, mHeart Q. Zaragosa, Nicka D. Requero

(Adviser: Preacy Ann Llantos)

### **Abstract**

#### **INTRODUCTION**

Almost all of the household chores are dealing with cleaning after being done. Some of us are not capable of cleaning all the mess after all the things that they did. The tendency is they will be doing the same task tomorrow. Thus, it makes our task heavy and more hassle. The researchers conducted a study about a robot that can help us in cleaning. RoboMaitron: The Cleaning Robot has the ability that can be use in specific household chores such as cleaning the carpets, corner of the house and the small spaces (e.g. under the couch, bookshelves and under the bed) that is covered with dirt, so as the big waste. This robot has the ability that the other cleaning materials separately do.

#### **METHODS**

The researchers used the T-Test for the testing. The researchers recorded the amount of dust and dirt collected by the robot and measured in grams by using a clear bottle with markings on it. The other researchers tested the robot if it functions well following the program. The testing helped the researchers to answer the following statements of the problem such as how many dust and the robot can collect and will the robot perform its tasks properly.

#### **RESULTS**

The study "RoboMaitron: The Cleaning Robot" had undergone testing with the help of the researchers to test its function and to know if the elements especially the sensors attached on it are working properly. As a result, "RoboMaitron: The Cleaning Robot" can perform its tasks properly base on the program built by the researchers. It can collect dusts as many as a normal vacuum cleaner can. It can be used not only in school floors but also in houses, buildings and many more establishments. RoboMaitron: the cleaning robot invention will serve as addition in making things easier with the help of Robotics.

#### **DISCUSSIONS**

The research study entitled "RoboMaitron: The Cleaning Robot" is intended to help people to easily clean their houses from getting rid of dusts. This study succeeded with the collaboration of the researchers and with the interactive sensors and parts of the robot specifically the LEGO Mindstorms EV3 kit.

**KEYWORDS:** RoboMaitron, Rosario National High School

**SUBMISSION ID: R04A-CAVTP-0978**

## **Sawdust: An Alternative Sand in Concrete Bricks**

Desiree S. Sulibet, Elizabeth R. Guran, & Reign Faith Arwen D. Ba, Plaridel  
Integrated NHS  
(Adviser: Patricia A. Arban)

### **Abstract**

#### **INTRODUCTION**

Waste management became one of the major problems in terms of environmental and economic issues. There are many pollutants that are mainly caused by these waste materials. One of this is sawdust that comes from cutting woods. The purpose of this study is to increase the usage rate of sawdust. Sawdust as an alternative substitute for sand in making concrete bricks can be used in construction. The researchers used this material because this is considered as an agricultural waste but actually, has still many uses. This is also can be part of the reuse, reduce, and recycle campaign of the government. This study is made to bring a new life for sawdust by turning it into bricks.

#### **METHODS**

This research is an Experimental study that shows the different ratios in making sawdust brick using sawdust, agricultural lime, cement and water. The researchers made a sample of sawdust brick with 4.5cm x 4cm x 2cm. Three sets of sawdust bricks were made to make a good quality of sawdust brick. Three samples from the best set of sawdust brick was tested in terms of durability, fire resistance and water absorption. For the durability of the product, different weights were used. The samples were exposed to the fire thrower to test fire resistance and submerged in water to test water absorption.

#### **RESULTS**

This study was conducted to produce an alternative bricks made up of sawdust. The set with the highest amount of sawdust became the most durable brick and was determined by using two-way ANOVA. From this product, three samples were tested by exposing each to fire with time duration to test its fire resistance. Cracks were visible after 30 minutes but maintained its length until one hour. Change in color was also visible. It turned into brownish black color. In porosity test, 19.74% is the absorption of water in sawdust bricks. Lastly, the researchers used different weights to test its durability. The sawdust brick remained solid with 200g of weight s when released on 35 inches height and started to split with the heaviest weight of 600g.

#### **DISCUSSIONS**

The results show that in fire resistance test the bricks had a partial crack so it needs more improvement. In durability test, the one with the high amount of sawdust becomes the most durable and effective one. Moreover, in porosity test the capability of sawdust bricks is near to the standard of absorption. It is recommended for the future researchers to use machines for better testing and improve the formulation of the product to be more durable.

**KEYWORDS:** sawdust, agricultural lime, concrete brick

**SUBMISSION ID: R04A-LAGUNA-0235**

## **Science, Technology, Engineering and Mathematics (STEM) Students' Perceptions in Taking Online Examination**

Alfredo Dela Peña Pasol III

### **Abstract**

#### **INTRODUCTION**

Today, Online Examination System is considered a fast developing examination method because of its accuracy and speed. It is also needed less work force to handle the examination. Almost all organizations today, are managing their exams by online examination system, since it reduces student's time in examinations. Organizations can also easily monitor the progress of the student that they give through an examination. Because of this, the result is calculated in less time. It also helps diminishing the need for paper. According to today's requirement, online examination system is significantly important to the educational institution to prepare the exams, saving the time and effort that is required to check the exam papers and to prepare the results reports.

#### **METHODS**

The researcher utilized descriptive-survey research design because the researchers believe that it best served to answer the questions and the purposes of the study. The survey research is one in which a group of people or items is studied by collecting and analyzing data from STEM 12-Spectrum students considered to be representative of the entire group. In other words, only a part of the population is studied, and findings from this are expected to be generalized to the entire population the survey assessing public opinion or individual characteristics by the use of questionnaire and sampling methods.

#### **RESULTS**

Based on the results of the study, it was concluded that the majority of the respondents mostly were female and in adolescent stage. All respondents were good in academic performance both with honor and with high honor. In terms of the perception of the respondents in taking online examination, results revealed that the online examination has fast results, effortless and manageable that is rated "occasionally". The researchers also concluded that all perception got the interpretation of "occasionally". It implies that online examination is recommended as basis for assessment.

#### **DISCUSSIONS**

Based on the results, it was perceived by the researchers that online exam must be the basis for students and teachers in giving an assessment or evaluation.

**KEYWORDS:** Online examination, perception

**SUBMISSION ID: R012-TACURO-0010**

## **Scientific Techniques to Quit Smoking as Perceived by Stem Students**

Chico D. Reyes

### **Abstract**

#### **INTRODUCTION**

Millions of people around the world enjoy the sickening habit of smoking. Many people who smoke say they smoke to relieve stress, or they smoke more when they are experiencing stress. People who have quit smoking say stress is the number one reason for relapse. However, smoking does not relieve stress. In fact, it may even cause more tension and anxiety for a smoker.

#### **METHODS**

The respondents of this study were the Grade 11 and twelve Science Technology Engineering and Mathematics (STEM) Students who agree and disagree with the techniques and perception suggested by the researchers. The Total number of respondents for this research is sixty respondents. The researcher administered the survey questionnaire to the senior high students of Tacurong National High School. Moreover, the researcher asked favor from their respondents to present their techniques. It will serve as the data for the cigarette smoker in the city.

#### **RESULTS**

The researchers conclude based on the result of the study with sixty respondents to know the scientific techniques to quit smoking. It is concluded that in the demographic profile of the respondents of STEM students out of sixty respondents mostly of them are female with an age of sixteen-seventeen years old, which came from Grade eleven STEM students. In the class rank of respondents, most of the female got the with honor award during first recognition.

#### **DISCUSSIONS**

It is recommended by the researchers to the respondents that they must know how to manage their selves in preventing smoking. The researchers recommend the improvement of this study and search for broad topics that can help to create new study related to prevent smoking.

**KEYWORDS:** SCIENTIFIC TECHNIQUES, SMOKING, PERCEIVED

**SUBMISSION ID: R012-TACURO-0013**

## **Semisolid Charcoal Conductor for Wearable Technology**

Kate Ria L. Alcantars, Emiliano Tria Tirona Memorial NHS  
(Adviser: Angelo Biaco)

### **Abstract**

#### **INTRODUCTION**

The study was conducted to investigate the comparative resistance between semi solid charcoal conductors and commercial copper wire and the potential application of semi solid conductors to smart wearable technologies.

#### **METHODS**

These semisolid conductors were made out of mixing glue and charcoal and then incasing the mixture in tubes.

#### **RESULTS**

There is no difference in electrical resistance.

#### **DISCUSSIONS**

Semisolid charcoal conductors is applicable to additive manufacturing

**KEYWORDS:** charcoal, conductors, wearable technology, power supply

**SUBMISSION ID: R04A-CAVITP-0022**

**Sim-Gos: Dual Approach in Enhancing Academic Performance in Science of Grade 7 Students (Strategic Intervention Materials With the Use of Graphic Organizers)**

Cristina M. De Maranan, Maria Mercy L. Dimasacat, & Marivic M. Dimaculangan, Department of Education

**Abstract**

**INTRODUCTION**

The implementation of K to 12 Program brings forth new challenges, along with difficulties arising from the transition period from the old to the new curriculum. The drastic changes could have surmounting effects to the schools, the teachers, the parents and the students as they have to cope with the demands of the new educational system. The teachers utilized different instructional materials and strategies to address students' performance in Science as evidenced by the subject's low ranking in the NAT. This study aimed to develop, evaluate and determine the extent of usefulness of SIM-GO's in learning Science of the Grade 7 students of Taysan National High School.

**METHODS**

The study employed the descriptive method of research. The data were gathered using administered core skills assessment test in science. After determining the students' difficulties, questionnaires were administered to the respondents. The SIM-GOs was designed and developed based on the least-mastered skills. Then, seven teachers validated it by questionnaire. The researchers utilized SIM-GOs in teaching Science to 153 students. The student-respondents through a survey questionnaire evaluated the usefulness of these in learning Science concepts.

**RESULTS**

The results of the study revealed that the difficulties met in learning science concepts obtained a composite mean of 2.95, which indicates a great extent of difficulty. The researchers designed and developed SIM-GOs, which is a dual approach in enhancing students' academic performance in Science 7. They found out that it is a valid learning material as sustained by a composite mean of 4.77, with an "excellent" rating from the experts. Furthermore, the SIM-GOs were largely useful as perceived by the students with the composite mean of 3.07, which implies that the effectiveness of it is reflected on the students' improved performance after its utilization.

**DISCUSSIONS**

The results demonstrate that the usefulness of SIM-GOs in learning science concepts enhanced the students' academic performance. The motivational effects of these materials spearhead the students' desire to learn better and the encrypting effect of the design could probably help in the students' retention of the material contents in their memory. This promises a great improvement in the teaching- learning process and on the students' academic performance.

**KEYWORDS:** Strategic Intervention Materials - Graphic Organizer

**SUBMISSION ID: R04A-BATANP-1578**

## Simplified Prototype Design of an Alternative Golden Kuhol Trap

Kinzel Marl Bade

(Adviser: Maria Isabel M. Casanova)

### Abstract

#### INTRODUCTION

Agriculture plays an important role in our lives. It is the main source of income and of food. Philippines is known for being primarily an agricultural country and its agricultural sector has been improved, but unfortunately many pests are discovered that damage the crops produced from farming especially in our rice fields. The Golden apple Snail (*Pomacea canaliculata*) known as golden kuhol in the Philippines; eats the new emerging rice plant by cutting the rice stem at the base destroying the whole plant. In this study, the researcher will focus his study on reducing the golden apple snail with the natural materials, which do not harm both the crops and the farmers.

#### METHODS

All the necessary materials were gathered. The cloth was soaked in the container with 400 ml of beer and was set aside for at least six (6) hours. A big hole was made in the big plastic bottle where the small plastic bottle containing 350 ml of leftover beer can fit. A 1000 gram of sand was put inside the big plastic bottle with 100 ml of beer. The parts composing the alternative golden kuhol trap were assembled. Two samples of golden kuhol trap were used. Sample product B or golden apple kuhol trap, was attached with an improvised propeller. Each of the samples of golden kuhol trap was tested with 30 golden apple snails.

#### RESULTS

The researcher made two set-ups (Set-up A and B) whereas set-up A, without a propeller; set-up B with mini fan. The two set-ups revealed that set-up A gathered 3 golden apple with in 1 hour while sample set-up B gathered 5 golden apple snail in the same period of time. Whereas, the data revealed the comparison between the properties of each sample setup and its effectiveness in attracting golden apple snail. The data shows that the sample setup B was more effective in trapping golden apple snail than in setup A because of the help of the improvised propeller that is responsible in spreading the scent in the rice field.

#### DISCUSSIONS

It was shown in the study that the air produced by the improvised propeller with the research product helped spread out the scent of the alcohol content of the beer which made the golden apple snail more attracted to it. Spontaneous movement of the particles of substances was caused by thermal agitation and diffusion from higher concentration to lower concentration.

**KEYWORDS:** Reducing the golden apple snail in the rice field.

**SUBMISSION ID:** R04A-BATANP-2109



**Simulation Games in Teaching Newton's Law of Motion among grade eight students at Anselmo A. Sandoval Memorial National High School**

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MNHS

**Abstract**

**INTRODUCTION**

The standard for science education provides expectations for the development of understanding for students through the entire course of the K to 12 education and beyond. In the Philippines education system, science aims to help every Filipino learner gain a functional understanding of scientific concept and principles linked with real life and values necessary to analyze and solve day-to-day problems. One of the aims of K - 12 education program is to use a student - centered approach in teaching. Learners today have endless glue to the use of technology affecting their performance in school. A breakthrough on curriculum challenges and improving student's performance researchers conducted a study of using simulation games in teaching Science concept.

**METHODS**

The descriptive method was used in this study. There were 48 students of Grade 8 Davis, which became the respondent of the study. All of them were present during presentation and discussion of lesson. Thus, no sampling method was used. To interpret data gathered, statistical tool such as frequency, percentage and ranking are used.

**RESULTS**

The results of this research pointed out that the use of simulation games in teaching Newton's law of motion creates significant impact on the improvement of students' level of performance. The research showed that Minute to win it, Who Wants to be Millionaire and team games tournament showed remarkable influence in the advancement of student's performance.

**DISCUSSIONS**

Based on the results, majority of the students had above average performance in teaching Newton's law of motion through simulation games. Simulation Games featured challenge activities like in which students do or participate. Recommendations based on the results of the study include the continuous use. The researcher also recommends establishment and maintenance of the program to integrate simulation games in teaching Science.

**KEYWORDS:** Simulation Games, Newton's Law Motion

**SUBMISSION ID: R04A-BATANP-1504**

## **SoDiCu: Its' Efficiency and Efficacy as an Alternative Source of Energy**

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National High School

(Adviser: Mac Millan Tobeo)

### **Abstract**

#### **INTRODUCTION**

People are creative and their creativity helped them to make an alternative source of energy, which can be recycled energy. In energy recycling, electric motors are very common items used. These electric motors are either alternating current (AC) or direct current (DC) motors. Others used solar panels, which convert light energy into electrical energy to produce electricity. To generate the flow of electricity, solar panel works by allowing photons or particles of light to knock electrons free from atoms. The researchers would reuse materials in order to produce energy coming from DC motor and solar panel. This solar panel is a 4x6 inches and came from old gadgets like solar radio and solar lamp. However, DC motor that has 3.5 voltages is the smallest capacity of motor up to 12 voltages of DC motor where the energy will be generated and regulated in control system.

#### **METHODS**

The descriptive method was used in this study to assess the efficiency and efficacy of energy recycling in the form of DC motor and solar panel. This study involved the 41 students of Science, Technology, Engineering and Mathematics (STEM) Grades 11 and 12 of Alupay National High School. Survey-questionnaire, observation, direct interview and trials were used in gathering data needed to determine the extent of awareness of the student regarding the features of DC motor and solar panel, its efficiency and efficacy at home, in school, and offices.

#### **RESULTS**

DC electricity cannot be used directly by common household appliances; so it first needs to be converted to Alternating Current (AC) as for its efficiency. A solar inverter performs the conversion - a separate component located some distance from the array. A number of solar panels may be routed through a single converter. Moreover, as for the SoDiCu efficacy, it includes simpler and safer installation, improved electricity harvest and the elimination or reduction of other componentry.

#### **DISCUSSIONS**

Solar panel containing the photovoltaic cells generates direct current (DC) electricity. This DC electricity can be used to charge the appliances or gadgets at home, schools and offices connected that use direct current electricity. Devices called inverters are used on photovoltaic cell modules or arrays to convert the DC electricity to AC electricity. The researchers also used recycled materials coming from other devices at home to produce this output named SoDiCu.

**KEYWORDS:** Solar energy, Direct Current, Renewable Energy, Efficiency, Efficacy, Electricity

**SUBMISSION ID: R04A-BATANP-0038**

## **S-Quad Goals: Enhanced Performance Involving Conic Sections of Grade 11 Stem Students**

Arlyn A. Butac, Department of Education

### **Abstract**

#### **INTRODUCTION**

The Science Technology Engineering and Mathematics (STEM) students who are expected to enjoy learning Math, still show lack of appreciation on the subject as revealed in the general weighted average of STEM 1-11 last S.Y. 2017-2018 in the Math related subjects. Also with the results of 2016-2017 National Achievement Test for Grade 10, in the Division of Quirino, Mathematics ranked second least among five subjects. To address this situation, the researcher proposed an intervention named as SQUAD Goals. This research was conducted to test the effectiveness of SQUAD Goals in enhancing the performance of the STEM GRADE 11.

#### **METHODS**

The researcher purposively chose the two sections of STEM Grade 11 as the respondents, STEM 1(control group) and STEM 2 (experimental group). Pre-test and Post-test was conducted to the experimental and control group. However, the intervention was only implemented on the experimental group. The statistical used to analyze the data are Mean, Paired-Sample T-test, Independent Sample T-test and Eta Squared through the use of SPSS Version 2.1.

#### **RESULTS**

SQUAD Goals was done through a peer tutorial style. It was done 10 minutes after class and during their vacant periods. Their references in their discussions were from the book and a validated problem set given by the teacher. The squad that completed the sessions and with highest correct answers were given rewards and certificates of completion. Through this, the performance of the students on the said subject was enhanced. Statistically, there was a great difference on using the intervention to the experimental group compared to the non- implementation on the control group. The effect size of the use of SQUAD Goals was large. We can infer that the intervention SQUAD Goals significantly helps in enhancing the performance of the learners in Pre-calculus.

#### **DISCUSSIONS**

Learner's performance requires efficient interventions that will help students upgrade and improve to meet the set standards for 21st Century learners who are capable on Problem Solving, Critical Thinking and Literature Skills. Thus, the researcher propose the SQUAD Goals as an intervention to be utilized by the teachers teaching not just Math related subjects but is also applicable to other subjects.

**KEYWORDS:** SQUAD Goals, Performance of STEM Grade 11

**SUBMISSION ID:** R002-QUIRIN-0094

**Strategic Intervention Material: Its Effect to the Mastery Level in Specific Competencies in Science of the Grade III Camia Pupils of Hinatuan North Central Elementary School**

Emely Bandola, Hinatuan North Central ES

**Abstract**

**INTRODUCTION**

This research started when 34% or 11 out of 32 Grade III pupils of Hinatuan North Central Elementary School were not able to master the competency on identifying and describing the different parts of the plants. Hence, this competency was considered least-learned. In this regard, certain Strategic Intervention Material must be given to enhance the skill of the pupils and develop in them the least learned competency.

**METHODS**

Experimental research design was applied, employing purposive sampling. Seven males and four females, total of 11 were identified pupils based on the result of the item analysis and mean percentage score after the second quarterly test and weekly teacher-made test. As to statistical treatment, Weighted Mean was used to determine the level of mastery in specific competencies in science of the identified pupils, and T-test was used in identifying the significant difference on the increase in the result before and after the SIM was implemented.

**RESULTS**

The individual scores of the identified pupils obtained before and after the implementation fall under below the 75% mastery level. The mastery level before the implementation of the SIM was 63.64% and it then reached to 91.36% after the SIM was implemented. There was a significant difference between the mean score in the pretest and posttest before and after the implementation of the SIM since the P-value is lesser than 0.05.

**DISCUSSIONS**

Based on the interpretations and analysis, the SIM "Lunhaw Ka Pa Ba?" has a great affect the mastery level of the Grade III Camia identified pupils in the competency identifying and describing parts of the plants. Therefore, teachers teaching the same concept and strategies may utilize the material and refer in to it in order for the low performing pupils to strengthen, deepen the understanding and master the competency and skill.

**KEYWORDS:** Strategic intervention material, mastery level, least-learned competency

**SUBMISSION ID: R013-SURSUR-0003**

## **Strategies Employed by the Science Teachers Addressing the Low Performance of Tangway Loob Elementary School in the NAT**

Angelina De Belen, Tangway Loob Elementary School

### **Abstract**

#### **INTRODUCTION**

This study was conducted due to the low performance of our school in the National Achievement test. Teaching strategies help the students learn the lessons and develop achievable goals in the future. This is the reason why the researcher attempted to determine strategies by Science teachers addressing the low performance of Tangway Loob Elementary School pupils in the said test. This study consisted of one school head, four Science teachers and 120 pupils from grade three to six classes. In order to gather the needed information about the perceptions of both the school head and the pupils on the extent of the implementation of the study, two sets of questionnaires have been prepared by the researcher and a checklist for teachers. The data to be gathered will be statistically treated with the use of weighted mean and SD. The results revealed that strategies employed by teachers teaching Science play a vital role in the performance of pupils.

#### **METHODS**

This study employed the descriptive method of research. It involved the collection of data in the attempt to test the hypotheses and so with the different questions posted as regards the status of the subjects under the study. It tried to describe the perceptions of the school head and the pupils on the strategies employed by teachers teaching Science addressing the low performance of Tangway Loob Elementary School pupils in the National Achievement Test.

#### **RESULTS**

For school head, result showed that the highest rating was given on statement that Science teachers provide cooperative learning environment during the teaching process. It got an average mean of 95 %. For pupils, result showed that the statement that teachers formulate good questions during discussion got highest weighted mean of 98.67%. The teachers' strategy that greatly affects the low performance of pupils in Science was teachers use video clips and other modern technologies in teaching Science. It got an average mean of 35.83%.

#### **DISCUSSIONS**

Based on the result, there is a collaborative effort of pupils during group activities has a great impact on the learning process of the pupils and learning lies in the teacher's skill in the art of questioning to understand and deepen the concept needed to be learned. This strengthens the study of Department of Education Secretary Andrew Gonzales that teaching must be given sufficient demonstration materials and ready with whatever methods will make Science teaching successful.

**KEYWORDS:** Teaching Strategies, Descriptive Method, Science, Performance

**SUBMISSION ID: R04A-LIPAC1-0114**

## **Strengthen Process Skills, Attitudes and Reinforce Knowledge in Science Content and Pedagogy through Frequent and Friendly Monitoring**

Ma. Fe Lorelie Amon, Department of Education

### **Abstract**

#### **INTRODUCTION**

For the past years, Science always ranks second to the lowest in NAT and even in the result of quarterly examination in our division. According to Johnstone "the difficulties of learning science are related to the nature of science itself and to the methods to which science is customarily taught". A huge barrier to learning can be caused by the teachers themselves. If the teacher lacks confidence in their abilities, has poor subject knowledge and is not effective in their transmission of information, the content of the lesson is going to be even more difficult to learn. Teachers must consider the relevance of a topic to their learners and if necessary find an innovative way to make it relevant.

#### **METHODS**

Descriptive method of research was used through Intensive Instructional Supervision of Grade 6 Science class like frequent observation, conduct on the spot test and monitor record result of formative test every day. Holding of DSLAC on content, proper handling of laboratory apparatus and the conduct of experiments was also conducted with data collected through quantitative analysis of the pre and posttest.

#### **RESULTS**

The result of the concluded first and second quarterly examination shows that there is an increase of 3.39% from the overall MPS. More over through the program the actual result of the second quarterly exam exceeded the target by 0.05% be s

#### **DISCUSSIONS**

The result shows that addressing the needs of the 15 Science Elementary teachers of the West 3 District in terms of content and pedagogy through the different intervention applied helped them in developing mastery in Science. It also developed the scientific attitudes and skills of the teachers in doing experiments that helped the pupils developed their scientific process skills in return. This helped the students enjoy learning as reflected in the result of their quarterly exam.

.73 The actual result is 79.62. While in the second grading test result increases to 70.21 target by .05

**KEYWORDS:** Science Skills, NAT, Supervision

**SUBMISSION ID: R04A-CALAMB-0401**

## **Strengthening Instructional Technology-Based Science Instruction to Improve Pupil Performance**

Teodora Alumno, Department of Education

### **Abstract**

#### **INTRODUCTION**

The study was conducted to determine the effect of conventional and non-conventional technology to improve the performance of pupils in Science IV.

#### **METHODS**

The Static-Group Pretest-Posttest Design was used to answer the problems in the study. The comparison group was exposed to conventional instructional technology while the experimental group was taught using non-conventional instructional technology. The posttest was administered after the lessons were discussed.

#### **RESULTS**

Findings showed that the levels of performance of the comparison and experimental group in Science in their pre- and posttest scores are Fair and Very Good. There is a significant difference in the pre- and posttest scores of the Grade IV pupils in Science using conventional and non-conventional instructional technology. However, there is no significant difference in the performance of the Grade IV pupils using conventional and non-conventional instructional technology as to pretest and posttest. However, there is no significant difference in the improvement in Science between the two groups, it should be noted that improvement of the comparison group is as high as the improvement of the experimental group.

#### **DISCUSSIONS**

The improvement of pupil performance is influence by the use of instructional technology but is not primarily dependent on it. Rather, performance improvement is a sum of the integration of the multi-facets of instruction enhanced by tools named technology.

**KEYWORDS:** Technology-based Science Instruction, Pupil Performance

**SUBMISSION ID: R04A-CAVITP-0909**

## **Strengthening Property of Glucose Links in Protein Films**

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(Adviser: Criselda De Chavez)

### **Abstract**

#### **INTRODUCTION**

The use of plastics as a form of packaging has surged with the aftermath of the Industrial age. It is known for its durability under pressure. Other qualities include its barrier against moisture and liquids. However, despite all its positive attributes, plastics are non- biodegradable, which is a problem against the rising concerns for the environment. In response to these concerns, the researcher attempted to develop a biodegradable plastic film derived from a protein based gelatin. Individually, the protein film is weak under stress. Nevertheless, it is theorized that the addition of glucose during the formation of the protein film strengthens the structure of the product by acting as molecular scaffolding.

#### **METHODS**

The researchers used experimental method in this study. An experiment was conducted with a control group and four other groups with differing amounts of glucose. The product's tensile strength was determined by setting the product on an axis and putting different but continuous amount of weight. The instance where the product begins to show signs of irreversible deformation and fracturing into multiple pieces is noted. The obtained raw data is subjected under a Pearson test of significance in order to show the significant relationship between the amount of glucose and the resulting tensile strength for each trial.

#### **RESULTS**

The experiment resulted in 80.02% relationship between the amount of glucose and the pressure range before the product experiences irreversible deformation and 93.17% before the fracture point. At  $\hat{t} \pm = .01$ , this relationship is significant. For a more specific relationship, there is an increase of 200% in endurable stress with every 5 grams of glucose added to the protein film and a similar increase in the fracture point. It can also be noted that the amount of glucose roofs at 35 grams before the product becomes brittle and the tensile strength formula becomes unusable. In conclusion, the addition of glucose in protein films strengthens its tensile strength.

#### **DISCUSSIONS**

The material can be utilized for single-use plastics that are designed to break down after use. The material procured from this experiment, however is deficient in other qualities of packaging such as; thermal and static insulation, and decrease of biodegradability. Researchers recommended that future replications utilize the readiness of carbohydrate polymers to bond with R-groups, which can change the whole property of the product.

**KEYWORDS:** plastics, glucose, stress

**SUBMISSION ID: R04A-CALAMB-0117**



## **Supplemental Science Learning Packet For Beginning and Developing Grade 7 Students in Public Secondary Schools**

Teresita Del Rio, Inosloban-Marawoy Integrated National High School

### **Abstract**

#### **INTRODUCTION**

Education in the Philippines has undergone a major transformation and was further strengthened to attune it to the changing academic landscape and keep up with the latest development in the field. This study focused on the development of a supplemental science-learning packet for beginning and developing Grade 7 students in the public secondary schools in the North District of Lipa City. The supplemental science-learning packet was prepared based on the findings and analysis of data.

#### **METHODS**

The study used the descriptive method of research using a researcher-made questionnaire as the main instrument for gathering data. Documentary analysis was also used to determine the proficiency level of the students. The respondents were 308 Grade 7 students and 35 science teachers from the four public secondary schools in the North District, Division of Lipa City during School Year 2015-2016. Frequency, mean and Pearson's Product Moment Coefficient of Correlation were the statistical tools applied in treating the data gathered.

#### **RESULTS**

Based on the findings, the proficiency level of the students in Chemistry fall under the developing level, Biology in Approaching Proficiency level, Physics in Developing level and Earth Science falls under the Approaching Proficiency level. On the other hand, the teachers' assessment of the students' proficiency level on the learning competencies in the four learning areas; Chemistry, Biology, Physics and Earth Science falls under the Approaching Proficiency level. There is a significant relationship between the proficiency level of the students and the teachers' assessment on the students' proficiency level competencies. Different student-related problems are often met by the teachers in teaching the four learning areas in science, and these served as the basis in developing the supplemental science-learning packet.

#### **DISCUSSIONS**

The results of the study recommended that science teachers should monitor the proficiency level of the students in each learning area in order to identify students who belong in the beginning and developing levels, thereby are developing their interest in learning and challenging them toward active involvement in science activities. The supplemental science-learning packet be reviewed, validated and tried in public secondary schools in order to address the needs of the students in learning science.

**KEYWORDS:** learning packet, supplemental, beginning, developing, approaching proficiency, proficiency

**SUBMISSION ID: R04A-LIPAC1-0157**

## **Sweet Orange (*Citrus sinensis*) as an Alternative Product Used in Aromatherapy**

Patricia Mae P. Abrigo, Calsen Science Club  
(Adviser: Criselda De Chavez)

### **Abstract**

#### **INTRODUCTION**

Essential oils in the modern age have been eminent in the society, yet such products are still costly in the market. A reason for this is the soaring expenses utilized upon the required processes of creating essential oils. In addition, an emerging dilemma upon the acidity of *Citrus sinensis* peels has been proven to degrade the quality of lands once disposed. Therefore,, this study aimed to resolve the aforementioned problems, and is accomplished through extracting the essential oil from the peel and making a product out of it - liquid and powdered form, and assess how long the fragrance will last.

#### **METHODS**

Two set-ups were created, Set-up A for the liquid form and Set-up B for powdered form, were observed and analyzed in terms of increasing time intervals. This is to determine which of the two experimental set-ups is best to be utilized in terms of how long the fragrance will last, respectively. Each set-up undergoes three trials with increasing amount of product used, and was observed in two types of room - open and close space. The data were gathered after the smell completely vanished approximately after 16 days.

#### **RESULTS**

At 0.01 level of significance, it was concluded that the relationship between the amount of liquid of essential oil, which is Set-up A, and the length of time in an open room is positive, as indicated by the p-value of 0.005 respectively. With this said, the lasting of fragrance was directly proportional to the product used as it increases. In powdered form, which is Set-up B, at the same level of significance, the computed value was highly correlated. This indicates that the grams have a significant relationship to the length of time that the scent would last. Overall, it was concluded that the powdered form's fragrance last longer than the liquid form.

#### **DISCUSSIONS**

The results showed the need for improvement of the liquid form of the attar in terms of the lasting of its aroma in both type of rooms. In addition, the researcher also recommends utilizing and exploring other forms of experimentation and testing to attain more accuracy. Moreover, the powdered form was highly recommended as it is cheaper and the fragrance last longer than the liquid form.

**KEYWORDS:** Citrus peel, extraction, scent

**SUBMISSION ID:** R04A-CALAMB-0120

## **T.A.S.E.R. (The Anti-theft Shocking Electric Robot)**

Jean Exequiel D. Sosa, Kristian Daniel D. Mojica, & Melson Angelo V.  
Dacanay

### **Abstract**

#### **INTRODUCTION**

The theft was intentionally taking someone else property. It could be dangerous for us because theft was unpredictable. It also commonly occurs at nighttime, the people were sleeping so that the intruder could attack your house without you even noticed it. A taser is an electroshock device that was useful in defending yourself. The person that electroshocked by the Taser would lose his control over his/her body. However, based on the situation, the Taser was used during daytime or when you were awake. This research study aimed to make innovation on TASER, it was the T.A.S.E.R. (The Anti-theft Shocking Electric Robot).

#### **METHODS**

Anchored with the theme "Security and Defense", the TASER can also defend your important things by running toward the person and electrifying it when detected. The robot would be equipped with a Sumobot, LED, and distance sensor. One hundred trials would be made to test the accuracy of the distance sensor can activate the Taser. If any error occurs, the accuracy of the sensors would be observed and analyzed. Improvements for the placement and program of the distance sensor would be applied after determining the errors. It was designed to work in a real-life situation wherein the owner is sleeping and the intruder invades the house.

#### **RESULTS**

A total of six hundred trials were done for the robot. Three hundred trials were conducted for the accuracy of the front, left and right distance sensor. Another three hundred trials were done for the activation of the led. The lighting of led represented the activation of TASER and it will only activate when a distance sensor detected something successfully. The data for the accuracy of each of the sensor and the activation of the led when a sensor detected something were the same. The front distance sensor was 89% accurate, the left distance sensor was 77% accurate and the right distance sensor was 75%.

#### **DISCUSSIONS**

Generally, the accuracy of the three distance sensors was accurate. All of the sensors had the accuracy of over 50%, which was good. Since the LED lights when a sensor detected something, the TASER could also activate the moment the sensor detected something. In real life situation/s, the TASER could be useful when a theft happened to a house.

**KEYWORDS:** Taser, distance sensor, led, theft, sumobot

**SUBMISSION ID: R04A-CAVTP-1027**

**TABLET and Science Academic Performance of Grade 11 HUMSS  
Students of Maddela Comprehensive High School**

Shaila Tanglod, Department of Education

**Abstract**

**INTRODUCTION**

The K to 12 Basic Education Curriculum aims to provide sufficient time for mastery of concepts and skills, as stated in the Republic Act 10533. However, mastery of the competencies is not evident as revealed by the NAT results and the GWA grade of Grade 11 GAS and TVL students. Therefore, this research was conducted to test whether the utilization of Teamwork and Activity Based Learning through Electronic Technology (TABLET) would significantly upgrade the Science Academic Performance of Grade 11 HUMSS Students of Maddela Comprehensive High School.

**METHODS**

This research employs purposive sampling in the form of taking all the 43 HUMSS students as the appropriate participants of the study. Pre-test posttest research design was utilized in this study. Pretest was given to the class before the implementation of the TABLET to draw-out conclusion based on the information given. After TABLET was utilized, a posttest measuring the same competencies was given to the participants to find out if there is significant difference in their scores. The statistical tools used to analyze the data were Mean, Standard Deviation, Paired Sample T-test and Eta2 through the Statistical Package for Social Sciences (SPSS version 21).

**RESULTS**

The TABLET was used for activities with computer aided instructional materials. Students work as a team in doing the assigned task and presented creatively using technology as well. Through this, students got an achievement level of moving towards mastery on the competency based from their posttest mean score of  $M = 22.90$ . This implies that there was improvement in the level of achievement and enhancement of the required skills after the implementation of the intervention. There is also a significant difference on the Pre-and-Post Tests scores of ( $t = -14.297$ ,  $p < 0.0005$ ) after utilizing the TABLET. The effect size of TABLET was large. This implies that the intervention used among the participants significantly help in enhancing their level of Science academic performance.

**DISCUSSIONS**

The result revealed that the performance of the students' needs more interventions, techniques and strategies to meet the required 21st Century skills to be developed by the students based from the aforementioned results. Therefore, the researcher proposes the application of TABLET for the lessons on Earth System and should be adopted as one of the teaching technique and strategies in teaching Earth Science.

**KEYWORDS:** TABLET, Science Academic Performance, Paired Sample T-test, eta

**SUBMISSION ID: R002-QUIRIN-0085**

**Teachers' Practices in Promoting Positive Climate in Science Classes in  
Public Elementary Schools, Division of Batangas City : Basis for a  
Course of Action**

Jerilee Dugay, Wawa Elementary School

**Abstract**

**INTRODUCTION**

A positive classroom climate must be maintained to develop the pupils' varied competencies and turn them into citizens of good value to society when they grow up. It is thus, the role of the teacher to make the classroom worth living and worth learning. Hence, the teacher's practices in maintaining a positive classroom climate could be a good area of research as it is one of the educational goals to prepare the pupils for worthy citizenship.

**METHODS**

This study used the descriptive method of research since it aimed to describe the teachers' employment of practices in maintaining a positive classroom climate in science classes in selected public elementary schools in Division of Batangas City. The statistical tools applied were weighted mean, t Test, one-way analysis of variance and Pearson product Moment Correlation Coefficient.

**RESULTS**

In maintaining a positive classroom climate, the teachers manifest pleasant behavior worthy of emulation; maintain the cleanliness, orderliness, convenience and attractiveness of classroom facilities; implement teaching-learning activities effectively; and tolerate open lines of communication and sharing of ideas. The teachers' assessment of the extent of practices used in maintaining a positive classroom climate exceeds that of the students, since self-evaluation tends to be more favorable to the self than that of others' evaluation. All four variables that include Teachers' Behavior, Facility Maintenance, Implementing Teaching-Learning Activities and Communication Line contributes almost equally in maintaining a positive classroom climate.

**DISCUSSIONS**

The school heads should further encourage and guide the teachers in promoting not only a positive classroom climate but that of an over-all harmonious school climate. The teachers, in general, should not only live up to the practices they currently employ in maintaining a positive classroom climate, but should also try further innovations to improve and enhance further the said practices. Teachers must also conduct both classroom and school activities designed to suit the attainment of the goals of the K to 12 curriculum to ensure that the new Department of Education program could be implemented at its best and to the fullest.

**KEYWORDS:** Communication, Teaching-Learning

**SUBMISSION ID: R04A-BATANC-0365**

## **Teaching Competencies among Science Teachers at Gulod Elementary School: Basis for Capability Building Program**

Clarita Gutierrez, Department of Education

### **Abstract**

#### **INTRODUCTION**

This research study was conducted to analyze the teaching competencies of Science Teachers in Gulod Elementary School. Specifically, it sought answers to the following questions: What are the profile of Science teachers in Gulod Elementary School in terms of sex, age, and years in the service teaching Science? How may the level of competencies among Science teachers of Gulod Elementary School be described in terms of? A. Professional knowledge and Skills B. Professional Attitudes Professional Practice. To what extent do the teachers applied the teaching competencies as assessed by school heads. What capability building program is needed by the Science teachers based from their level of competencies?

#### **METHODS**

The researcher used the descriptive method of research in education. In the collection of data, the survey type was utilized. The study has a population of 587 pupils including Kindergarten pupils and 18 teachers. From the 18 teachers only four (4) are teaching Science in different grade levels.

#### **RESULTS**

1. Profile of four Science teachers in Gulod Elementary School differs in age, sex and years in service teaching Science.
2. Four teachers also differ in Science teaching competencies in terms of professional knowledge and skills, attributes and practice assessed by the school head. One teacher falls on basic, one beginner, one proficient and one highly proficient.
3. Science teachers of Gulod Elementary School applied the Science teaching competencies under professional knowledge, and professional knowledge on general pedagogy to a great extent. However, under the professional attribute, models the development and improvement implicit in lifelong learning along with risk taking and flexibility entailed in the testing of new ideas and changes in practice is applied by the teachers to some extent only.

#### **DISCUSSIONS**

A set of questionnaire was used as a main data gathering instruments supported by the researcher's oral interview. The teachers were asked to answer the prepared questionnaires based from Brawner (2014). Questionnaires have Three parts. The first part asked about the demographic profile of Science teachers, second part the assessment of teachers' competencies in terms of Professional knowledge and Skills, Professional Attitudes and Professional Practice.

**KEYWORDS:** science, competencies, capability building

**SUBMISSION ID: R04A-BATANC-0070**

## **Technology-Based Application in Enriching Teaching Science 10**

Rosalyn Daz, Gumaus National High School

### **Abstract**

#### **INTRODUCTION**

This study was focused on technology-based application in enriching teaching Science 10. Specifically, it will answer the following questions: 1.) What are the current approaches utilized in teaching Science among Grade 10 students in the secondary schools in Paracale and Jose Panganiban Clusters? 2.) How do these approaches promote learning among Grade 10 science students with regards to recitation, participation and written examination? 3.) What are the challenges encountered by the teachers and students in the teaching and learning process along instruction, instructional materials, students and other challenges? 4.) What technology- based material could be developed in teaching Grade 10 Science?

#### **METHODS**

The study employed mixed method research which involved qualitative and quantitative data. Data gathered through the use of an interview guide and questionnaire checklist crafted by the researcher. Data were analyzed and interpreted through weighted mean, frequency count and ranking.

The locale of the study was Paracale and Jose Panganiban Cluster. The respondents of the study were fifteen (15) Grade 10 teachers and three hundred twenty one (321) students from Paracale and Jose Panganiban Cluster. Total enumeration was done in determining the respondent-teachers while Slovin's formula was used to determine the number of respondent-students.

#### **RESULTS**

In the light of the findings of the study, the following conclusions were drawn: 1) Teachers utilized different teaching approaches and strategies catering diverse learners and to improve students' performance specifically in Science 10 subject. 2) The results imply that the approaches promote learning along recitation, participation and written examination to a moderate extent only. 3) Based on the findings, teachers and students have encountered challenges along instruction, instructional materials, students and other challenges; and 4) Based on the above findings on the challenges encountered by the teachers and students in the teaching and learning process in Grade 10 science subject, a technology- based material was developed and proposed. This technology- based material refers to as "SCIMOD: An Android-based Science Module for Grade 10 Students". To cope up with the recent trends, an android-based science application module was developed as an alternative learning material for Grade 10 science students.

#### **DISCUSSIONS**

Based from the conclusions, the researcher hereby recommends the following: 1) Teachers should create learning environments which are more interactive, to integrate technology where applicable into the learning experience, and to use collaborative learning strategies when appropriate and based on the learning needs and abilities of the diverse learners. They must align lesson objectives, teaching methods and or approaches and strategies, learning activities and instructional materials. They should also establish routines and procedures to maximize use of time, instructional materials and technology resources. 2) Teachers should have all the questions planned out ahead of time. Address the question to the entire class before asking a specific student to respond. Teachers should create a climate in which students are encouraged to ask questions. Listen attentively while the student is talking, do not interrupt and try to find something positive to say about the comments of the students. They should employ classroom assessment methods that are consistent with curriculum standards. Always inform learners about the objectives of the lessons so that the latter will aim to meet or even exceed the standards. 3) Teachers should employ teaching approaches and instructional materials suited to the learning needs, skills and abilities of diverse learners, and 4) Based on the results of the study, a technology- based application to enrich Science 10 concepts is hereby recommended.

**KEYWORDS:** technology-based application in enriching teaching science 10

**SUBMISSION ID:** R005-CAMNOR-0044

**The Amazing Mole: Invisible Yet Incredible! - An Effective Teaching-Learning Tool in Increasing the Mastery Level in Science of Grade 9 Students in Camarines Norte National High School**

Romeo Basister, Camarines Norte National HS

**Abstract**

**INTRODUCTION**

Teachers were confronted by the dilemma of low mastery level of students that lead to their overall poor performance in class. This problem gave rise to the conceptualization of this Strategic Intervention Material to help students develop mastery level and improve their academic performance in Science. The SIM provided the students with unique and easy tool to learn the desired KSAs on in the "Determination of percentage composition of a compound given their chemical formula" , which they were not able to master during regular classroom teaching.

**METHODS**

This work utilized the descriptive qualitative-quantitative approaches. Identified Grade 9 students with failing grades in the second periodical examination, SY 2016-2017 were purposely selected as participants. The principal sources of data were the results of the survey questionnaires and results of pretest and post-test administered but the SIM served as the key instrument to address the problems in this study.

**RESULTS**

A pattern of preference was observed among the participants as to the effectiveness of the SIM. The material was rated with a 3.84 weighted mean which indicated that the concepts presented were clearly understood. The pretest and post-test MPLs showed that the mastery level of the respondents increased from 21.22 to 36.48. Further, the t-test showed a significant difference in the mean scores as evident by the higher calculated z-value of 21.583 over the tabulated p-value of 0.5286.

**DISCUSSIONS**

The findings of this study implied that the SIM truly helped students in increasing the mastery level thus improving their academic performance in Science. These findings conformed to the study conducted by other authors. This study recommends that teachers must use SIM as teaching innovation to provide students with a better tool in understanding the concepts being taught. Teachers were encouraged to conduct more related studies to further validate its effectiveness. Further, this study recommends that Department of Education officials and school administrators should provide assistance and support to the teachers in the preparation of well-crafted SIMs through conduct of seminar- workshops and the likes.

**KEYWORDS:** Effectiveness of Strategic Intervention Material

**SUBMISSION ID: R005-CAMNOR-0030**



## **The Behavior of the Three Pomeranians in Response to the Three Different Settings per Month**

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Batilo, Cavite National Science High School

### **Abstract**

#### **INTRODUCTION**

Dogs are man's best friend. We gravitate to touch and cuddle them without knowing that aggression might happen. No matter how appealing and cute they are, their aggression may lead to sickness or worse, death. Aggression is one of the problems in their behavior and can sometimes may not be controlled. The settings on where they are taken cared of may be one of the factors of why they behave in such way. The proposed solution is to identify which of the settings will they behave less aggressive by doing a test. This research will help a lot of people, especially dog owners, to help understand dogs and their behaviors.

#### **METHODS**

Pomeranians were the chosen breed and three Pomeranians were used as samples to be more precise with the data. The Pomeranians were named Sample A, Sample B, and Sample C. The Pomeranians acclimatized with their surroundings for a week in each setting. Three different settings were used and the first setting was in cage, second was in a leash and the last setting was free inside the house. These settings were named Setup A, Setup B, and Setup C respectively. After the experimentation, the puppies were given to their rightful owners. The observed behaviors were put into an ethogram for the analysis of the total of the results.

#### **RESULTS**

The setting that the three Pomeranians got the most aggressive behavior was being inside the cage while the setting that got the three Pomeranians less aggressive was being leashed and the setting that got the Pomeranian puppies to exhibit the least aggressive behavior was the setting being freed inside the house. Comparing the three Pomeranian puppies named as Sample A, Sample B, and Sample C, the Pomeranian puppy that got the most aggressive given the three months experimentation with the three different setting assigned each month was Sample A while Sample C got the least aggressive, and Sample B was the most friendly out of the three.

#### **DISCUSSIONS**

The results given is a proof that a dog's behavior could lead to aggression base on how a person treats its dog and one factor could be the place where it lives. In order to establish a friendly relationship towards its dog, it would be advisable to avoid putting the dog inside a cage or being leashed. It would be the best if it could roam around the house for the dog to feel freedom and for it to be physically fit with good social skills.

**KEYWORDS:** Dogs, Small Dog Syndrome, Pomeranians, Aggression, Settings, Behavior

**SUBMISSION ID: R04A-CAVITP-1046**

## **The Effect of Inquiry-Based Learning in Academic Achievement in Science of Grade 5 Pupils in Indang East Elementary School**

Cecilia Crystal, Department of Education - Cavite

### **Abstract**

#### **INTRODUCTION**

One of the most important and pervasive goals of schooling is to teach students to think. All school subjects should share in accomplishing this overall goal. Inquiry Based Learning helps develop students' understanding of the world around them through gathering knowledge. New knowledge is acquired as students collect data, analyze data, and solve problems. Through IBL, students learn not only how to ask questions and figure out the answers, but they also learn what questions are important to ask.

#### **METHODS**

The researcher decided to enhance the academic achievement of her Grade V pupils through the inquiry-based activities that she implemented. Through observation and summative assessments, the proponent identified ten (10) pupils who did not perform well on their class. The students' Periodical Examination results were used to recognize their performance.

#### **RESULTS**

The results revealed that through Inquiry based learning, the identified low performer pupils have improved in their third Quarterly Examination. Result showed that from an average of 29.9 %, their test scores went up to an average of 52.7%. It was an improvement of 27.4%. In addition, the remediation and activities patterned after the science process skills improved the confidence of the pupils in Science.

#### **DISCUSSIONS**

Informational reading materials for background knowledge about the problem enabled the pupils to allocate time to read materials and discuss the content. The teacher-researcher scaffolded instruction for guiding the pupils' questions and modelling information about the lessons presented, the pupils worked together by thinking about the questions, engaging in discussion with group members, and deciding how to proceed with the experiment to solve the problem. The teacher rounded between groups in order to facilitate learning, but did not provide direct answers for pupils when questions are asked. In drawing of conclusion of the lesson, pupils wrote about what they had learned and how they solved the problem in their journals contributed to the success of the project. The procedure was repeated for the remaining quarters of the school year.

**KEYWORDS:** Inquiry Based Learning helps develop students' understanding of the world

**SUBMISSION ID: R04A-CAVITP-0995**

## **The Effect of Video Clips in Science Instruction among Grade Four Pupils**

Rhodora Wein

### **Abstract**

### **INTRODUCTION**

Technology nowadays is common among schools, offices, homes and to every individual as this supports learning this helps in developing knowledge, wherein integration is the use of technology to enhance, present the lesson to the learners. Video as a change instrument in the classroom has undertaken unique cycle of adaptation overtime. Video based materials boost student creativity and cooperation. Access to video can help motivate learners create a distinctive or text for their learning experience (Greenberg, A., Barnett, T. L., & Nicholls, J. A. F. (2007). Teaching is experiential learning: Adoption of an innovative course in an MBA marketing curriculum. *Journal of Marketing Education*, 29 (1), 25-33.) Like other public schools, Gulod Malaya Elementary School aims to provide quality education for all the enrollees of the school.

### **METHODS**

The respondents of the action research were all the Grade Four-Section CariÅ^osa with 57 pupils and Grade Four-Section Singkil with 53 pupils of Gulod Malaya Elementary School. The researcher identified the least mastered skills of Science 4 of the previous school year 2017-2018. The researcher downloaded and compiled video clips from the internet based on the identified least mastered skills

Experimental research was used because it is the only type of research that directly attempts to influence a particular variable and it is the only type that can really test hypotheses about cause and effect relationships. The researcher made of traditional activity in the different lessons in Science 4.

### **RESULTS**

Science 4 got 15.01 mean with mean percentage score MPS of 37.50 %, 52 pupils out of 230 pupils got 75% criterion of the school year 2017-2018. Top 5 least mastered skills in the second quarter of the last school year 2017-2018, which served as the basis for the researcher for the compilation of video clips.

### **DISCUSSIONS**

This implied that the use of compiled videos in Science instruction had a significant effect in terms of performance of the Grade Four pupils of Gulod Malaya Elementary School. But on the other hand, teaching Grade Four pupils in without using the compiled video clips had to improve their performance in their periodic test though with the use of compiled videos had better improvement than the other one.

**KEYWORDS:** VIDEO CLIPS IN SCIENCE

**SUBMISSION ID:** R04A-RIZALP-0278

## **The Effectiveness of Gizmos as an Interactive Simulation Tool in Teaching Science 10 to Students of Kaytitinga National High School**

Conelisa Navales, Department of Education - Cavite

### **Abstract**

#### **INTRODUCTION**

In the Philippines, much efforts have been directed to improve science education. However, studies have shown that many of our Filipino students are not attaining functional literacy in science, making them difficult to meet the challenges posed by our rapidly changing world. This study was conducted to explore how learners interpret scientific concepts when demonstrated with animated instructional technologies, specifically computer simulation.

#### **METHODS**

Selected Grade 10 students from Kaytitinga National High School were used as respondents in the study. The control group was exposed to traditional method of teaching while the experimental group was exposed to Gizmos simulation developed by Explore Learning. Prior to the treatment, a pre-test was administered before the start of third quarter and at the conclusion of the quarter, a post test was given to the same set of students. The result of the pre-test and post-test in each group was recorded and single-factor ANOVA was used for the statistical analysis of data.

#### **RESULTS**

Both the control and experimental groups have an increase in mean percentage score (MPS) between the pre-test and post-test results. Analysis of Variance (ANOVA) shows that there is a significant difference between the MPS of students exposed to computer simulation and students exposed to traditional teaching method. Since the finding is significant, it was further analyzed using the Scheffe's Test to determine where exactly the difference exists. The result shows that there is a significant difference in favor of the group with higher mean.

#### **DISCUSSIONS**

The researcher concludes that both the control and experimental groups showed positive transfer of learning. However, the improvement in the academic performance of students in experimental group is greater than those in the control group. Therefore, it can be interpreted that using Gizmos simulation as a tool in teaching Science is effective in enhancing the academic performance of students.

However, using simulations has limitations since they are often outside of the teacher's sphere of influence. It also requires more explanation before the exercise and when completed, requires a careful exposition of what has been learned which can be done by relating the experience of the students to the general principles involved. Nonetheless, simulations can be considered as a very effective approach in engaging students in an interactive science teaching.

**KEYWORDS:** computer simulation, educational technology, science education, Gizmos

**SUBMISSION ID: R04A-CAVTP-0028**

## **The Effectiveness of Strategic Intervention Materials (SIM) in Learning Types of Circuit Connection in Science of Grade Five**

Donna Laut

### **Abstract**

### **INTRODUCTION**

This study which was funded by the BERF investigated the effectiveness of Learning Types of Circuit Connection in Science using the Strategic Intervention Material. An experimental research was employed using the comparison results during the pre-test and post- test. The SIM focusing on the least mastered skill were developed. Performance from this group were closely monitored and showed that there is no significant effect on the pre-test before the intervention and had significant difference in the post - test after the intervention. SIM can give the opportunity to explore various ideas and concepts that would enrich their understanding of varied subject matters that sharpens their competencies.

### **METHODS**

This study used the following methods: 1.) Mean Percentage to compute the positive of Increase (+) /Negative of decrease (-); 2.) tabulation was used to determine the weighted average of pupils, table to be answered by the pupils.; 3.) A survey form of questionnaire was used to identify the significant effect of interventions conducted for the improvement of the least learned skill. This study used descriptive, comparative method of research in answering the problem on the improvement of Performance used on the Types of circuit connection as reflected on their general weighted average. A survey form of questionnaires was used to identify the significant effect of interventions conducted for the improvement of the least learned skill.

### **RESULTS**

The 35 numbers of test takers assessment was based on their correct answers, then item analyses was made. Table 1 showed that only (6) six pupils got nearing mastery level out of 35 number of respondents and 29 pupils did not mastered the skill presented by the researcher without using the SIM activity handbook. Table 3 showed evident results that after the fully implementation of Strategic Intervention Materials activity handbook.

The table 5 showed the Mean and the Mean Proficiency Level (MPL) of the class in pre-test and post test result were reflected. The result of pre-test was very low as initial assessment of the class with the MPL of 38%. The result of post-test was very high with MPL of 90%. The difference of MPL, improved to 52%.

### **DISCUSSIONS**

The result of the study showed that the use of Strategic Intervention Materials Activity Handbook (SIM) in learning types of circuit connection in science of grade five was highly effective and served as an innovation tool for the mastery of the lesson.

**KEYWORDS:** Keywords: Effectiveness of Strategic Intervention Materials Activity Handbook.

**SUBMISSION ID: R005-CAMSUR-0032**

## **The Effectiveness of Waste Vegetable as Effective Microorganism on Germinating Mung Bean**

Jhon Kimberly Taa, Looc Integrated School

### **Abstract**

#### **INTRODUCTION**

There are 1.3 billion tons of vegetable wasted every year on the markets of the Philippines and this potentially contributes to greenhouse gas emission especially on the production of methane that is 21 times more potent than carbon dioxide and is one of the most dangerous to the environment. Greenhouse gases causes the increase of the heat in the atmosphere by absorbing infrared which ultimately leads to global warming; Aside from greenhouse gases, synthetic fertilizer helps on crop production but their overuse has hardened the soil and decreased its fertility.

#### **METHODS**

Six methods were prepared in conducting this experiment, Germinating the Mung Bean where mung bean were germinated for three days in water then transferred in the soil and then observed for another 7 days, Preparing the Wasted Vegetable which are collected in the local market, Preparing the Sugar and Yeast Solution that helps on the fermentation process of the Effective Microorganism, testing the pH characteristic of the soil, And last is the Sealing and Fermentation Process where the Effective Microorganism were kept in a dark place for 7 days, Also 2 setups were prepared in this study for observing the growth of the mung bean, The Experimental Study where the Effective Microorganism was tested and Controlled Study where water only was tested.

#### **RESULTS**

After the observation on the growth of mung bean on The two setups, the results had shown that the Experimental Setup had shown a higher measurements with the Height of 13.83 cm and Leaf Area of 4.2cm rather than Controlled Setup with the height of 9.1 cm and Leaf Area of 2.2 cm , And the pH characteristic of the soil after the experimentation had shown to be red that indicates acidic, and soil with a pH characteristic of acidic is healthy to the plants.

#### **DISCUSSIONS**

The results had shown different measurements from the Experimental Setup with 13.83 cm on its height and 4.2cm on the leaf area and Controlled Setup with 9.1 cm of height and leaf area of 2.2 cm. This concludes that the Experimental Setup with Effective Microorganisms is effective on helping the growth of Mung Bean instead of the Controlled Setup with only water used. And, also the pH characteristic of the soil which is Acidic helps on the growth of the Mung Bean.

**KEYWORDS:** Effective Microorganism, Leaf Area, Mung Bean, Methane, Greenhouse gases, Synthetic Fertilizer

**SUBMISSION ID: R04A-CALAMB-0336**

## **The Efficacy of Neem Tree (*Azadirachta indica*) Leaves as an Ovicide and Larvicide for Mosquitoes**

Joel Rey Sevilla

### **Abstract**

#### **INTRODUCTION**

Neem Tree (*Azadirachta indica*) leaves opened another way to secure safety against mosquito's growth by monitoring larvicidal activity which helped to lessen the number of dengue cases in the community and in school. The researcher focused in the efficacy of Neem Tree leaves as an avicide and larvicide for mosquitoes, the differences between the various amounts of Neem leaves in terms of ovicidal activity and larvicidal property.

#### **METHODS**

The researcher prepared three samples with 25%, 50% and 75% concentrations. The leaves were detached from twigs and weighed. It has been dried for 20 minutes at 180oC using oven and cooled for 2 minutes. Blend the samples for 3 minutes then placed the powdered leaves in a black plastic, mixed with 250 ml of water. The samples were then placed in dark corners. The larvicidal activity of the neem tree leaves was evaluated by counting the number of larvae in the samples. It was observed from varying time such as; 6 hours, 24 hours and 48 hours respectively.

#### **RESULTS**

It shows that, in 24 hours for 25% concentration of neem tree leaves there are four mosquito eggs, while for 75% concentration there are 10 mosquito eggs. In 48 hours, for 25% concentration 1 egg was hatched, and 3 eggs remained in the OL trap. For 50% concentration, there are 3 mosquito eggs present, while in 75% concentration are 19 mosquitoes has been counted.

#### **DISCUSSIONS**

Based from the data gathered, the researcher found out that there is significance difference between the different concentrations of neem tree leaves in terms of its larvicidal and ovicidal property. It can be concluded that Neem Tree leaves with greater concentrations has the greater capability for larvicidal and ovicidal activity of mosquitoes.

**KEYWORDS:** neem tree, ovicidal, larvicidal, mosquitoes

**SUBMISSION ID: R04A-CALAMB-0085**

## **The Efficay of Carica Papaya Seeds as an Additive in Making Chicken Feeds**

Princess Castro, Rosario National High School

### **Abstract**

#### **INTRODUCTION**

These day chickens are one of the most in demand product in the market. Many bacteria are living inside the body of the chicken may cause different types of diseases that can harm the chicken and the people eating it. This study determined the efficacy of Carica papaya seeds as an additive in making chicken feeds.

#### **METHODS**

Pre-test and posttest design was used. Feed intake was got daily via weigh-back mechanism by subtracting left-over feed from feed served. Three concentrations were done in this study: 5g, 10g, 15g and each concentration has three broiler chickens who will take the feeds. The chicken feeds with *C. papaya* seeds was evaluated chemically. It was tested using the chemical analysis for chicken feeds called Proximate Composition test where in the percentage of the crude protein, crude fiber, ether extract, moisture, nitrogen free extract and ash. After acquiring the health status of the chicken after taking the feeds with *C. papaya* seeds the data will be used to determine whether there is a significant difference among the means of each *C. papaya* seeds concentration using one-way analysis of variance (ANOVA) and correlation for the significant relationship between feed intake and weight.

#### **RESULTS**

It was observed that the weight of the chickens with the concentration of 5 grams has the same weight as the chickens in 10 grams. Also the amount of added papaya seeds was positively correlated with the weight gain of the chicken ( $r = 0.96$ ,  $p > 5$ ). After using one-way analysis of variance (ANOVA) to determine the significant difference among the means of each broiler chicken (*Gallus gallus domesticus*) taking *C. papaya* seeds concentration there is a condition that if  $F < F_{crit}$ , the null hypothesis is accepted and the significant difference higher than 0.05 shows that the probability of its efficiency is low.

#### **DISCUSSIONS**

Based from the results, it is revealed that in a span of two weeks there was a change in their weight. It was recorded that there was 50g increase in the feed intake of the chicken after a week of feeding it with the chicken feeds with dried *Carica papaya* seeds. In the results of the study it was discovered that the group of chickens that were taking 10g and 15g of the feeds got the most weight gain after 14 days. The data's showed that there was a correlation between the amount of dried *Carica papaya* seeds added in the chicken feeds and weight gain of the broiler chicken as well as the feed intake of the chicken.<sup>1</sup>

**KEYWORDS:** Carica Papaya seeds, Chicken Feeds

**SUBMISSION ID:** R04A-CAVTP-0680



## **The Feasibility of Chili (*Capsicum frutescens*) Seeds as Alternative Ovicidal/Larvicidal Trap Pellets**

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(Adviser: Angeline Pagkaliwangan)

### **Abstract**

#### **INTRODUCTION**

Today's brilliant minds are in pursuit of ways to stop the world's crises and different diseases from worsening, hopefully marking their total elimination. The DOST have come up with a solution to our country's problem on mosquitoes-Mosquito Ovicidal/Larvicidal Trap with black pepper-based pellets. But it has not reached other rural communities. Herewith, the researchers thought of alternative pellet from chilies since they came from related families, making the trap more accessible to many. With this perspective, the pH level, ability to attract mosquitoes and kill mosquito hatchlings formed the bases for the product's success.

#### **METHODS**

The chilies were cut open across the center, sun-dried and then seeds were removed from the skin. The cost of the product was based on the quantity used in one setup. The pH level of the solution of chili seeds and tap water was tested using a pH meter. Then, the trap's ability to attract mosquitoes was qualitatively defined through the presence of mosquito eggs and/or larvae in each trap. Also, the product's ability to kill mosquito hatchlings was tested through the exposure of mosquito hatchlings to the solution, determining their mortality rates. T-test was used to compare the mortality rates of mosquito hatchlings and pH level of the product and the commercial one.

#### **RESULTS**

The chili seeds pellets were said to be less economical than existing pellets. After actual tests the pH level of the solution was found to be slightly acidic while the existing one was slightly basic. The presence of mosquito hatchlings yielded positivity of the trap. Lastly, the ability to kill mosquito eggs and larvae were determined through their mortality rates yielding equal egg mortality rate of 100% for both treatments, whereas resulting to a higher larval mortality rate of the product than the commercial one.

#### **DISCUSSIONS**

While they have same mortality rate for eggs, they differ in larval mortality rates, thus proving the product's lethality to mosquito hatchlings. Also, the product being slightly acidic was concluded to be more fatal to mosquito hatchlings. Even so, the results of t-tests still suggested that there are no significant differences between the two. Still, these proved the ability of chili seeds to be a substitute OL Trap pellet since its properties are comparable to that of commercial ones. Furthermore, the researchers recommend using the ethanolic extract of the chili seeds to increase its lethality.

**KEYWORDS:** chili seeds, OL Trap, mosquitoes

**SUBMISSION ID:** R04A-BATANP-1078

## **The Feasibility of Guava Leaves (*Psidium guajava*) as Material for Making Wound Gauzes**

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### **Abstract**

#### **INTRODUCTION**

People all over the world get scabbed in the most unexpected instances of their lives. These wounds can cause infections that can harm them so they need to be treated. One of the methods of doing so is by patching up wounds with medical aids such as gauzes, bandages, and the like. Typically, these medical aids do not come with disinfectants which prevent infections; their only purpose is limited to covering and protecting wounds. Gauze can be paired with antiseptics and medications but using separate products can cause problems and be a hassle to the consumer. This is the reason why the researchers came up with the idea of making gauze out of guava leaves.

#### **METHODS**

To create a wound gauze, the guava leaves were boiled with washing soda for several hours. Afterwards, the leaves were soaked in bleach-water solution and the soft tissues were removed. Lastly, the gauze was treated by pure guava leaf extract then air-dried. The pH of the gauze with water was examined using pH meter. Next, the odor of the guava gaze was observed by survey. The durability of the product was quantitatively expressed through computation of net force applied. Also, the lasting life was also assessed by survey for five days. All respondents used were randomly selected. Moreover, t- test was used to compare the pH, odor and net force.

#### **RESULTS**

After testing the guava gauze's properties, it was found that it can withstand a net force of 0.78 N before being torn apart while the existing one exceeds 1 N. The product can last in 5 days based on the test conducted different the commercial product that can be stored for years. Furthermore, the guava gauze was also shown to be slightly basic which is the same as the widely-used gauze. Lastly, the odor of the product was observed to nearly pleasant similar to the commercial one.

#### **DISCUSSIONS**

Based on the tests, in terms of odor and ability to heal wounds, the product is shown to have no significant difference with the commercial product. The researchers also discovered that the commercial product has significant difference with the guava gauze in terms of durability, shelf life and pH level. The results verified that the guava leaves gauze is comparable and may be a substitute to the commercial product. With regards to the study, the researchers suggest further research for strengthening the product, and other ways of removing the soft tissues of the leaves instead of using bleach alone.

**KEYWORDS:** guava, gauze, first-aid, antiseptic, wounds

**SUBMISSION ID: R04A-BATANP-1083**

## **The Feasibility of Mangosteen Peel as Lipstick**

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(Adviser: Angeline Pagkaliwangan)

### **Abstract**

#### **INTRODUCTION**

Lipsticks are considered as one of the most manufactured products in the cosmetic section. However, these products are not just highly-priced but also do contain an excessive amount of chemicals that are unsafe for the consumers. With this in mind, the researcher came up with the idea of making a lipstick that can easily be crafted at home out of natural materials, specifically mangosteen, that ensures a less toxic product unlike the commercialized ones.

#### **METHODS**

In the preparation of the product, different processes were performed such as physical blending, heating and shaping of the product. Multiple procedures were conducted to test the potential of mangosteen as lipstick. The researcher used a number of techniques, especially a random sampling in choosing ten respondents to rate the significant properties of the product to ensure the even-handed statement of the data. Various tests such as T-test, F-test and Z-test were managed for the systematic analysis of the recorded data.

#### **RESULTS**

To sum it all up, the mangosteen peel lipstick can be concluded as an effective competitor of the commercialized one. After the testing of the properties, the odor of the product was concluded to be pleasant. The color of the product was deduced to be a particular shade of red. Regarding the texture of the product, it was smooth with a trace of small particles. Lastly the computed cost of the product was found to be more economical than the commercialized product.

#### **DISCUSSIONS**

After a series of systematic analysis of data, we were able to discover the potential of our product compared to the commercially available ones. In all aspects cited such as texture, color and odor, it can be concluded that the mangosteen peel lipstick has a significant difference with that of the commercialized product. Despite the success of the study, the researchers still have suggestions for the further development of the research. Even though the product is natural and organic, the researchers still recommend to test the chemical content of the product.

**KEYWORDS:** mangosteen, lipstick, cosmetics

**SUBMISSION ID:** R04A-BATANP-1046

## **The Impact of Using Worksheets in Science Utilizing Explicit Instruction in the Performance of Grade V Pupils**

Odesa De Jesus, Department of Education - Batangas

### **Abstract**

#### **INTRODUCTION**

The recent pre-test conducted in Science to among the seventy-seven (77) pupils in Grade Five indicated that there were thirty-five or 45% of the pupils who did not show mastery in some learning competencies for Grade Five. To improve the performance level of the pupils, worksheets must be provided to them so that these will be the materials to facilitate and enhance learning and aid the teacher to determine the learning difficulties of these thirty-five pupils.

#### **METHODS**

This research will only include the 35 Grade V pupils in Sampaga Elementary School, Balayan East District. These pupils are grouped heterogeneously and are found out to get 45 % in the pretest. The researcher designed a pretest and posttest which will serve as the indicator of the increase in the performance of the pupils in the First Quarter. Worksheets were prepared by the teacher which were used to aid in the solution of the problem. To assure an effective, reliable and objective analysis and interpretation of data, statistical tests like weighted mean, MPS, standard deviation and Correlated t-test were applied by the researcher in order to answer the specific problems of the investigation.

#### **RESULTS**

Upon conducting pretest, the result of the test revealed that the common mistakes encountered by the pupils were the following: 1. Describe the characteristics of useful materials; 2. Describe the characteristics of harmful/hazardous materials or products; 3. Describe the changes happen in materials in the presence or absence of oxygen; 4. Describe the changes that happen on materials; 5. Follow the clear and easy steps in recycling materials.

#### **DISCUSSIONS**

As presented in the result, there was an increase of 8.92 in the mean of the posttest. Moreover, there was a scattered of scores from 1.94 from the pretest to 3.56 in the posttest. This only signifies that the improvements of the pupils increased after the remediation using the worksheets. Furthermore, there is an increase of 59.44 in the MPS. There is a significant difference between the academic performance of the respondents. Since the computed t-value 15.638 exceeds the tabular t-value of 1.796 at 0.05 level of significance with 11 degrees of freedom. This means that the reinforcement in competencies through instruction and remediation using the worksheets significantly improved the academic performance of the pupil-respondents in Science by using the explicit instruction.

**KEYWORDS:** worksheets

**SUBMISSION ID: R04A-BATANP-1192**

## **The Level of Academic Stress among the Senior High School Students of Maddela Comprehensive High School**

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### **Abstract**

#### **INTRODUCTION**

Stress is perceived in different ways and may mean different things to different individuals. It is perceived as events or situation that causes individuals to feel tension, pressure, or negative emotions including anxiety or anger. Academic Stress is a significant source of stress for many students covering not only examinations but also other academically related stressors such as fear of logging behind in the homework, writing assignment, working in individual and group projects, time pressure, lack of financial support, concern about academic ability, scheduling classes and required motivation to study. In this study we determine the level of academic stress among the students.

#### **METHODS**

A descriptive type of research by the use of survey questionnaire was followed in order to know the levels of academic stress of Senior High School students. It is composed of two parts namely demographic profile and level of academic stress in terms of academic factors namely written outputs, performance tasks and quarterly examination and other factors namely co-curricular activities and class scheduling, was administered to the two hundred seventy-four respondents who were randomly chosen. Data was analyzed through the help of SPSS 16, student version.

#### **RESULTS**

The two hundred seventy-four (274) respondents were dominated by 158 females (57.7%). The respondents find academic activities namely written outputs, performance tasks and quarterly examinations and other factors namely co-curricular activities, class scheduling and financial matters stressful. Furthermore, no significant difference is measured in the level of academic stress of the respondents in written outputs, performance tasks and other factors namely cocurricular activities, class scheduling and financial matters when grouped according to sex. However, a significant difference in the level of academic stress of the respondents in quarterly examinations when grouped according to sex is established.

#### **DISCUSSIONS**

The results manifested the need for academic stress management among senior high school students. A localized school based academic stress management program should be established and conducted to guide the students in managing academic and other factors which they considered as stressors.

**KEYWORDS:** Academic stress, academic factors

**SUBMISSION ID:** R002-QUIRIN-0059

## **The Level of Comprehension of Grade VI Pupils in the Science Subject of Pulong Saging Elementary School**

Abejane Drink & Emily Patawe, Pulong Saging Elementary School

### **Abstract**

#### **INTRODUCTION**

Comprehension is an integral part of a child's learning. It is with comprehension that a certain idea can be formulated in inferring meaning from the written and oral instructions in order to conclude an idea or formulate a solution. With this processes, a mind can logically decide on a certain situation or scenario presented, thus, giving it the proper logical response. In a child's learning, experience, comprehension starts from associating a certain visual representation to a corresponding sound. Then, the associated sound and visual item will be given meaning through usage, representation, objectivity and subjectivity. With these gradual interpretation of data, the human mind can formulate ideas from the most basic to more complex thoughts needed in communication, analyses, problem-solving and inferential learning.

#### **METHODS**

This action research will utilize qualitative-descriptive type of research in presenting the data of the Level of Comprehension of Grade VI Pupils in the Science subject of Pulong Saging Elementary School.

#### **RESULTS**

The data collected will be quantified to determine the level of comprehension of Grade 6 pupils of Pulong Saging Elementary School and to assess whether there is a significant effect of nature and nurture factors in the achievements of pupils academically.

#### **DISCUSSIONS**

Science is important subject at upper primary level and understanding of basic science concepts increases the content knowledge of the teachers and students. But for some time teachers faced the difficulties to understand some science concepts. Also they had occurred difficulties to teaching some science concepts. If these concepts which are difficult to understand for the teachers, it will be transferring towards students incorrectly and it will create many alternative conceptions. In order to teach today's science concepts, teachers need to understand subject matter deeply and flexibly so they can help students create useful cognitive maps, relate one idea to another, and address alternative conception (Chavan, R.L.) Science teachers need to know strategies they can implement to aid in students' comprehension of the specific concepts they teach. If students can't comprehend the materials science teachers provide them, then their understanding of scientific concepts will suffer. When you teach science, you are also teaching students how to read for a variety of purposes and with a variety of materials"" (Johnson, J.C., Martin-Hansen, L., 2005).

**KEYWORDS:** THE LEVEL OF COMPREHENSION OF GRADE VI PUPILS IN THE SCIENCE SUBJECT OF PULONG SAGING ELEMENTARY SCHOOL

**SUBMISSION ID: R04A-CAVTP-1652**

## **The Potential of Ginger (*Zingiber officinale*) as a Replacement for Tobacco in Cigarettes**

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Education - Batangas Province Science High School  
(Adviser: Angeline Pagkaliwangan)

### **Abstract**

#### **INTRODUCTION**

Cigarette smoking is a practice all around the world. Other plants have been used too, but tobacco is the most popular. Tobacco cigarettes are also addictive and a leading cause of lung cancer. The researchers thought that ginger, a spice mainly used in Asian countries may be a viable substitute, since ginger has the ability to help alleviate inflammation, has anti-oxidant properties and it helps to fight cancer due to having shogaol compound when dried.

#### **METHODS**

In making a cigarette stick, a whole piece of ginger was chopped into smaller pieces. Next, the pieces were sun-dried. Then a rolling paper was laid flat. Then, the dried ginger was placed onto the paper with a filter inserted at the end and rolled up. Lastly, wet the adhesive part to seal it. Five smokers were randomly chosen as the respondents and a rating scale was used to test the odor and taste of the product. The burn time is tested using a stopwatch and the smoke residue was tested using an improvised tester and compared to the commercial cigarette. The shelf life was tested by storage and observation. Also, the cost was evaluated.

#### **RESULTS**

Results:

The testing for the odor and the taste of the ginger cigarette doesn't receive negative results from the smokers or the respondents. For the burn time, the average time of the ginger cigarette does not last too long but it is still comparable to the commercial cigarette. The smoke residue test resulted to a lesser residue of the ginger cigarette than the tobacco cigarette. It was determined that the ginger cigarette becomes stale after three weeks. The cost is the same as the cost of the commercial ones.

#### **DISCUSSIONS**

Based on the data, ginger tastes and smell good when used as a cigarette. Because the ginger cigarette has lesser burn time than a tobacco cigarette, it is recommended that a machine is used for making the product. In addition, it is recommended that a lab test be conducted for the smoke residue. Since the ginger cigarette has lesser residue, it is healthier to consume. Lastly, the cost of ginger cigarette is the same as the commercial ones so consumers can change what the cigarette they use without thinking the cost.

**KEYWORDS:** ginger, cigarettes, tobacco substitute, tobacco

**SUBMISSION ID: R04A-BATANP-1069**

## **The Response of *Brassica rapa* (Pechay) to the Three Different Kind of Organic Fertilizer; Vegetables, Rice and Bone**

Andrew Josh S. Andal, David Gabriel D. Dimaisip, & Lennard Christian Roldan, Student

### **Abstract**

### **INTRODUCTION**

Agriculture sector is one of the main agenda to improve in our country since that it has many uses for the economy. Organic fertilizer is good source of nutrients for the soil and its plant. It helps to improve physical, biological and chemical characteristics of the soil. This study was conducted to evaluate the growth rate and yield performance of pechay, applied with different kind of food waste as organic fertilizer and determines the effect of organic fertilizer in terms of plant's characteristic. This is why the study focuses on the plants growth with an application of the different kinds of organic fertilizer that can affect its characteristics.

### **METHODS**

Collection of the organic compounds was done from the canteen and houses food wastes. Three types of compost fertilizer are used; vegetable wastes, bone wastes and rice wastes. The soil on where the plant must be placed was first clean and cultivated. The pechay seed was planted on a controlled set-up and transfer to the main plot with fertilizer on its second week. This research was observed for three months. Two-way ANOVA was used to analyze the data gathered.

### **RESULTS**

Vegetable fertilizer has the highest mean plant height among the three. It gathers a lead of four and the bone has only a slight mean height differential of 1-4 cm on the controlled setup. In addition, for the number of leaves the Pechay containing the vegetable organic fertilizer has the most abundant mean number of leaves among three. It has a mean of 7.30 and the next is a mean of 4.02 for the rice

### **DISCUSSIONS**

This study was conducted to determine the effects of the different kind of organic fertilizer on the *Brassica rapa* (Pechay) which will give the best height and the greatest number of leaves. The statistical analysis was computed, the research on the response of pechay on the three different types of Organic Fertilizer, was conducted to find the difference of the pechay plants with the organic fertilizer and the controlled setup. The results show that the vegetable has the highest mean height and number of leaves. Moreover, as stated in our hypotheses, the organic fertilizer containing the bone will have the highest mean height and number of leaves. The statistical analysis of one-way ANOVA that shows that the F- value of the given data has highly significant than the F-crit, it indicates that the hypotheses was rejected. In addition, the P-value that is lower than the alpha level of 0.05 that we need to reject our hypotheses. The results were significant and are parallel to the analysis.

**KEYWORDS:** Agriculture, Organic Fertilizer, Waste Fertilizer, Pechay plant, compost fertilizer

**SUBMISSION ID: R04A-CAVITP-0973/R04A-CAVITP-0976**



**The Use of Strategic Intervention Materials in Teaching Forces and Motion among Grade Nine Students in Anselmo A. Sandoval Memorial National High School**

Laarni M. Dimaunahan & Maricon D. Castillo, Department of Education

**Abstract**

**INTRODUCTION**

The advancement of Science and Technology has enormously changed man's socio-economic environment. These changes have greatly influence almost all aspects of our lives. Technological changes and inventions dominate man's world. Education must be made relevant to the changing, challenging and demanding world of Science. The acquisition of scientific skills and concept will bolster technology progress and global competitiveness. A science curriculum must be designed in terms of how it can be developed a scientifically literate society and how it can make an individual more responsive to the needs of the society and to the national development goals. The teaching of science specifically in the secondary schools as a preliminary to scientific explanation is indeed vital.

**METHODS**

This study applied the descriptive method of research. Grade nine students were the main respondents of the study. The execution of different strategic intervention materials were the main source of the data used by the study. Conducted assessment supported the results of the study but did not attempt to explain the underlying reasons for such result.

**RESULTS**

The Strategic Intervention Materials matched to the students' needs and using learning rate over time and the level of performance to make important educational decisions to guide instruction. It encompasses multiple levels of instruction and support all intelligence styles and models of learning. From the new concepts and practicing new skills, students make discoveries and formulate ideas on their own, challenge their scientific thinking and skills assessment card provides various activities and exercises to assess students' understanding on what they have learned from the topic. The enrichment card helped develop the mastery of the students in the content and encouraged them to work independently.

**DISCUSSIONS**

Based on the results, Strategic Intervention Materials could be applied in Teaching Uniformly Accelerated Motion, Motions in Two Dimension and Impulse and Momentum. Majority of the students got very high performance in the three lessons in Forces and Motion. Teachers may continue using Strategic Intervention Materials to lead students become active participant in the classroom.

**KEYWORDS:** Strategic intervention materials, forces, motion

**SUBMISSION ID: R04A-BATANP-1380**

**The Utilization of Inquiry- Based Approach in Teaching Science as  
Perceived by the Science Teachers and Pupils of Special Science  
Elementary School of Amadeo**

Allan Nava, Department of Education - Amadeo

**Abstract**

**INTRODUCTION**

Since approach is very important in teaching and learning process, it is necessary to test the effectiveness of the different approaches being used in K- 12 curriculum. One of that is the used of Inquiry- based approach. This is the basis of conducting this research. The primary purpose of this research is to imply the status of inquiry- based approach in teaching Science in Special Science Elementary School as perceived by Teachers and Pupils. This is also undertaken to know the significant difference between the perception of the teachers and the pupils on the status of inquiry- based instruction.

**METHODS**

The study made use of the descriptive- correlation method with document analysis. Descriptive method aims to describe systematically a situation or area of interest factually and accurately while correlation is concerned with describing the degree of relation between variables. The technique utilized is survey, otherwise known as normative survey, is a fact- finding study with adequate and accurate interpretation.

**RESULTS**

The salient finding of the study indicate a clear, positive trend favoring inquiry- based instructional practices, particularly instruction that emphasizes student active thinking and drawing conclusions from data. Teaching strategies that actively engage pupils in the learning process through scientific investigations are more likely to increase conceptual understanding than are strategies that rely more on passive techniques, which are often necessary in current standardized assessment laden educational environment.

**DISCUSSIONS**

The proponent recommended to utilize continually the inquiry- based approach in teaching science in Special Science Curriculum even in regular classes. The proponent also recommended conducting further studies on the effectiveness of using Inquiry- based approach in teaching science as reflected in pupils' academic performance and the effectiveness in applying to other subjects.

**KEYWORDS:** Inquiry-based approach, perception, pupils, teachers, descriptive- correlation, random sampling

**SUBMISSION ID: R04A-CAVITP-1078**

## **Through Sensations: A Phenomenological Study of the Lived Experiences of Nurses in Communicating to Patients with Ischemic Stroke**

Queen Irish Cemine, Trece Martires City Senior High School

### **Abstract**

#### **INTRODUCTION**

Most frequent kind of stroke is ischemic stroke, and patients who are diagnosed with this suffer from neurologic dysfunction due to sudden loss of blood circulation. Due to this, problems in communication may arise as the nurses might misinterpret the messages expressed by the patients. Although effective communication is common to nurse-patient relationships, there are no studies conducted about the different experiences of nurses in communicating to patients with ischemic stroke, since most of the studies focus on the broad definition of stroke that involves hemorrhagic and ischemic stroke.

#### **METHODS**

This study used qualitative method, particularly a phenomenological study that describes the experience of the nurses who communicate to patients with ischemic stroke through nonverbal communication. The phenomenon of this study explains the experiences, problems encountered and strategies used by the nurses as they communicate with the patients. The population of the study included nurses who handled patients with ischemic stroke. Their responses were highlighted through an in-depth interview with the six nurses working in De La Salle University Medical Center. Braun and Clarke's (2006) thematic analysis was used as a framework analysis.

#### **RESULTS**

The results showed that Behavioral changes, Unconsciousness, Slurring of speech, and Incomprehension are the usual problems faced by the nurses in communicating to patients with ischemic stroke. Bryan et al. (2012) stated that many nurses are deficient in crucial proficiency and expertise in communicating effectively with patients who have communication impairments, for this reason; there is the occurrence of struggles in understanding the essentials of patients. For the strategies, these included demonstrating, using body language, seeking for help, using pictograms, and Using therapeutic communication. Various strategies in communication were used in nursing to allow the patients to meet their needs while restoring their health, and to lessen the difficulties in facing the nurse's challenges when it comes to communicating with their stroke patients.

#### **DISCUSSIONS**

Thus, behavioral changes, unconsciousness, slurring of speech, and incomprehension were the common themes on the problems encountered by the nurses. Contrarily, demonstrating, using body language, seeking for help, using pictogram, and using therapeutic communication were the common themes on the strategies used by the nurses to cope up with the problems.

**KEYWORDS:** Ischemic stroke, Communication, Nurses' experience, Nurses' challenges, Nurses' strategies

**SUBMISSION ID: R04A-CAVTP-0626**

## **Toothpaste Out of Activated Charcoal**

Edhe Rose Bayer

(Adviser: Eric Hernandez)

### **Abstract**

#### **INTRODUCTION**

Toothpaste has been a daily essential in improving oral hygiene. Its formulation has evolved throughout the years. Since charcoal has important components beneficial in cleaning and removing the odor, the researchers aim to study its innovation and its benefits to people with oral problems.

#### **METHODS**

An Exploratory Research design was used. The paper exhibits and explains the actual creation of Activated Charcoal Toothpaste. As for validation, revealing the raw materials and the indicated procedure needed to come up with the product will do. Semi-structured questionnaires were also distributed to 20 random students to get their perception about the product once distributed or made.

#### **RESULTS**

Many respondents who participated in the study agreed that Activated Charcoal Toothpaste could be a good help in removing plaque. Being an alternative in the commercial product, this will surely be a good help to the consumers. Moreover, charcoal toothpaste will be used to eliminate impurities.

#### **DISCUSSIONS**

The results showed that an Activated Charcoal Toothpaste could remove plaque on teeth. It is also safe to use by consumers of any age in preventing or lessening oral problems. It will not leave any stain to the teeth because of the ingredients like coconut oil and calcium carbonate, which will act as stain concentrator.

**KEYWORDS:** charcoal toothpaste, activated charcoal, oral problems

**SUBMISSION ID: R04A-BATANP-0282**

## **Use of Localized Recyclable Materials for Activity-Based Learning in Earth and Life Science**

Rhea Masalunga, Department of Education, Laiya National High School

### **Abstract**

#### **INTRODUCTION**

Recyclable materials such as papers and plastics are among the solid wastes that contribute to various environmental problems in the country. Recycling is, therefore, an option for most sectors including the school. If used properly, recyclable materials can become good sources of localized instructional materials. These materials facilitate teachers in developing collaboration and creativity among learners. More so, the use of recyclable materials for activity-based learning in the subject such as Earth and Life Science eradicates the problem of unequal participation and contribution of learners to the assigned task. Furthermore, this strategy minimizes the solid waste disposal in the campus.

#### **METHODS**

The study used mixed method of research. To determine the level of acceptability of using recyclable materials in Earth and Life Science, students were asked to rate the strategy from 1-5, 5 being the highest. Composite mean of the responses of learners was computed and interpreted. To determine the advantages of the strategy to the student, the group, and the environment, an interview was done. In all, 122 senior high school learners served as respondents in the study.

#### **RESULTS**

Based on the quantitative analysis of the responses of learners on the level of acceptability of using recyclable materials in Earth and Life Science, the majority of the learners responded high acceptability. At the same time, the majority of the learners said that the use of recyclable materials in the subject allowed them to save money, construct their own learning, and express their ideas freely. To the group, the strategy helped the members to contribute to the progress of their task. More so, it helped them to come up with better ideas. To the environment, most of the respondents agreed that the use of recyclable materials minimized the litters in the campus.

#### **DISCUSSIONS**

The results demonstrate high acceptability of the use of recyclable materials in activity-based learning in Earth and Life Science. While most of the teachers use gadgets and over-the-counter instructional materials, the use of recyclable materials reduces the expenses of learners, allows each learner to contribute equally to the activity; and solves environmental concerns. However, the research use limited topics in Earth and Life Science. Therefore, it could be suggested to cover other topics in the subject. Nevertheless, the use of recyclable materials is highly recommended to all educators.

**KEYWORDS:** recyclable materials, activity-based learning, Earth and Life Science, creativity, collaboration

**SUBMISSION ID: R04A-BATANP-0025**

## **Use of Play Activities in Teaching Science among Grade 4 Pupils**

Myla Go, RACE AAG

### **Abstract**

#### **INTRODUCTION**

The study aims to identify the relationship between demographic variables of Grade IV pupils and their performance in Science tests after receiving Science teaching through play activities.

#### **METHODS**

The study utilized a descriptive comparative and descriptive correlational research design where the Science test results of respondent pupils after being immersed in traditional teaching of Science and teaching Science with play was compared. The correlation part of the study determined the relationship between pupils' performance in Science tests and their demographic profiles. This was to determine if any demographic variables (age, gender, gross family income, interest, educational attainment of parents and number of siblings) can serve as an intervening variable to increase the positive effects of play activities in teaching.

#### **RESULTS**

Results showed that most of the respondent pupils (N = 134) are age nine (9) years old, the females (54%) outnumbering the males (46%) with a gross combined income of not more than 10,000 pesos per month but not less than 5,000 pesos a month (62%). Their interest is mostly on the internet and other media (e.g. television) (87%), majority of the parents have completed only until high school (76%), and with at least four kids (72%). The respondents' performance in Science tests after traditional teaching is in 84% whereas their performance after utilizing play activities is 89%.

#### **DISCUSSIONS**

Results support the theory of cognitive development and learning is achieved through social interaction. The presence of more informal activities such as play has taken respondent pupils' attention towards the subject at hand and provided them more opportunities to express themselves and inquire about issues that they realized and discovered through the games. The 5% increase on averages in Science tests between traditional teaching and teaching with play activities is significant and further strengthen the need for modern teachers to adopt the integration of play activities in their teaching to improve their teaching performance as well as improve student academic performance. The lack of correlation between demographic variables and scores in Science tests after play activities show that teachers need to practice equal treatment regardless of student background when it comes to play activities. Play activities should be first seamlessly integrated in the curriculum and never destructive.

**KEYWORDS:** Play Activities, Integration, Motivate, Immersion

**SUBMISSION ID: R04A-CAVTP-0466**

## **Utilization and Analysis of Compost as a Potential Source of Electricity**

Trizia Mae Cruz, Laguna Senior High School

### **Abstract**

#### **INTRODUCTION**

The Philippines is mainly an agricultural country with a land area of 30 million hectares, 47 percent of which is agricultural. It is known because of the large number of unwanted waste in the country. It includes the biodegradable waste which is any organic matter in waste which can be broken down into methane or simple organic molecules by micro-organisms and other living things using composting or similar processes. The use of waste materials might be a huge help in producing energy. That is in the context why the researcher thought of doing a utilization and analysis of compost as a potential source of electricity.

#### **METHODS**

It revolved around the compost from the LGU's and certain minerals and chemicals from it. Collection of the compost was done with the help of LGU's. It was properly prepared through a representative sample with relative proportions or concentration of all pertinent components. Moreover, the same sample was handled in such a way that no significant changes in composition occur before the tests are made. After the necessary preparations, the sample was sent to the National Institute of Molecular Biology and Biotechnology for analysis. The data was submitted last July 11, 2016. Further experimentation and specific processes was held at the researcher's household.

#### **RESULTS**

Based from the findings, the following conclusions are made: It showed that Week 5, 2016-1034 has the highest 9.79 conductivity mS/cm among the sample per week. One parameter, which is the degree of maturity of compost, shows that the longer / higher maturity, the conductivity per sample increases. Varying observation of all the minerals from the sample was made. It was tested to see if the sample might be utilized as a source of electricity. It showed significant electrical conductivity.

#### **DISCUSSIONS**

In the light of the findings and conclusions, the following recommendations are hereby offered: The components of sample compost maybe changed with varying proportions. It may be subjected to longer time of composting process for maturity of compost to yield higher electrical conductivity. It showed significant electrical conductivity from the compost. Hence, further studies could be made to support the findings gathered from the study. Further support from LGU's can be networked to properly utilize the potential of compost as source of electricity.

**KEYWORDS:** biodegradable waste, methane, compost, source of electricity

**SUBMISSION ID: R04A-LAGUNA-0025**

## Utilization of Cogon Grass (*Imperata cylindrica*) in the Removal of Cyanide in Soil

Kent Ian Landa

(Adviser: Annalyn Loreto)

### Abstract

#### INTRODUCTION

Philippines have rich deposits of different minerals. This results to rampant mining industry operation in the different regions particularly in the province of Compostela Valley wherein ten out of eleven municipalities have gold deposits. With this, as means of finding the minerals from the ore, small-scale miners utilize cyanide leaching to extract gold from ores. Without proper waste disposal of this hazardous chemical, significant destruction the cyanide brought to the environment cannot be repaid. This study aims to remove waste cyanide from the contaminated soil and restore it using Cogon grass (*Imperata cylindrica*).

#### METHODS

Soil titration on the presumed contaminated soil was done to determine the strength of the cyanide if present. One and a half kilogram of Cogon grass was harvested and homogenized in the area enough to be utilized for 3 replicates with one-half kilogram in each replicate and another one-half kilogram sample from Cyanide-free soil for control ready for lab testing. Using Kjeldahl Method, percentage protein of the plant samples was measured. The results were then compared between the plant samples that were exposed to cyanide-contaminated soil and the control.

#### RESULTS

As reflected in the results, the soil titration exhibits a positive result that cyanide is present in the soil having a mean strength of 0.467 ppm. Furthermore, a significant difference in the means of the percentage of protein was found between the two plant samples. A 4.22% protein from the plant that was exposed to cyanide-contaminated soil has a notable contrast from 1.81% protein from the plant in the cyanide-free soil. T-test for independent samples resulted to a p-value of 0.004 and df of 2 at  $\hat{I} \pm$ -level 0.05 that leads to a decision to reject  $H_0$ .

#### DISCUSSIONS

The increase in % protein denotes that the Cogon grass has managed to absorb the cyanide from the soil and use it for the plant's growth and at the same time restores the soil in its natural healthy state. Plant utilization of cyanide as a supplemental source of nitrogen has been a topic in recent scientific interest. Ebbs, S., et al., (2010), asserted that plants exposed to cyanide are healthier than those that have artificial nitrogen fertilizers. Through nitrogen assimilation in plants, nitrogen was transformed to amino acids useful in the production of proteins. Sorghum (*Sorghum bicolor*) and Willow (*Salix viminalis*, *Salix viminalis* × *schwerinii*) tree testifies that plants exposed to cyanide-contaminated soil become healthier.

**KEYWORDS:** cyanide, mining, soil titration, nitrogen assimilation, % protein

**SUBMISSION ID:** R011-COMPOS-0014



## **Utilization of Corn (*Zea mays*) Husks as Wallpaper**

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High School

(Adviser: Angeline Pagkaliwangan)

### **Abstract**

#### **INTRODUCTION**

One of the greatest crisis our world's facing is global warming that is mainly caused by the vast production of greenhouse gases from burning waste materials especially cornhusks. They possess favorable properties like fibers that are proven strong, have good pliability and high moisture retention which was found to be essential in wallpaper production. Some consumers preferred to use wallpaper than paint because it has lower economic value and high quality, which leads to the idea of utilizing cornhusks into wallpaper.

#### **METHODS**

The corn husks undergone boiling process and was pre-treated with alkali solution to extract the fibers. Mold and used papers were used to shape and dry the product respectively. Multiple methods were conducted to gather data for each property: spring balance for wet and tensile strength, computations and respondents for cost, shelf life, convenience, and ability to be cleaned, and for the folding endurance and abrasion resistivity manual methods were used such as rubbing and folding. Both qualitative and quantitative analyses such as statistical tools (e.g. mean and t-test) were used for testing.

#### **RESULTS**

The tests that were conducted shows that the tensile and wet strength is 46.5 N/m<sup>2</sup> and 3.58 N/m<sup>2</sup> respectively. The folding endurance of the product is 89%. For the cost, it yielded to Php 28.00 and was found to be less economical than the commercial one and the shelf life was indicated in the change of color from dark to slightly dark yellow based on the rating scale. Moreover, the product was damaged after being cleaned, in convenience it just took 1.5 sec. for the product to be pasted. Lastly, for the abrasion resistivity it left 1.18 g of fragments. Some properties of the product indicated significant difference with the commercial product while others did not.

#### **DISCUSSIONS**

Though some test results indicated significant difference and while others did not, corn husks can still be used to generate an Eco-friendly wallpaper because of its good quality fibers and availability. The utilization of cornhusk would the production of greenhouse gases. In addition, the farmers and the Agro Industry would have additional income and the landfills needed for paper production would also be diminished. The researchers recommend improving the testing in ability to be cleaned, abrasion resistivity and shelf life to obtain data that are more reliable and to use the freshest possible cornhusks and the most appropriate tools.

**KEYWORDS:** Corn husks, wallpaper, Agro Industry

**SUBMISSION ID: R04A-BATANP-1113**

## **Utilization of Dehydrated Durian (*Durios zibethinus*) Peel as Alternative Solid fuel**

Eunice Kaye Endozo, Student  
(Adviser: Annalyn Loreto)

### **Abstract**

#### **INTRODUCTION**

Being part in the Davao Region made us so fortunate to be known as the Durian Capital of the Philippines. But with the increasing production every year, arises the concern of Durian peel waste in the environment. Durian waste, though being biodegradable, will take long before it finally decomposes. If this problem will continue, lack of proper waste disposal will occur and will eventually cause pollution. For that, the researchers aim to utilize the durian peel as an alternative solid fuel, which is also the key to the demand for an environment friendly fuel.

#### **METHODS**

An experimental research design was used. Durian peel was sun dried until it loses all its moisture. Then it was chopped to sizes similar to charcoal. A 25g dehydrated durian peel and 25g of charcoal was used to boil a 250mL of water. The dehydrated durian peel and charcoal was ignited simultaneously. A charcoal grill blower was used to produce constant air in igniting the solid fuel. The timer started as long as the solid fuels ignited and it was stopped as the water boils. The test was repeated nine (9) times.

#### **RESULTS**

On the nine trials of boiling 250 mL of water using a 25g of dehydrated durian peel and 25g of charcoal, results showed (in minutes) that T1 is 5.28 and 6.03, T2 is 5.49 and 5.40, T3 is 6.12 and 6.36, T4 is 6.01 and 6.39, T5 is 5.17 and 6.20, T6 is 4.49 and 5.12, T7 is 6.10 and 5.9, T8 is 5.37 and 6.01 and T9 is 6.22 and 6.40 for durian and charcoal respectively. The total mean rank of dehydrated durian is (Mdn= 7.78) and charcoal is (Mdn= 11.28). Also, the results showed that Mann-Whitney value is 240 (M=240,  $p>.158$ ) and p-value is 0.158.

#### **DISCUSSIONS**

Results showed that mean rank of durian peel is less than of commercial charcoal. This implies that dehydrated durian peel boiled the 250mL of water faster than charcoal in the nine trials based on their mean ranks. Moreover, it showed that there is no significant difference in the ignition period of the solid fuel between dehydrated durian peel and the charcoal. With this, durian peel can be utilized into something beneficial such as an alternative solid fuel. Furthermore, the solid fuel from dehydrated durian peel is comparable to the commercial charcoal based on the results of the study and durian peel waste could be lessened in the Region because of its discovered benefits as solid fuel.

**KEYWORDS:** durian peel, ignition, solid fuel

**SUBMISSION ID: R011-COMPOS-0013**

## **Utilization of Indigenous Plants as Mosquito Repellent**

Jacquiline Benaid, Mamatid Elementary School

### **Abstract**

#### **INTRODUCTION**

One of the major problems of Department of Education and DOH has been battling with is the dengue and other mosquito-related illnesses. In the Philippines, numerous plants repel mosquitoes including lemongrass and oregano for its strong scented-aroma. This study attempts to ascertain the degree of repellency of the said indigenous plants against *Aedes aegypti* and to use it as mosquito repellent with no side effect, as an alternative to synthetic chemical repellents.

#### **METHODS**

This study is an experimental research design and utilized the Completely Randomized Design in determining the degree of repellency of lemongrass and oregano oil extracts when mixed with bees wax candles. For a candle repellent, a 210mL bees-wax is mixed with 5mL oil extracts. It utilized four different treatments replicated four times. Treatment 1 is a combination of bees wax and lemongrass oil extract, second treatment consists of bees wax and oregano oil extracts, third consists of bees wax and combination of lemongrass and oregano oil extracts, and the fourth treatment which is also the control group consists only of pure beeswax. Degree of repellency was measured by counting the mosquitoes that repelled or died every 5 minutes for a period of fifteen minutes when placed inside an aquarium with lighted candle repellent.

#### **RESULTS**

Findings revealed that candle repellent, with combination of both lemongrass and oregano oil extracts are more effective repellent than those candles with lemongrass oil extract only or oregano oil extract only. It was also found out that in a matter of 15 minutes, 100% of the mosquitoes inside the experiment aquarium repelled with candle repellent consists of the combination of lemongrass and oregano oil extracts; and the degrees of repellency of the 4 treatments studied are significantly different among each other whether in a 5, 10, and 15 minute- experiment.

#### **DISCUSSIONS**

From the results, the hypothesis that there is no significant difference on the degree of repellency against mosquito between and among the four treatments is partly upheld, while lemongrass and oregano extracts did not differ significantly, but when compared with combination and control, the difference is significant. The study recommends to encourage planting of lemongrass and oregano plants in school and in backyards of every residence, it also be used as inputs in the development of mosquito repellent using oregano, lemongrass or combination of lemongrass and oregano oil extracts as possible business opportunity.

**KEYWORDS:** repellent, treatments, bees wax candles, degree of repellency

**SUBMISSION ID: R04A-CABUYA-0059**

**Utilization of Multimedia in Teaching Science For Intermediate Level  
in Kinalaglagan Elementary School: Basis For an Action Plan**

Jenny K. Gregorio, Nemia O. Villapando, & Ninia Cueto, Kinalaglagan  
Elementary School

**Abstract**

**INTRODUCTION**

The implementation of K to 12 Program brings forth new challenges, along with difficulties arising from the transition period from the old to the new curriculum. The drastic changes could have surmounting effects to the schools, the teachers, the parents and the pupils as they have to cope with the demands of the new educational system. Among these groups, the greatest burden could be on the teachers as they are the ones who experience the limitations/shortages on the school buildings and instructional materials. These burdens were coped up through proper scheduling of classes and resourcefulness in terms of the utilization of teaching strategies that would best suit the interests and needs of the pupils and at the same time aligned with the attainment of the goals of the new curriculum.

**METHODS**

The main purpose of this study is to determine the relationship between the utilization of multimedia instructions and the pupil's participation and performance in the subject where multimedia is used. To attain this purpose, the researchers employed the descriptive method of research.

**RESULTS**

The findings of the study strengthen the widely accepted and repetitively proven beneficial effects of the utilization of multimedia in the teaching-learning process, specifically in terms of improving and enhancing the pupils' development of competencies through accelerating, making accurate, meaningful and enjoyable the transfer of learning from teacher to student. Hence, a proposed action plan was designed.

**DISCUSSIONS**

From the summarized findings, the following conclusions were drawn:

1. The teachers often utilize multimedia in teaching Science to strengthen the pupils' motivation, enhance and make more fast, accurate and meaningful their conduct of teaching-learning activities and slightly often in terms of evaluating the Science lessons.
2. The pupils manifest improved performance in Science when multimedia is utilized in teaching.
3. There is a strong association between multimedia utilization, teachers' efficiency in utilizing it and the pupils' development of competencies.
4. A proposed action plan is the final output of the study.

**KEYWORDS:** utilization, multimedia

**SUBMISSION ID: R04A-BACOR-0001/ R04A-BATANP-0099**

## **Utilization of Multimedia in Teaching Science For Intermediate Level in Kinalaglagan Elementary School: Basis For an Action Plan**

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4. A proposed action plan is the final output of the study.

**KEYWORDS:** utilization, multimedia

SUBMISSION ID: R04A-BACOR-0001/ R04A-BATANP-0099

## **Utilization of Natural-Made Compost as Potential Source of Electricity**

Catherine Mojica, Department of Education - Laguna

### **Abstract**

#### **INTRODUCTION**

Rapid technological change required people to be greatly dependent in electricity thus demand for higher energy consumption and adding to an unsolvable problem in global warming and waste mismanagement. Nevertheless, these unwanted stuffs can produce electricity, heat, compost materials or fuel. Awareness of the usability of organic wastes as alternative source of energy can help achieve a basic sustainable community development. With these issues, the researcher decided to conduct a study on the utilization of natural made compost as an alternative source of electricity.

#### **METHODS**

This study utilized Organic wastes such as vegetable and fruit scraps saw dust, and fish entrails converted into natural made compost as potential source of electricity. Experimental method was used to show how organic materials developed into natural made compost that can be a potential source of electrical energy. Applied quantitative approach in data gathering procedure on the potential of the natural made compost as alternative source of energy.

#### **RESULTS**

The results revealed that 2 kg of compost diluted in potable water produces 7.82 V electric potential than distilled water. Moreover, in lighting up an LED, 2kg composted took 30-20.67 days as compared to 1kg and 1.5kg, which are 9.67; 11.33; 13.33; 14.33 days respectively which means that Electric Potential and Time duration interval were significantly affected by the amount of compost and type of water used but not in terms of LED brightness.

#### **DISCUSSIONS**

The findings of the study presented difference in the mean level of natural made compost as potential source of electricity as to Electric Potential and Time Duration interval in both potable and distilled water were significant unlike in LED Brightness. Furthermore, people can use these scraps as a substitute energy source to avoid improper waste disposal, lessen garbage pollution, and promote a healthy environment. This proved that protecting the environment while promoting innovation takes resourcefulness, initiative coupled with advocacy for change. The highest proportion of compost is recommended. It should be utilized to produce higher and longer electric potential. Further recommendations include the use a more sensitive instrument in determining LED brightness design an in-house compost power unit for larger electrodes tanks enabling to light 20W-40W fluorescent lamp, and introduction of the designed in-house compost power unit to the community as pilot project. The researchers encourage future studies using waste products as raw materials.

**KEYWORDS:** natural-made compost, electric potential, time duration, LED Brightness

**SUBMISSION ID: R04A-LAGUNA-0101**

## **Utilizing Multimedia: A Best Practice in Teaching Science among Students of Alalum National High School**

Kimberly Mae Abacsa, Department of Education Alalum National High School

### **Abstract**

#### **INTRODUCTION**

Individual students may be better suited to learning in a particular way, using unique modes for thinking, involving and creating. The concept of students having particular learning styles has implications for teaching strategies. There are many teaching practices being used in Science, but teachers should know which of those practices is suited and applicable for most of the learners. In this manner, the researcher came up in conducting a study on whether the use of multimedia could be considered as one of the best practices in teaching science.

#### **METHODS**

This study used qualitative research and simple statistical treatment like getting the mean and rank of the data gathered. It also employed a survey questionnaire as a gathering tool instrument and a teacher made test to assess students understanding on lessons being delivered. The survey was given to 166 students coming from all grade levels of the regular class at 0.05 percentage of error.

#### **RESULTS**

Based from the data gathered it had been showed that after multimedia had been used in teaching Science the students' level of performance had greatly increase. According from the survey made it is evident that the teachers employ multimedia in teaching and that these are related to topics being discussed to them. More so, the research showed that students preferred this method of teaching rather than the use of lecture and demonstration.

#### **DISCUSSIONS**

The result of the study only shows that using multimedia can be considered as a best practice in teaching science, since it uplift the students' level of performance. Furthermore, it is a method of teaching that is best suited for these kinds of learners in the school. This is proven by the result of the survey conducted.

**KEYWORDS:** best practice, multimedia

**SUBMISSION ID: R04A-BATANP-2237**

## **Vaselinized Agent as Corrosion Inhibitor**

Juan Catalan, Department of Education

### **Abstract**

#### **INTRODUCTION**

Metal rust is one of the reasons why people use paint. In the latter part of the twentieth century, society's growing environmental awareness has presented a new challenge to the paint and coatings industry to deliver covering items that satisfy the needs of makers and shoppers and in the meantime conform to government condition imperatives. These have led to a more significant interest in developing coatings such as those that use water rather than unstable natural mixes in their plan and powdered coatings that are dissolvable free.

#### **METHODS**

The researcher used an experimental design that describes the output when certain variables were carefully controlled or manipulated. It is the most appropriate research method for an identifying causal relationship to randomized key features, manipulation of treatment variable, use of the experimental group, an equivalent control group. The researcher observed how the different viscosity, odor, and color of every set-up and how it affect the metal.

#### **RESULTS**

The materials used such as petroleum jelly, lanolin, and white vinegar were able to combine in creating a corrosion inhibitor. The petroleum jelly served as the barrier in metal; the lanolin was used as the fragrance, which emits a pleasant smell caused by the white vinegar.

#### **DISCUSSIONS**

The result showed the characteristics of petroleum jelly was capable of affecting the mixture to be a corrosion inhibitor; it serves as a durable barrier between the metal and element to stop rust from spreading. The lanolin made it possible as one of the ingredients of a corrosion inhibitor, to emit a pleasant smell rather than the foul odor on it. The three materials used have a significant relationship that vanishes the putrid scent of the product.

**KEYWORDS:** vaselinized agent, corrosion inhibitor, petroleum jelly

**SUBMISSION ID: R001-URDANE-0019**



## **Vigopa Health Tea**

Vince P. Reyes, Student

### **Abstract**

#### **INTRODUCTION**

Due to our increasingly busy lifestyles, we tend to opt for a quick fix to our ailments, and this often involves a pill of some kind. By this, we become too reliant on modern medicines. VIGOPA Health Tea is a study conducted to minimize somehow the use of pharmaceutical drugs and to have an alternative physic to minor ailments. This study also evaluated the potentiality of VIGOPA Health Tea as an alternative remedy.

#### **METHODS**

The plants used in the study were acquired within the city and the other materials were purchased at a nearby department store. The leaves of the plants were dried and compressed. After it was strained and weighed according to its treatment and it was packed.

#### **RESULTS**

Results showed a significant difference at 5% level among the different treatments employed in terms of palatability, aroma, colour, and general acceptability. It is concluded that VIGOPA Health Tea is acceptable.

#### **DISCUSSIONS**

Among the three treatments employed, treatment 3 gained the highest numerical mean of 7.34. The study proves that there can be an alternative remedy to minor ailments and that is VIGOPA Health Tea.

**KEYWORDS:** VIGOPA HEALTH TEA

**SUBMISSION ID:** R012-TACURO-0024

## **Water Quality Analysis of Existing Spring Well Water in Barangay Pantihan II, Maragondon, Cavite**

Faris Mahmood Saleh Dobradaran, Rom Jeriko Valencia, & Russell Bertulano,  
Cavite National Science High School

### **Abstract**

#### **INTRODUCTION**

Water is an important factor of life. Without it, there is a possibility that life will end. As time goes by, the water in the Philippines starts to be polluted that negates the capability of it to be drunk. Spring wells are some of the traditional sources for drinking water. However, as time passes by, the safeness of this type of water is now unsure since these wells were not the primary source for drinking water anymore. This research study aimed to identify if spring well water in Barangay Pantihan II, Maragondon, Cavite are still potable and if there is a significant difference between these values compared to the drinking water standards.

#### **METHODS**

The materials and equipment needed such as the six-liter container, cooler, small glass container, marker, ice cubes, masking tape, and gloves were gathered. One six-liter container and one small glass container were filled up completely which were then brought to the Department of Science and Technology - Trece Martires City for examination and analyzation of the parameters pH level, turbidity, color, and total coliform count.

#### **RESULTS**

It was found in the results that the pH level of each sites passed the drinking water standards with the values of 7, 7.1, and 7.5 from Site A, B, and C respectively. However, the parameters color, turbidity, and total coliform count showed values far from the standards. In the statistical test, which is independent t-test, the t-Stat for the pH level was higher than the t-Crit with the values 4.582576 and 2.776445 while the t Stat for the other parameters was lower than the t-Crit.

#### **DISCUSSIONS**

Therefore, only the null hypothesis for pH level was not rejected and the others were rejected. Hence, all water samples were concluded to be not potable since majority of the parameters examined showed that there were significant differences between the standard values and the Pantihan spring well water values. For future researchers, it is recommended to conduct the study in both dry and wet seasons. These are also as recommended by law and shall be followed for more accurate and convincing results. Another recommendation is to have more parameters to get a more precise and detailed results for the study.

**KEYWORDS:** Water, spring well, pH level, turbidity, color, total coliform count, independent t-test, water potability

**SUBMISSION ID: R04A-CAVITP-0177**

# **SOCIAL RESEARCH AND POLICY**

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**Cases of Students At-Risk among Grade 11 Students in Cabarroguis  
National School of Arts and Trades**

Harline Mae C. Tacata, Student  
(Adviser: Lovely Edelweiss Hao)

**Abstract**

**INTRODUCTION**

Kids who "fall through the cracks." Students who are somehow left behind. In the recent years, these students have been given the general description of being "at-risk." (Creech et al., Progress Report of 2004) The term at-risk is used to describe students or groups of students who face circumstances that could jeopardize their ability to complete school. These circumstances include homelessness, incarceration, domestic violence, transiency (as in the case of migrant-worker families), or other conditions, or it may refer to learning disabilities, low test scores, disciplinary problems, grade retentions, or other learning-related factors that could adversely affect the educational performance and attainment of some students. In most cases, "risk factors" are situational rather than innate.

**METHODS**

The researcher used the descriptive type of research, which includes observations and interviews. It is used to describe the Cases of Students At-Risk among Grade 11 students in Cabarroguis National School of Arts and Trades.

**RESULTS**

Students from the Grade 11 Amethyst section have the highest number of students at-risk. From the interview, most of the students are experiencing family and personal problems that are why they cannot go to school regularly. Another identified problem of students at-risk is vices. Most of the possible solutions to save those students at-risk are to encourage them to join school activities, motivate them to improve their study habit also by monitoring their attendance, conduct home visitation, and ask parents evidence and help.

**DISCUSSIONS**

The result of the study shows that the students have to study well and do their duties and responsibilities. Parents must guide them and encourage them to study well. Moreover, they should give them time and good communication. For the improvement of the school, teachers have to extend their support to the students at-risk by being patient in giving remediation. School administrators have to conduct regular monitoring and evaluation regarding the performance of learners. They must analyze the data about the learners' attendance and quarterly grades, which serve as basis in extending support to both teachers and learners for better teaching-learning process and higher performance in general and strictly implement the rules and regulations inside the campus.

**KEYWORDS:** Remedial Classes, Save Students At-Risk, Good Teaching Program

**SUBMISSION ID: R002-QUIRIN-0004**

**Gender and Development Mainstreaming of Deped Region Iv-A  
Memoranda and Advisories for CY 2015-2017: An Analysis**

Ronald Reye, Tagaytay City Science National High School

**Abstract**

**INTRODUCTION**

The study aims to examine the Regional Memoranda and Advisories on Gender and Development mainstreaming.

**METHODS**

This study made use of inter-rater reliability in examining the last three-year issuance of memoranda and advisories by the Department of Education Regional Office. Inter-Rater reliability was used to determine the degree of agreement among raters. It established how much homogeneity or consensus there is in the scores given by various experts.

**RESULTS**

With regards to the two key areas used in this research, the results revealed that in terms of Policy, Department of Education Region IV-A is currently at the GAD Application Level, while on the People key area it is at Foundation Formation Level.

**DISCUSSIONS**

The level of Gender and Development (GAD) mainstreaming efforts of Department of Education Region IV-A, in terms of Policy, is characterized by having a Gender and Development (GAD) agenda or strategic framework. This is already adopted and implemented to ensure that Gender and Development (GAD) is being integrated into the organization's major programs and projects.

In terms of People key area, the Regional Office designated key people to be part of its GAD Focal Point System (GFPS) and ensured that the appropriate capacity development sessions on GAD are provided to its top management, GAD Focal Point System (GFPS) and staff members.

Gender Mainstreaming Evaluation Form (GMEF) was utilized in the conduct of the research. To determine the degree of agreement among raters, the raters utilized inter-rater reliability to make it more trustworthy and dependable.

**KEYWORDS:** Region IV-A, Gender, and Development (GAD) Mainstreaming, Inter-Rater Analysis, Gender Mainstreaming Evaluation Form, Descriptors

**SUBMISSION ID: R04A-CAVITP-0807**

**Impact of Facebook Usage on the Academic Performance of the Senior  
High School Students of Maddela Comprehensive High School S.Y  
2018-2019**

Jestony S. Cabbigat, Department of Education  
(Adviser: Shaila Tanglod)

**Abstract**

**INTRODUCTION**

Social networking has gone through quick progress as part of the technology era that attracts people of all ages due to the varied applications it offers. Despite the benefits, there were disadvantages that affected the users, especially the students who became addicted to social networking, which resulted in a lack of interest in studying. Hence, this study was conducted to determine the impact of Facebook usage on the academic performance of Senior High School Students of Maddela Comprehensive High School.

**METHODS**

The descriptive type of research design using a survey method was employed in this study. The questionnaire used in this study was validated by the school-based research committee. The researcher first asked approval from proper authorities as well as consent from the participants before the conduct of the study. Slovin's Formula was used to get the 270 total numbers of participants and stratified random sampling for the number of participants per strand. Likert Scale was used to determine the impact of Facebook usage on the academic performance of the students and Independent t-Test for the significant difference. Frequency Percentage was used to analyze the profile of the participants. Mean and Standard Deviation was used to analyze the impact of Facebook usage on the academic performance of the students through the help of the SPSS Student's Version.

**RESULTS**

The decision of 270 students, consisting of 135 male and 135 females, showed that the impact of Facebook usage on the academic performance of the participants, in terms of purpose, was observed with mean scores of 2.98, time spent with mean scores of 2.16, and extent of using with mean scores of 1.89. Moreover, achieving academic requirements was also seen in participants with mean scores of 2.82. The results further implied that there was no significant difference in the academic performance of the participants in terms of purpose, time spent, the extent of using and achieving academic requirements when grouped according to sex.

**DISCUSSIONS**

The results showed that students can still manage to perform well in their academics. The study also revealed that the students know their limitations of using Facebook although the indicators were not always observed. This will serve as a reminder for parents and teachers to always probe in keeping track of the student's academic performance.

**KEYWORDS:** Impact, Facebook Usage, Academic Performance

**SUBMISSION ID: R002-QUIRIN-0055**

**Kondisyunal Na Paglipat Ng Pera: "Isang Pagtatasa Sa Pantawid Pamilyang Pilipino Program (4p's) Pamumuhunan Ng Kapital Ng Tao Tungo Sa Pagpapagaan Ng Kahirapan**

Ma. Jhonina D. Mataro & Ricky C. Cahilig, Pililla National High School  
(Adviser: Nova Ariston)

**Abstract**

**INTRODUCTION**

Ang Pantawid Pamilyang Pilipino Program (4Ps) ay isang hakbang ng pambansang pamahalaan para sa pagpapabuti ng kalagayang pantao ng ating mga kababayan. Nagbibigay ito ng kondisyonal na tulong-pinansiyal para sa pinakamahihirap na Pilipino upang pabutihin ang kalusugan, nutrisyon, at edukasyon ng mga batang may edad 0 hanggang 18 taong gulang. Ang pag-aaral na ito ay maaaring maging basehan ng pamahalaan particular sa bayan ng Pililla sa epektibong pagpapatupad nito batay sa laki at lawak ng epekto nito sa kalusugan, pag-aaral at pakikilahok sa sesyon ng pag-unlad ng pamilyang Pilipino.

**METHODS**

Ang pananaliksik na ito ay isang imbestigasyong deskriptibo (Silva, 2013). Ito ay idinisenyo ng mananaliksik upang mailarawan ang kalagayang pangkasalukuyan. Ang pag-aaral na ito ay isang imbestigasyon na naglalarawan at nagbibigay-kahulugan tungkol sa isang bagay o paksa. Ito ay may kinalaman sa mga ugnayang nagaganap, mga gawaing umiiral, mga paniniwala at prosesong nagaganap, mga epektong nararamdaman o mga kalakarang nilinang. Ang disenyong ito ay lumalapat sa pangunahing layunin ng pag-aaral na alamin ang antas ng kamalayan ng mga tagatugon sa mga benepisyo sa epektong idinudulot ng programa.

**RESULTS**

Karamihan sa mga respondente ay babae na may edad na 41 pataas at nagtapos ng sekondarya. Ang pangmamayang kalagayan ng karamihan sa mga respondente ay may asawa at may mga anak na apat na taong gulang at pataas, at may 3-4 na anak na nag-aaral o nagtapos na. Ang pakikilahok sa sesyon sa pag-unlad ng pamilyang Pilipino ang may sapat na kaalaman base sa pasalitang interpretasyon at sa resulta ng weighted mean. Subalit, ang bawat aspeto ay may nakitang mahalagang resulta base din sa weighted mean upang mabigyan ng sapat na atensyon ang aspeto ng edukasyon, lalo na ang resulta ng weighted mean ng bilang 5 na may pinakamababang resulta. Samantalang ang aspeto ng kalusugan ang F- value 14.66 ay mas mataas sa p-value na 0.000 upang ang haka ng pag-aaral ay hindi tanggapin. Ang ibig sabihin nito ay ang antas ng kamalayan ng respondente sa pantawid pamilyang Pilipino program (4P's) ay may makabuluhang pagkakaiba base sa kanilang propayl.

**DISCUSSIONS**

Base sa resulta ng mga datos na nakalap, ang mga sumusunod na lagom ay nakuha at nailapat; Marami sa mga tumugon sa talatanungan ng mga mananaliksik ay sumasakop sa kasarian na babae, edad na 41 taong gulang pataas, may asawa, at natapos ng sekondarya, may edad na apat na taong gulang at pataas, at may 3-4 na anak na nag-aaral o natapos na. Ang kakulangan sa kaalaman ng magulang ng mga batang benepisyaryo ay nagpapahiwatig ng kakulangan din sa pagsunod sa mga nabanggit na responsibilidad na kaakibat sa pagtanggap ng benepisyo ng programa. Ang pangunahing kaalaman ng mga respondente ay naayon sa pagtanggap ng batang benepisyaryo sa tabletang pampurga, at sa pagdalo ng mga benepisyaryong magulang sa talakayan o sesyon ng pagiging responsableng magulang. May sapat na kamalayan ang mga respondente sa "Pakikilahok sa Sesyon sa Pag-unlad ng Pamilyang Pilipino". Ang pagsasaliksik ay pinatunayan na ang propayl ng magulang ng mga batang benepisyaryo ay may makabuluhang epekto rin sa kanilang kamalayan ukol sa pagsasakatuparan ng pantawid pamilyang Pilipino program or 4P's.

**KEYWORDS:** Pantawid Pamilyang Pilipino Program

**SUBMISSION ID:** R04A-RIZALP-0051

**Level of Preparedness in Taking Higher Education of the Grade 12  
Students in Cabarroguis National School of Arts and Trades**

Harline Mae C. Tacata  
(Adviser: Lovely Edelweiss Hao)

**Abstract**

**INTRODUCTION**

Higher education is an opportunity to improve one's life and plays a fundamental role in improving the socio-economic status of individuals, their families, and the community. (Valentine et al., 2009) Being college-ready means that a high school graduate possesses both the mindset and a combination of skills and knowledge to fully engage in and college-level courses to pursue. (Tran et al., 2015) Nothing prepares students for college-level studies more thoroughly than a vigorous high-quality high school education. Yes, the educators have set a goal that all graduate students from high school should be fully prepared in taking higher education. In today's demanding academic environment, educators face a challenging with students from diverse ethnic, financial, and academic backgrounds. Many say that when you are stepping into Senior High School, you should know what strand you are taking. On the other hand, you must be fully divided so that in college you will get a course that you want to be someday. (<http://professionalscollegeboard.org>)

**METHODS**

The researchers used the descriptive method, which included giving of survey questionnaires and conducting interviews. It was used to describe the level of preparedness of the Grade 12 students in Cabarroguis National School of Arts and Trades in taking Higher Education.

**RESULTS**

The students are prepared in taking higher education financially, emotionally, and mentally. The Grade 12 students possessed a high chance of enrolling in their chosen courses. There is no significant difference in the level of preparedness in taking higher education of the Grade 12 students when they are grouped according to track. Therefore, their track, whether under GAS or TVL, does not determine their level of preparedness.

**DISCUSSIONS**

The result showed that the students should be more productive in school to be fully prepared in taking higher education. The student should always set their mind that taking higher education is not that easy. The parents have to support, guide and give their children encouragement to study well. The teachers have to improve their teaching strategies for their student to be well-prepared in taking higher education. The Administrators, the Principal, Assistant Principal, and Head Teachers need to conduct educational seminars/career guidance.

**KEYWORDS:** Higher Education, Truly and Fully Prepared, Likely to Succeed, Appreciation

**SUBMISSION ID: R002-QUIRIN-0005**



**Project STATE (Setting To-Do Activities in Time Management Enhancement) and Grade 12 General Academic Strand Students**

Aiziel B. Calpito

(Adviser: Lovely Edelweiss Hao)

**Abstract**

**INTRODUCTION**

Today's youth waste their time and do not regret doing so (Sharma, 2016). Furthermore, Downey (2015) said that not holding students accountable for deadlines seems to be a growing practice in school. As for observation, some students from the Grade 12 Garnet section, under the General Academic Strand (GAS) of Cabarroguis National School of Arts and Trades (CNSAT) tend to delay the creation and submission of their requirements, and even their preparation for examinations, which resulted to them getting low marks. Hence, the researcher has tested the effectiveness of Project STATE (Setting To-do Activities in Time Management Enhancement) to the time management habits of Grade 12 General GAS students. Project STATE shall help students to improve time management habits as they will list everything that they need to do, including deadlines and how much time each will take.

**METHODS**

The researcher used a descriptive- experimental method. This project included a researcher-developed instrument which helped in gathering relevant data. The participants completed a daily record for a month. They included in their record an array of school-related and non-related activities that they have to do for the day, with deadlines ensured, and a checkbox if they have accomplished the listed tasks or not. The study also used a researcher-developed survey questionnaire that was validated by the Research Committee of the school. Data were treated statistically using frequency and percent, mean, and paired sample T-test and were analyzed using the Statistical Package for Social Sciences (SPSS) Student-Version.

**RESULTS**

Through this study, it was found that participants seldom submit their written outputs and projects on time and seldom prepare for examination prior to using Project STATE. After using it, the frequency of the participants' on-time submission of their written outputs and projects have increased. In addition, they are keener in preparing for examinations with a significant difference in time management habits before and after using the project.

**DISCUSSIONS**

The results indicate that there is an improvement in the time management habits of Grade 12 GAS students after using Project STATE. This project can be helpful; thus, students should continue listing a to-do list of their activities every day or simply make it a habit to enhance their time management. This study proves that one of the ways to improve time management is through making a list of what you have to do.

**KEYWORDS:** enhancement, habits, time management

**SUBMISSION ID: R002-QUIRIN-0000**

**Shaping Multiple Intelligences through Imposing Positive Discipline:  
Basis for Action Plan on School Intervention Developmental Program**

Kian Joseph B. Hermosa, Labas Senior High School  
(Adviser: Margie Monderin)

**Abstract**

**INTRODUCTION**

Accurate intervention to those students who violated the rules and regulations of the school is crucial in molding the conduct of the learners. There are several ways on how the teachers approach the misconduct behavior of the students. However, there are no exact instances of what kind of positive discipline they will imply. Meanwhile, other schools do not have a concrete pattern of positive discipline. This study is indispensable to solve the problems of various education institution for the misdeed behavior of the learners.

**METHODS**

This study was crafted using Action Research method. Furthermore, the researcher utilized Qualitative technique. Ten (10) participants from the teachers and ten (10) participants from the students who have experience with the positive discipline were chosen using convenience and quota sampling technique under non-probability. The respondents of this study were the teachers and students of Labas Senior High School. The main data gathering instrument was the interview-questionnaire that was formulated by the researcher.

**RESULTS**

The study revealed that the participants' perception of positive discipline intervention by means of multiple intelligences was effective. This became an avenue for the students to attain the right conduct while they have been encouraged to show their innate skills and exceptional talents. Moreover, this intervention technique shaped the multiple intelligences of the learners and became a platform to develop their full potentials. In addition, positive discipline increases academic success and enhances social skills. This also became a way to let the students show respect to the teachers while they are engaged in the task given. Students see rules as fair, whereas, it has less disciplinary measures, suspension, and expulsion that lead to the improvement of their attendance.

**DISCUSSIONS**

Positive discipline played an integral part in further improvement of the student's capabilities while attaining the right conduct and behavior. It is significant to understand first the multiple intelligences of the students before imposing positive discipline. Meanwhile, positive discipline is a framework that serves as a guideline for a more cohesive culture and positive relationship between actors of the school institution. This study showed that reinforcement of positive approach is effective to acquire student's motivation and to stop behaving in an inappropriate way.

**KEYWORDS:** Positive Discipline, Multiple Intelligence, Classroom Management

**SUBMISSION ID:** R04A-STAROS-0087

## **Single Parents and Their Perceptions to K-12 Curriculum Implementation**

Innaho Caparas, Taytay Senior High School

### **Abstract**

#### **INTRODUCTION**

Stakeholders of the K-12 curriculum emphasized the role of education in realizing holistic development of the 21st-century learners through equipping them with necessary life skills so that they can contribute in the economic and social development of the family and community. Likewise, teachers and students have similar views on becoming globally competitive as a result of the implementation of the K-12 program. Yet, other concerns such as additional expenses on top of the added two years in high school are still worth the inquiry, specifically, for those with special cases such as solo parents or single mothers. Hence, this study is aimed to reveal the perceptions of solo parents on the implementation of K- 12 (Senior High School) in the Philippines.

#### **METHODS**

The researchers used the descriptive survey, through a validated researcher-made survey questionnaire, to gather information from the respondents. Respondents of this study are single parents of the Grade 12 students of Taytay Senior High School. The respondents were identified through the snowballing method and a total of 20 solo parents were chosen as respondents of this study. The data gathered were analyzed through descriptive statistics such as percentage, central tendency, standard deviation, and analysis of variance (ANOVA).

#### **RESULTS**

From the data gathered, it was found that the majority of the solo parents' age ranged from 31 to 50 years old. Most of them are working while some are managing a business in order to raise their children. In terms of the status of employment, 80% of the respondents are employed and the 20% left are unemployed. When it comes to monthly income, it was found that the majority of the solo parents are not receiving enough money to support their children's needs. Lastly, 60% agreed that the job of solo parents can't support the needs of the child in the K-12 Curriculum.

#### **DISCUSSIONS**

Based on the profile of the respondents, the economic capability of solo parents is not enough to fully support their children's education in the K-12 Curriculum. But it is of high importance to equipping learners with the necessary skills, thus, K-12 curriculum is essential. Yet, the findings of this study cannot deny that there are people in the society such as solo parents who need considerations, hence, this study can be used as a note to the policymakers, educators, and other stakeholders.

**KEYWORDS:** solo parenting, K-12, Taytay Senior High School, perceptions

**SUBMISSION ID: R04A-RIZALP-0042**

## **Stands and Awareness of Taytay Senior High School Students on Federalism**

Michelle Tejada, Taytay Senior High School

### **Abstract**

#### **INTRODUCTION**

Federalism is the allocation of power in the government to easily respond to the needs of the community. It enhances freedom and empowers racism (Kramer,1994). Over 30 years, the Philippines adopted the 1987 constitution. There are many administrations who tried to change the constitution of the Philippines, but all of their attempts failed. According to Dante Gatmaytan of the University of the Philippines College of Law, the charter change was started at the Marcos era. When the country was ruled by dictatorial type of government in the decade of years lead by the then President Ferdinand Marcos. In the present time, President Rodrigo Duterte attempts to change our government into a federal type of government through revisiting our 1987 constitution (Tomacruz, 2018). The purpose of this study is to give knowledge to those people who do not know what Federalism is.

#### **METHODS**

The research used quantitative research design. 60 HUMSS Grade 12 Students were randomly chosen. The researchers used a survey as an instrument to gather information from the respondents. This study utilizes a validated survey questionnaire to gather data, and descriptive statistics to describe the data gathered.

#### **RESULTS**

Result of this study showed that majority of the respondents were not informed of the basics of Federalism. It was seen that only 4 (6.67%) respondents are very informed, while 20 (33.33%) of the respondents are informed, and 36 (60%) of the respondents show they are not informed at all. Base on this study, 69% of Filipinos have no knowledge of the proposed federal system. The majority did not also agree on the charter change, because for them, it will just increase the number of corruptions. In these two questions, on the first part of the survey will test if the respondent is really aware of Federalism. Their response showed that 58% of the Filipinos are not aware of the name of the state being promoted while 31% are aware of the proposed states.

#### **DISCUSSIONS**

The results showed Filipinos' unawareness on federalism. As one Filipino claimed, the reason why the people in the Philippines don't want to have a charter change is that they are not well-informed on the nature and benefits of Federalism. While the findings of this study represent a small voice, it should be considered for it represents the voice of the people of this country.

**KEYWORDS:** Federalism, senior students' stands, Taytay Senior High School

**SUBMISSION ID: R04A-RIZALP-0043**

## **Strengthening Parental Supervision and Family Communication to Curb Teenage Pregnancy in Navotas City**

Celestin Ijsbrant Cayco, Denise Nicole Guatato, Franz Aubrey Salandanan,  
John Emil Aguilar, & Maybeñine Conde, Navotas National High School  
(Adviser: Juriz De Mesa)

### **Abstract**

#### **INTRODUCTION**

This research sought to provide a policy solution to the problem of teenage pregnancy in the city of Navotas by exploring the factors of poor parental supervision and weak family communication.

#### **METHODS**

Researchers used to survey and document analysis of policies culled from library and internet research.

#### **RESULTS**

Findings of the survey revealed that most teenagers who had previously engaged in premarital sex felt that they were not well-guided by their parents in making decisions about intimacy and sexual behaviors. Parents of pregnant teenagers admitted that sex was a taboo in family conversations. Low socio-economic background and lack of education were also identified as factors for poor parental guidance on sexuality education of teenagers interviewed.

#### **DISCUSSIONS**

The researchers propose strengthening parental supervision and family communication as aspects of a comprehensive teenage pregnancy prevention policy for the city. This can be done through symposia, information campaign and other educational outreach to families especially for those with challenging socio-economic status.

**KEYWORDS:** teenage pregnancy, parental supervision, premarital sex

**SUBMISSION ID:** NCR1-NAVOTA-0000

## **Success Stories of 2006 Graduates of Cabarroguis National School of Arts and Trades**

Aiziel B. Calpito

(Adviser: Lovely Edelweiss Hao)

### **Abstract**

#### **INTRODUCTION**

This study sought to discover the successful 2006 graduates of Cabarroguis National School of Arts and Trades (CNSAT). It is a splendid outlook on achievements, personal lives and inspiring examples on how to be a successful person. This is vital to both the institution and the students. First, it may provide a basis on which to measure the academic relevancy or how their studies in CNSAT helped them in their success today. Second, this collection of alumni lives and interesting anecdotes on their careers will inspire students to achieve success through adopting common traits from the alumni.

#### **METHODS**

The researcher used the tracer study method. There are 104 graduates but only 50 out of them were reached out to. However, only five alumni were successfully interviewed and included in the study due to time constraints. The study used a free-answer type questionnaire. Face-to-face and via social media interviews were conducted to collect data. The researchers made a letter asking for formal approval to conduct the interview to the 2006 alumni and asked consent to include their names in this study.

#### **RESULTS**

This study found that among the 2006 graduates of CNSAT, some of them are now a registered nurse and a Science teacher in Cabarroguis National School of Arts and Trades. One is a caretaker in Lebanon, another a Hotel and Restaurant Management student and currently taking her on- job training in Boracay. One of the alumni is an accounting assistant in Cook Island, and the other a registered nurse in the United Arab Emirates. It was a common sentiment among the alumni that CNSAT taught them the skills that enabled them to compete in terms of job-seeking and working attitude.

#### **DISCUSSIONS**

The results affirmed that success is not really measured by wealth, position, college degree, power or any society's standard, but being able to find the meaning in the littlest things and being able to do what you love every day. Having contentment, satisfaction, and self- fulfillment is also considered success. Moreover, others cannot tell how successful you are; success is a metrics only you can define for yourself.

**KEYWORDS:** Success, success stories

**SUBMISSION ID:** R002-QUIRIN-0001

**The Coping Mechanisms of Persons with Disabilities: Personal Experiences of Physically-Impaired Senior High School Students of Amadeo National High School**

Lance Gabriel Garcia, Joey Angelo Bawag, Cjhay Costa, & Janmilson Dingalsan, Amadeo National High School  
(Adviser: Michele Rocela)

**Abstract**

**INTRODUCTION**

Disability is not just a health problem, it is a complex phenomenon, reflecting the interaction between features of a person's body and features of the society in which he or she lives (WHO, 2011). Overcoming the difficulties faced by people with disabilities require interventions to remove environmental and social barriers (ibid).

This study is about the Coping Mechanisms of Persons with Disabilities (PWD) students of Amadeo National High School. The study is beneficial not only for the PWDs, but for the society in general, so that their situation, social life, and coping mechanisms can be better understood. The community could be more aware of the real challenges these PWDs are facing in their everyday lives.

**METHODS**

This is a qualitative Research. Data was gathered by conducting an interview with the five (5) PWD Senior High School Students in Amadeo National High School,

**RESULTS**

All of the five informants were bullied since elementary days and even until now that they are in the Senior High School. Despite their condition and the challenges that they faced, they were able to cope with their condition for they have their family and friends that support them.

**DISCUSSIONS**

Based on the study, the five (5) PWD Students in Amadeo National High School were able to cope with their condition despite being bullied in school. Bullying is still a problem the school should address. There must be an Awareness Campaign Program as part of the activities in School.

**KEYWORDS:** Persons with Disabilities, Coping Mechanisms

**SUBMISSION ID: R04A-CAVITP-0055**

## **The Reality Behind the Pantawid Pamilyang Pilipino Program (4Ps) Implementation: Exploring the Possibility of Effecting Change in Local Communities**

Bobby V. Nacario, Jr., San Antonio National High School

### **Abstract**

#### **INTRODUCTION**

The Pantawid Pamilyang Pilipino Program (4Ps) is viewed as a poverty shield among the poorest of the poor. This program has been existing to assist families in providing education, health, and nutrition of their children. Despite its increasing impact, its implementation is tainted with issues among program beneficiaries and the displaced applicants. In this study, the researchers aimed to unveil the reality behind the 4Ps implementation. Its main agenda is to produce valid results that would clarify issues about the selection process and the utilization of grants including the mechanisms available to ensure compliance to program guidelines.

#### **METHODS**

The method used in the conduct of the study is descriptive-evaluative-exploratory - a combination of the quantitative and qualitative data analysis technique. One hundred eighty-eight (188) 4Ps members are chosen to answer a survey on the implementation, process of selection and utilization of grant. After noting the results, an interview was conducted among non-participants to verify the veracity of the data, and among the implementers to validate the study findings. An analysis was made to identify what programs or activities are appropriate to disseminate the study findings and to resolve non-compliance to program guidelines.

#### **RESULTS**

The effectiveness of the 4 Ps implementation has generated opposing views. From the point of the implementers, it is highly effective but for the beneficiaries, it is not. Political influence is a major problem that hinders the effectiveness of the selection process, while the diversion of funds affects the utilization of grants. Likewise, pawning of cash cards is a critical violation noted among program beneficiaries. However, despite the emergence of these issues, grantees are not fully aware of the strategies initiated by the Department of Social Welfare and Development (DSWD) to practically eliminate any opportunity for political influence and diversion of funds in its implementation. Beneficiaries are also not informed about the corrective actions and the procedures employed to eradicate misallocation of grants, like regular cash grant monitoring, reports from parent leaders and barangay council. Case management is also in place to resolve issues on pawning and students at risk of dropping, which according to a municipal link has 3 phases of counseling remedies. Finally, some remedies were noted to have significant bearing to improve the effectiveness of program implementation, which include: 1) Intensive orientation program; 2) Effective strategy for shortlisting of applicants; 3) Creation of a technical working group to facilitate regular evaluation of programs and activities and its impact on beneficiaries; 4) Intensive pre-registration of applicants; and 5) Creation of institutionalized programs to monitor and evaluate the utilization of cash grants.

#### **DISCUSSIONS**

Regular evaluation is necessary to uphold the sustainability of the program. Programs and activities relative to the implementation of the 4Ps must be clearly understood by the grantees. Involvement of 4Ps members to the monitoring and evaluation procedures of the implementing unit will result in more active participation and compliance to program guidelines and activities. Hence, in every strategy, a 4Ps member is willing to volunteer to ensure its efficiency.

**KEYWORDS:** Pantawid Pamilyang Pilipino Program, (4Ps), Program Implementation, Local Communities

**SUBMISSION ID: R005-IRIGAC-0011**



## **Time Management Habits and the Grade 12 Senior High School Students**

Aiziel B. Calpito & Carmina A. Calarion  
(Adviser: Lovely Edelweiss Hao)

### **Abstract**

#### **INTRODUCTION**

Good time management is vital for students to shine for it can increase productivity and efficiency, decrease stress and can create greater opportunities to achieve important life and career goals (Thuy Lam). A study conducted by Natividad et.al (2018) found that the academic performances of Grade 12 students of Cabarroguis National School of Arts and Trades (CNSAT) sometimes affected by having no vacant time, which impacts their preparation for the examination. Perhaps, this has something to do with their time management, thus, the researchers conducted the study to assess their time management habits and a means to develop them.

#### **METHODS**

Data were gathered from 162 Grade 12 Senior High School students, accounting for 56% of the total population of 272. The study participants were invited to participate in the study through a cover letter which asked for their consent and assured the confidentiality of the gathered information. The study used a researcher-developed survey questionnaire that was validated by the Research Committee of CNSAT. Data were treated statistically using frequency and percent, mean, and independent t-test. The data were analyzed using the Statistical Package for Social Sciences (SPSS) Student-Version.

#### **RESULTS**

Throughout the study, it had been found that Grade 12 students often submit their written outputs and projects on time, and often prepare for examinations as well with no significant difference on the time management habits when they are grouped according to their track. But one factor that influenced the respondents' time management in terms of submission of written outputs and projects is that they prefer to not often submit in advance, and would rather wait for the deadline.

#### **DISCUSSIONS**

The results demonstrate that teachers should fix a deadline for every written output there still a need to improve time management habits of the students. This also infers that parents should instill discipline to their children; teachers and school administrators should make an innovative intervention in enhancing time management.

**KEYWORDS:** examination, habits, projects, time management, written outputs

**SUBMISSION ID: R002-QUIRIN-0002**

## **SOCIAL RESEARCH**

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## **Contributing Factor of Youth to Sukarap Gang Involvement in Malungon Sarangani Province**

Live C. Angga & John Ken S. Bito-onon

### **Abstract**

#### **INTRODUCTION**

The main issue to be addressed in this research was to determine the factors on the Malungon Youth to Gang membership called SUKARAP. Sukarap stands for suyop/sugal, kawat (theft), and rape. In its outcry for peace, the Municipality of Malungon is pounding on the implementation of Republic Act 9165 of the Philippines/anti-drug campaign of the government and Republic Act 9287 for anti-illegal gambling activities, which were strengthened by President Rodrigo R. Duterte. The Municipality was a zone of peace but is now overwhelmed by five (5) identified groups of Sukarap, namely; TPM, GPS, RMC, BCL & RMR Sukarap group. There was no study conducted about Sukarap in Malungon regarding the operation and recruitment of the gang that can help with the awareness of the parents and the community.

#### **METHODS**

The researchers were interested in investigating the profile of the subjects. Purposive sampling was utilized, and this study applied the mixed method research design. The quantitative research design was used to identify the demographic profile of the forty (40) subjects. Two (2) humanities and social science teachers validated the interview guide. The researchers conducted two ways to gather the data: First, one member from each group was invited to gather the data on the demographic profile using the survey questionnaire; then, these five data gatherers were interviewed to identify the factors on the involvement of the youth in the Sukarap group. The rigor of the research was followed accordingly.

#### **RESULTS**

The main influencer of these youth was their friends, followed by rank 2, which was through the members of the Sukarap group. The purpose of joining the group was because they were excited to explore, be happy and meet more friends. This study found that 83% of them claimed they enjoy in their group, while seven percent (6.6%) said they meet their true friends. The gang members are engaged in several vices including smoking, accounted for 66% from the group, and drinking hard liquors at 33%. The motivation for joining the group was because of the financial problem and the family problem followed by gender inequality (6.6%). In terms of age, 16 to 19 years old are the majority (90.00%) members of the Sukarap group, with the youngest at 14 years old.

#### **DISCUSSIONS**

There were no members in the Sukarap group living above the poverty line. The ratio of student to out-of-school youth was 7:3, and the ratio of male to female members was 9:1. From the findings, Sukarap group members in Malungon were not taking illegal drugs.

**KEYWORDS:** Sukarap, Gang, Gang Involvement, Malungon, Sarangani Province

**SUBMISSION ID: R012-SARANG-0043**

## **Discovering the Needs of Out of School Youth as Social Responsibility**

Reynaldo Cruz, Department of Education

### **Abstract**

#### **INTRODUCTION**

The Philippine government through the Department of Education is continuously looking for all the possible ways of helping every Filipino in acquiring a decent education. The department conceptualized and formulated different programs and projects to make sure that no Filipino learners will be left behind when it comes to education. But despite all the efforts made by the government, why is it that there are a lot of Filipino children and youths who are not in school, most especially in the municipality of Baliwag, Province of Bulacan. The researcher of this study wanted to find out the reasons why there are still out-of-school.

#### **METHODS**

The study used pure qualitative research methodology through ethnography with documentation. In order to gather data, the researcher was immersed for several days for participation and observation of the lives of the five out-of-school youths from the five barangays of Baliwag, Bulacan. While on the field, the researcher brought his cellular phone to record and to take pictures of important events in the lives of these participants. The researcher also did a narration of everyday events and conducted informal interviews.

#### **RESULTS**

Based on the analysis of data gathered from the field, it was revealed that the three social institutions; education, government, and religion, did not address the needs of the five participants. Their lives revolved around poverty which weakened their motivation to pursue their goals and aspirations in life. Their parents lacked education and skills in disciplining their children. This lack of education among their parents was also a factor that affected their ability to provide the basic needs of their children. The participants had interest and potential that could be developed to become successful if they would be given the chance.

#### **DISCUSSIONS**

The result of the study shows that the three social institutions should really need to do their part to help all the out-of-school youth. Bringing them back to the school and giving them education are some of their social responsibilities that should be fulfilled. All their programs should be well disseminated and coordinated within the community through the local government officials and through the parents. They need to be well informed of the programs intended for the youth and out-of-school youth. They should also have proposed plans and programs for out-of-school youths. Parents should be well-educated to meet the needs of their children.

**KEYWORDS:** social, responsibility, needs, discovering, out of school youth

**SUBMISSION ID: R003-PAMPAN-0002**

## **SOCIAL SCIENCES**

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## **The Lived Experience of Students Who Have Absent Fathers: a Phenomenological Study**

Michelle Bercede, Student

### **Abstract**

#### **INTRODUCTION**

Some students who grew up without a stable paternal presence are likely to experience negative outcomes such as low self-esteem, psychological disturbances, difficulty with romantic relations, poverty, sexual risk taking, dropping out of school, and struggling difficulties. Research on students with absent fathers may provide insights regarding the lived experiences of students who grew up without paternal involvement. Insights on the father-child relationship are important because they can impact the value of the parent-child relationship and other relations.

#### **METHODS**

Interview and survey questionnaire was used. We used purposive sampling method. We selected the students who have absent fathers of Mother of Mercy Academy from Grade 7 to Grade 12.

#### **RESULTS**

All those students with absent fathers of Mother of Mercy Academy that we conducted are having different reasons behind. It was shown that students who live without their father are having hardships financially and emotionally. The lessons that participants resulting from having absent fathers is appreciating the people who are always with them, being independent, and making a better life in their own children in the future.

#### **DISCUSSIONS**

Students without fathers were really strong and struggled with the challenges they faced with the situation. They strive as a person growing up with a strong heart. We recommend that other researchers do more studies about this to understand students who undergo this situation.

**KEYWORDS:** Assessment, Students, Absent Fathers

**SUBMISSION ID: R013-SURSUR-0046**

## **The Effects of Inflation on the Daily Needs of Customers in San Juan Public Market**

Sheryl Guerra, San Juan Senior High School

### **Abstract**

#### **INTRODUCTION**

Consumers modestly grow their spending. Inflation is back after a long post-crisis stint of disinflation and in some instances outright deflation. One of the most affected by inflation are the consumers who composed products for the daily needs. Consuming buying power means how the people spend money on goods and services or purchase the product on a specific availability of money and wages. Every person wants to spend money for his basic needs, luxuries and entertainment but it changes every year because of inflation. The study aimed to know the effects of inflation that consumers of San Juan, Batangas experience in buying their daily needs. The research sought to determine if there is a significant relationship between the profile of the respondents and the effects of inflation towards the respondents' daily needs.

#### **METHODS**

The descriptive method of research was used to know the effects of inflation on the daily needs of the customers. This study was conducted to 65 customers of San Juan Public Market through random sampling. Statistical tools used in the study were composite mean, ranking, and weighted mean.

#### **RESULTS**

The study revealed that most of the consumers of San Juan Public Market were greatly affected by inflation. Unemployed customers in the market suffer most in buying goods with higher prices. It only implies that majority of customers do not have stable job. No matter how much they spend it for their daily needs. High number of consumed goods indicates that those products are the primary necessities of people. The return of inflation for goods and services other than foods and energy also contributed to the upturn in the indexes for intermediate-demand and final demand goods.

#### **DISCUSSIONS**

Based on the result of the study the consumers face the difficulties brought by inflation. They need to be wise in budgeting and spending of money in order for them to escape from famine. Customers become concerned about the increase in uncertainty in an economy long term real economic growth that may become depressed. People tendency during inflation is to hoard goods. In that case purchasing of currency fall at ever faster rate. As inflation pushes the prices of goods and services higher, it also positively correlated with higher wages. A tight job market might lead to wage growth which is seen as one of the causes of inflation. In this case, a tight job market might lead to wage growth.

**KEYWORDS:** Goods, Inflation, Customers, Daily needs, Market, Prices

**SUBMISSION ID: R04A-BATANP-0775**

## **Project SM: Stakeholders Mobilization**

Arbin Sarmient, Department Of Education - Laguna-Siniloan District

### **Abstract**

#### **INTRODUCTION**

The school environment is crucial to child's learning. Pupils will be more inspired to go to school if the school is conducive to learning. Maintaining the school environment as well as improving its facilities needs a lot of funds. School Maintenance and Operating Expenses is not sufficient for the maintenance and improvement of school facilities. We need the support of our external stakeholders to do this job. Involvement and participation of the external stakeholders is very low in school activities. Our stakeholders play a vital role in helping the school generate funds for the improvement of our school facilities.

#### **METHODS**

The school organized its School Governing Council (SGC). A series of meetings were conducted on how they could work together to improve the school's physical environment. The Grand Alumni Homecoming and Organizing Alumni Association was also made with the help of the SGC. Fund raisings such as the Fun Run and solicitation of funds lead by the PTA was made.

Creation of the school's official Facebook Page and regular posting of school needs, publication, and reporting of projects and donations of private individuals & NGO's, were done using the school's official FB Page. Recognition of Stakeholders was also done.

#### **RESULTS**

In June-September, only 8% of the total school funding came from donations of stakeholder's while School Donations from October-January comprises 50% of the total school funding source. Donations received by the school rose from 8% to 50%. External stakeholder's support / donations received increased by 42%. This shows that activities implemented under Project SM (Stakeholders Mobilization) were effective. Due to the increased external stakeholders support and donations, a remarkable improvement in school facilities was achieved.

#### **DISCUSSIONS**

Organizing the schools' internal and external stakeholders is very important. School Governing Council (SGC), General Parent and Teachers Association (GPTA), the Alumni Association and Teachers plays an important role in achieving the school's goals and objectives. As the saying goes "It takes a village to raise a child", the school alone cannot produce holistic individual, the school needs the support of external stakeholders. If the school can maximize stakeholders' participation, it is not only the physical facilities that will be improved, but the drop-out crisis and deteriorating academic performance can also be addressed.

**KEYWORDS:** Stakeholders, Mobilization, Deteriorating, External, Internal

**SUBMISSION ID: R04A-LAGUNA-0347**



**Perceived Effectiveness of Pantawid Pamilyang Pilipino Program  
Among the Beneficiary Families in Sunshine Ville Barangay Cabuco  
Trece Martires City, Cavite**

Alma Isabelle Manalang Brillo & Kyan Andro Aguirre, Trece Martires City  
Senior High School

**Abstract**

**INTRODUCTION**

One of the major problems of Filipinos is poverty. Poverty is a state or condition which a person or community lacks the financial resources and essentials for a minimum standard of living (Chen, 2018). The Philippine Government initiated a program called Pantawid Pamilyang Pilipino Program (4Ps) to address this phenomenon. Experiences and perceptions of the beneficiary families from different barangays in the Philippines have been sought to assess the effectiveness of the said program. However, there had been no study conducted among the beneficiary families in the the City of Trece Martires Cavite. This study was conducted to determine the effects before and after the families became its beneficiaries.

**METHODS**

Qualitative phenomenological design was employed. Permission of the barangay captain was sought to conduct interview among six family beneficiaries of the program. The families were purposively selected since one of the researcher's family is also a member of 4Ps. In depth interview was conducted with each family. Interviews were then transcribed, and transcripts were validated by the participants. Lastly, coding was done, and themes were formed from the significant answers gathered from the participants.

**RESULTS**

Participant's life situation before was so hard and they were obliged to have extra works due to lack of financial support. They also had difficulty sending all their children to school and they cannot even bring a sick family member to a doctor. When they became 4Ps beneficiaries, they were able to meet and sustain their everyday needs, the education of their children, and the health of their family members. Furthermore, 4Ps program consistently provides them the assistance their needs.

**DISCUSSIONS**

The Pantawid Pamilyang Pilipino Program (4Ps) is a big help to people who lack financial needs. The participants said that there is a big change in their lives when they became members of the program. It helped them meet their basic and financial needs. The Pantawid Pamilyang Pilipino Program (4Ps) had effectively meet its purpose in alleviating the lives of poor Filipinos in different ways.

**KEYWORDS:** Pantawid Pamilyang Pilipino Program (4Ps), poverty, beneficiary families, effectiveness

**SUBMISSION ID: R04A-CAVTP-1028**

## **Online Shopping as Perceived By the Senior High School Students**

Kristine Prepose

(Adviser: Merlin Remetio)

### **Abstract**

#### **INTRODUCTION**

Online Shopping is a fast growing concept nowadays, globally, and it is seen that number of online shops have been increasing. It is also obvious that there has been an upward trend of consumers who want to purchase online rather than conventional shopping. Millennials as the biggest supporter of online market will contribute to the success of online retails in the future. Internet is widely used by people of this generation and in fact, people feel much comfortable in using this internet for variety of purposes including Online Shopping.

#### **METHODS**

This study is a qualitative study and purposive sampling was used. Using a phenomenological approach, the researchers conducted a personal interview with the participants. Fifteen Senior High School students in Makiling Integrated School responded to a set of structured questions. The researchers also recorded the responses of the participants.

#### **RESULTS**

Students who participated in this study were Senior High School students who were frequent users of different Online Shop such as Lazada and Shopee. Most of the participants are buying products online because of its convenience. The buyers easily find what product they want to buy and buyers did not exert any physical effort unlike in the conventional shopping. Different advantages and disadvantages were revealed based on the response of the participants. Participants bought products in online shops such as clothes, accessories, stationery products, etc. In the responses of the participants, majority of them answered that there were disadvantages in terms of the quality of the product and the products delivery time however, other participants responded positively. Buying online brought benefits for the buyers in terms of buying different products. Most of the participants are willing to recommend buying in online shops.

#### **DISCUSSIONS**

The result shows the advantages and disadvantages of buying products in online shops. In buying online, some circumstances are unavoidable. Senior High School students used online shopping for their convenience without taking into consideration its disadvantages.

**KEYWORDS:** Online Shopping, Millennials, Products

**SUBMISSION ID:** R04A-CALAMB-0072

**Mommy Bili Mo Ako Niyan: a Narrative Analysis on How Children  
Affect Their Parents' Purchasing Decision Making**

Juvy Sedurane

(Adviser: Merlin Remetio)

**Abstract**

**INTRODUCTION**

In today's generation, children have established an important place in the market compared to the past generation. Children nowadays act as consumers, buyers, spenders, and they greatly influence the purchasing decisions, so it only proves that children play an important role for market as a buying consumer. Researchers want to identify the factors which tend to stimulate the children in influencing their parents for making the purchase decision.

**METHODS**

In conducting the study the researchers prepared semi-structured interview questions and also utilized the qualitative study and the approached used is narrative analysis. The researchers used purposive sampling for the selection of the respondents having 8 parents whose age are ranging from 30-45 and 8 children whose age are ranging from 10-15 years old. This research is only limited to those who lived in Barangay Real, Calamba City.

**RESULTS**

Majority of the respondents who participated in the study perceived that 1.) The role of the children in purchasing a product served as the basis of their parents buying decision. They consider their children's wants and needs to make them happy and satisfied. 2.) Parents consider the whims of their children. 3.) Majority of the children are influenced by the product advertisement and product brand as endorsed by television personalities.

**DISCUSSIONS**

The results demonstrated how children influence their parents in the purchase decision making. This implies that children nowadays are no longer passive with their parents in terms of purchase decision making as compared to the children before. This study also revealed that children are not only acting as consumers, but as influencers for their parents in choosing what to purchase. This study recommends that parents need to manage their children's attitude towards purchasing a product. The parents have the power to consider their authority over their children.

**KEYWORDS:** Purchasing, Parents, Decision Making

**SUBMISSION ID: R04A-CALAMB-0073**

## **Millennial - Based Food Buying Behaviors**

Angelika Nicole Fulleros  
(Adviser: Merlin Remetio)

### **Abstract**

#### **INTRODUCTION**

Millennials love to buy milkshakes, burger, donuts, and fries around 30 percent more often than any other generation. This is relevant because food habits change drastically with the arrival of children. Millennials today become more active in food's evolution that's why food is making its name today. Teens nowadays love to buy food and post it in their social media accounts. Many of them are attracted with the food's color, taste, brand, and appearance.

#### **METHODS**

The study used convenience sampling. The narrative analysis approach was used in the research. The researchers conducted a one-on-one interview with the millennial students of Makiling Integrated School, ages ranging from 12-20 years old. The researchers asked open-ended question and recorded their responses.

#### **RESULTS**

Students who participated in the one-on-one interview perceived 9 substantial problems. Most likely to consume sweet products but not excluding salty foods such as fries, junk foods, and many more showing different taste preferences. It was seen that the food that millennial consumers purchase differs when they are with their peers even when it doesn't suit the participant's preferred food. Peer pressure affects what food a certain teen buys to avoid isolation or being left-out. Brands have been part of the Millennials decision making in purchasing food. Usually those branded food are in trends coordinating with personal product choices resulting to those various companies to gain more profit. Visually visible tactics and taste catch millennials the most. Branded or not, millennials expected that those products will fulfill their cravings and hunger. Malls are on demand in food product selling for millennials put their trust that their safety is secured. This reveals that the food buying behaviors of millennials can be defined as big spenders for they value their image than their financial capability.

#### **DISCUSSIONS**

The results showed that the food buying behaviors of millennials were connected to their public image. Comments and social media has made an impact to the millennials which made them choosy and socially conscious. Guidance of the elders is necessary especially in handling finances. The financial capability pushes the millennials to purchase branded foods and unable to turn down the urge and influence of peers.

**KEYWORDS:** Millennials, Behavior, Food

**SUBMISSION ID:** R04A-CALAMB-0075

## **Live Experience of Student with Disabled Parents**

Marie Joyce Berenio, Trece Martires City Senior High School

### **Abstract**

#### **INTRODUCTION**

Disability is a condition that restricts everyday activities of a person. People with disabilities can consume a family's time, energy, and money, along with altering the lives of every family member. For children, this can be especially difficult. The purpose of this study was to determine the common difficulties of students with disabled parents and to determine the effects of common difficulties of students with disabled parents. In this study, the researcher explored the experiences of students with disabled parents.

#### **METHODS**

The researcher used the phenomenology as the research design considering the experiences of students with disabled parents by conducting interviews and focus group discussion to gather. It is a qualitative phenomenology approach so the researcher used snowball sampling in choosing respondents wherein the respondents are referred to by the researchers. Three students from grade four to college with disabled parents were interviewed. The interview was transcribed to interpret the data. Thematic analysis by Braun and Clark (2006) was used to code the data.

#### **RESULTS**

Students that participated in our phenomenological study perceived common difficulties with disabled parent. The result revealed that the students with disabled parents used to experience common difficulties such as bullying and physical disability. The result also demonstrated the effects of these common difficulties to the daily lives of students with disabled parents by emotional issue, personal issue, and experience to develop family misunderstanding. The result also portrayed that the students living with disabled parents are more capable in handling their own emotions, especially when it comes to the common difficulties in their daily lives.

#### **DISCUSSIONS**

The study portrayed the common difficulties of students with disabled parents and showed the effects of these common difficulties to the daily lives of students including emotional issue, personal issue and experience to develop family misunderstanding. It also expressed that bullying was the common difficulty of the student with disabled parent.

**KEYWORDS:** disability, common difficulties, students with disabled parent

**SUBMISSION ID: R04A-CAVTP-0830**

## **Lived Experiences of First Born Male Children: a Phenomenological Study**

Allaiza Mae S. Ramos & Kyla Hyacinth J. Baldopea, Trece Martires City Senior High School

### **Abstract**

#### **INTRODUCTION**

Alfred Alder's theory of birth order influenced many researchers to conduct studies related to birth order. Past researches focused on the differences in the birth order. These differences were attributed to the distinctive experiences that each child has as a member of a social group. However, no study focused on live experiences of male children was found. In this study, the researchers determined the live experiences of first born male children.

#### **METHODS**

This study used the Interpretative Phenomenological Analysis to explore the live experiences of six male children in being the first born in their family. Researchers used an in-depth, semi-structured interview as a tool in gathering data. Participants were identified using purposive sampling and snowball technique and guided by the following criteria: (a) male, (b) first born, (c) has a sibling/ has siblings, (d) resides in specific barangays of Trece Martires City, and (e) willing to participate in the study. Interviews were transcribed for the data analysis. After reading and analyzing the data, three master themes were emerged from the data: (1) struggles of first born male children, (2) involvement of their parents and sibling/s, and (3) roles of first born male children in the family.

#### **RESULTS**

Based on the results of the study, participants experienced difficulties because of their responsibilities as the first born of their family. The respondents also tend to practice leadership because of their roles in the family. Most of the participants feel pressured because of parent expectations. The researchers also found out that majority of the respondents experienced being compared with their siblings and receive fewer amount of attention from their parents than their sibling/s.

#### **DISCUSSIONS**

The results of the study showed that the experiences of first born male children are characterized by pressure, need for authority, and lack of attention. The inclusion of their relationship with their sibling/s and parents has a significant impact on how they develop distinct characteristics and behaviours that affects their live experiences.

**KEYWORDS:** first born, male children, live experiences, birth order

**SUBMISSION ID:** R04A-CAVTP-0827

## **IPAID (Information Provider about Illegal Drugs) Application**

Arbie Gem Saloria, Edren Marquez, & Roskoe Jr. R. Solis

### **Abstract**

#### **INTRODUCTION**

There are many people who are addicted to drugs so we created an application about drugs to how it affects our body physically and mentally, what is the symptoms and the negative effects of a certain drugs to the body.

#### **METHODS**

We gathered the information of certain drugs that was needed in the application by using the website and some books in the Learning Resources Center that were related to drugs. We thought of the design for the application and created the application using the electronics in MIT app inventor. We conducted a pre-test and post-test to learn how the application effects the knowledge of junior high school students.

#### **RESULTS**

The number of correct answers in the post-test wherein the students used the application was much higher compared to the number of correct answer in the pre-test wherein the student didn't used that application.

#### **DISCUSSIONS**

There is a significant difference in the results of the test that we conducted. The experiment that we conducted in the junior high school shows positive results. It shows how the application helps a certain student to increase their knowledge of a certain drug that they would want to learn about.

**KEYWORDS:** Maryclaire24

**SUBMISSION ID:** R04A-CAVITP-1396

## **Key Performance Indicators (KPI): Dashboard in Measuring Performance Access in the Division of Batangas Province**

Rodrigo Castillo, Department Of Education - Batangas

### **Abstract**

#### **INTRODUCTION**

This study aims to evaluate the Key Performance Indicators in access such as Gross Enrolment rate and Net Enrolment Rate, Cohort Survival Rate and Completion Rate, and Transition Rate of the Division of Batangas Province. It also defines the initiative and intervention programs, projects, and activities that may be implemented to uplift the performance of the province of Batangas in caring and keeping all learners in school.

#### **METHODS**

This action research used a qualitative and research method. Data analysis is based on the generated report coming from 37 districts of the division. On site validation on the report submitted by the district offices and an unstructured interview with the school head and district supervisors was made to confirm the validity of the study. Results of analysis were used as reference point in detecting the suitable intervention packages, activities and initiatives.

#### **RESULTS**

Based on the findings of the study, the following were gather as results of the division KPI: The increasing enrollment rate in the primary and secondary level shows positive effect in its performance level and fluctuating results of cohort survival rate and completion rate direct the researchers to conduct intervention in keeping all learners in school

On the other hand, the decrease of transition rate detect that there were problems encountered by the learners in continuing their basic education program. One of the common recognized hitches are the distance of the school to the learner's residence and its economic condition. An initiative was conducted by the researcher to address the decreasing transition rate.

#### **DISCUSSIONS**

The Schools Division of Batangas, as a result of the study and site visitation and validation, should initiate the establishment of additional JHS and SHS school sites through the initiative of the local government unit, particularly in the district/municipality with only one to three junior high school to improve participation and transition rate. The SDO should initiate the establishment of additional JHS and SHS school sites, particularly in the district with only one to three junior high schools to improve participation and transition rate.

**KEYWORDS:** Gross enrollment, Net Enrollment, Performance measure, performance access,

**SUBMISSION ID: R04A-BATANP-2122**



**Esteriotipong Identidad, Personalidad, at Imaheng Inilalarawan Sa Mga  
Ginagampang Papel Ng Mga Tauhan Sa Nobelang "Fifty Shades of  
Grey", Isang Kritikal Na Pagsusuri Sa Erotikang Katha**

Theresa Robledo, Department Of Education

**Abstract**

**INTRODUCTION**

Ang kabanatang ito ay naglalaman ng suliranin at kaligiran. Kasama dito ang konseptong teyoretikal at konseptwal, mga suliraning bibigyang kalutasan, mga limitasyon ng pag-aarl, mga kapakinabangan, at ang pagbibigay kahulugan sa mga salitang ginamit na binigyang kahulugan upang lubusang maunawaan ang pag-aaral na ito.

**METHODS**

Ang disenyo ng pananaliksik ay pinagsamang "Descriptive at Qualitative", kung saan tatangkain ng mananaliksik na pag-aralan at suriin ang kasalukuyang damdamin, kaisipan at pananaw ng mga respondente na nakatuon sa pagsusuri ng mga esteriotipong identidad, personalidad at imahe ng mga tauhan na inilalarawan sa erotikong-kathang-nobelang Fifty Shades of Grey.

**RESULTS**

Ang mga kabisaan ng katha sa isip ay ang paglinang ng kamalayan ukol sa mga esteriotipong identidad, personalidad, at imahe na isinasalarawan ng katha at mabatid ang epekto nito sa kamalayan. Ang bisa sa damdamin ay nagsasaad ng sari-saring emosyon at damdamin ang napukaw sa kanila bilang mambabasa katulad ng pagkakaroon ng malawak na imahinasyon upang mas lalong maging kaaliw-aliw itong basahin at hindi nakakasawa. At ang bisa sa kaasalan ay ang balyus na dapat palakasain sa tingin ng mga tagatugon ay ang pagpapahalaga ng tao sa gawaing erotiko o seksuwal, dapat na ang tao ay hindi limitado sa kung anong mga paraan na dapat gawin at walang polisiya, patakaran o kasunduang sinusunod.

**DISCUSSIONS**

Ang implikasyon ng katha ay ang karahasan sa kababaihan at pagkontrol sa seksuwal o erotikong manifestasyon ng relasyon. Ang pag-iral ng sadism at masokismo sa kulturang popular ay nabatid din.

**KEYWORDS:** Filipino Balyus Fifty Shades of Grey Personalidad Pagtuturo

**SUBMISSION ID: R04A-CAVITP-1730**

**Evaluation of Family Planning Method of the Constituents of Brgy.  
Amoroy, Aroroy, Masbate**

Sunshine Culibar, Department Of Education

**Abstract**

**INTRODUCTION**

Traditionally, to have children, women and couples had to count solely on prayer. Some couples who desired children were not able to have them. Other couples have desired fewer children or pregnancies that were spaced farther apart, but had trouble accomplishing this goal. On the 20th century, the most reliable way to prevent or space out pregnancies was abstinence. Fortunately, there are many more family planning methods at present (Ajmera, 2016).

**METHODS**

This study evaluated the family planning methods used by the constituents of Barangay Amoroy. Simple random sampling was used in choosing the respondents of the study. Out of 1,124 populations within 222 families of the said barangay, the researchers got the 45% to participate and served as respondents. Close-ended questions translated in Filipino were used to answer the questions in the survey questionnaire.

**RESULTS**

Findings revealed that the respondents' age are mostly between 26-29 years. Most of wives are housekeepers while their husbands are laborers. Most of them have 2 children. Seventy five percent (75%) of the respondents revealed that among the family planning method introduced by the barangay, they prefer to take pills. As to its effect to the lives of the respondents, they say that they were able to support the needs of their family. The family planning method promoted by the respondents to encourage healthy family is by using pills.

**DISCUSSIONS**

Family planning methods have five (5) types that include barrier method, hormonal method, IUD, natural method, and permanent method (Hesperian, 2016). Contraception such as pills is widely used as anti-conception to avoid pregnancy. In Brgy. Amoroy, this contraceptive was mostly used by their constituents that results to a good relationship of the family because they were able to support the needs of the family. This result matches with the findings of the Mantell (1998) who states that family planning users were more satisfied with their lives compared to non-family planning users. With this, the barangay may conduct a forum regarding family planning that could give emphasis on the use of pills since it was proven that the couples were able to give the welfare of the family. Other barangays of Aroroy can also benchmark the methods used by the residents of Amoroy to lessen their population and could provide for the needs of their family. Thus, children will not be deprived on their rights for survival, development, participation, and protection.

**KEYWORDS:** Evaluation, family planning methods,

**SUBMISSION ID: R005-MASBAP-0014**

**Alcohol Addiction Among Concepcion National High School Students:  
Basis for Development Program**

Jever C. Sumblingo

**Abstract**

**INTRODUCTION**

Some students of Concepcion National High School (CNHS) are engaged in alcohol addiction. They believe that alcohol will boost their confidence and some of them think that alcohol can help them to forget their problem. If these students are still engaging in alcohol addiction, they will not excel to their study. Students with alcohol use disorder present with inability to form interpersonal relationship, poor academic performance, missing classes, miss behavior, irritability, lack of sleep, and tardiness.

**METHODS**

This study utilized a researcher-made questionnaire. The questionnaire was divided into two parts. The first part asked the personal profile of the respondents. The second part delved in drinking habit of the respondents. The researchers conducted a survey at Concepcion National High School on July 2018. The respondents are 50 alcohol addicts of Concepcion National High School who were purposively selected. The respondents were surveyed during their vacant period.

**RESULTS**

This study shows that 22 out of 50 respondents are residing in Barangay Concepcion, majority of the respondents are 17-18 years old, most of the respondents are grade 12 alcohol addict with 40%, generally 44 out of 50 respondents are male, and 43 out of 50 respondents are influenced by their friends, 52% of the respondents drink in their house or in the house of their friends.

**DISCUSSIONS**

The findings indicate that among the 50 respondents who randomly surveyed during the conduct of the study was studying in Concepcion National High School. It showed that majority of the respondents are 17-18 years old. The study showed that students are engaged in this kind of activity because of poor parental guidance. This study revealed that the students are influence by their friends and it is proven that male drinks more heavily than females because it is stated that 44 out of 50 respondents are male.

**KEYWORDS:** alcoholism, teenage alcoholism, alcohol addiction

**SUBMISSION ID: R012-KORONA-0003**

## **A Look at Pagpag in Bagong Pook, San Antonio Cavite City**

Delos Santos, Danielle O.  
(Adviser: Dr. Ruel S. Arcon)

### **Abstract**

#### **INTRODUCTION**

Over millions of people in the Philippines are poor, and food scavenging has sadly become a norm for many families to answer their food problems. The same is a common practice in Cavite City. For the satisfaction of hunger, many Filipinos have set aside the importance of nutrition and food safety, which could be detrimental to their overall health. They explained, “Nobody got sick or died with pagpag (food scraps).” Food scraps are discarded by the different restaurants or fast-food chains in urban communities in Bagoong Pook, San Antonio, Cavite City. The extreme poverty evident in the Philippines has pushed these communities to cope up with the problem through alternative means.

#### **METHODS**

We conducted a focused survey among the families at Bagong Pook, San Antonio, Cavite City, with fifty respondents from these families using a set of Likert type of questionnaire. Practicing was also conducted with collected estimated data through analysis of the use of innovation in families. A high population was also noted as a problem that’s why pagpag exists. The researcher aimed to find ways to help provide support for those family that needed jobs, income, or small business to help them get by every day.

#### **RESULTS**

Respondents who participated in our focus groups perceived substantial problems with the assessment innovation, which ranged from 1.) Reasons for the existence of pagpag in Bagong Pook. 2.) level of awareness about the effects of pagpag. 3.) The vision regarding food scarcity. The respondents generally agreed that the main reason for the existence of pag-pag is that nobody has gotten sick or died from it. The other reasons for the respondents are because of food scarcity or there is no available food for the family and pag-pag helps satisfy their hunger.

#### **DISCUSSIONS**

The result has demonstrated that the families are aware of the reasons why they are practicing pag- good and bad effect of eating pag-pag are preferred because it is a cheap meal.

**KEYWORDS:** Pagpag, Food waste

**SUBMISSION ID: R04A-CAVITC-0005**

## **A Narrative Analysis of the Ultimate Ice Cream Flavor of the Filipino Millennials**

Alyssa Marie Fernandez  
(Adviser: Merlin Remetio)

### **Abstract**

#### **INTRODUCTION**

Ice cream is a sweet frozen food that is typically eaten as a dessert. It is a palatable and nourishing food, which was once considered to be a sophisticated item and is now becoming more and more popular among all sections of the people. This tasty treat has always been a favorite, ever since its appearance on this earth over sixteen centuries.

Ice cream as we recognize it today has been in existence for at least 300 years, though its origins probably date much further back. Ice cream is one of the global markets because almost every country in the world had consumed and made ice cream in its own way. The worldwide production of ice cream is around 14.4 billion liters in 2001; people around the world like to sell ice cream because of the weather and advertising such as on the weekends. Ice cream is famous and available in many flavors, brands, and also packages.

#### **METHODS**

The qualitative Research design was used to conduct this study to have more accurate results. Using a narrative analysis approach, the researchers conducted personal interviews with the chosen participants. This study utilized a purposive sampling method for the selection of the respondents. Fifteen randomly selected students from different grade levels in Makiling Integrated School responded to a set of semi-structured questions.

#### **RESULTS**

The results of the study proved that ice cream is in demand even during the rainy season. The weather has no effect on the profit of the ice cream businesses. In addition, the study showed that the use of advertisement through media has a great impact on the profitability of businesses.

#### **DISCUSSIONS**

Many students from different grade levels who participated in the study were fans of ice cream. They found ice cream appealing to their taste buds. Most of the participants' preferred flavor of ice cream was chocolate, and they also preferred eating ice cream whenever they were sad and craving for it. The brand of ice cream was also being considered by the participants for it gave them certainty that the ice cream is worth buying and because of the commercials that they have watched. The study showed that regardless of the weather, ice cream is still in demand for the millennial participants.

**KEYWORDS:** Millennials, Ultimate Ice Cream Flavor

**SUBMISSION ID:** R04A-CALAMB-0076

## **Social Entrepreneurship: Enabling Change in the Society**

Sharon Mae E. Catolico

### **Abstract**

#### **INTRODUCTION**

The Philippines is a populous country with about 109.16 million people who are geographically dispersed in about 7,107 islands and a youthful country with about 34% of the population are under 14 years old where more than a quarter of the population lives below the poverty line. The country is also beset with a number of social problems and one peculiar among those is poverty. It is likewise noted that the social enterprise movement in the country, which address concerns on poverty, is growing and evolving fast. It is in this context that the researcher is interested to understand what social entrepreneurship is and how it changes the face of society, especially a poverty stricken one like the Philippines.

#### **METHODS**

The study utilized the descriptive research design. Social entrepreneurship was described. Archival research is specifically used type of descriptive research design since this method uses existing data or record in answering the research questions.

#### **RESULTS**

A social enterprise is a business without profit maximization purpose in which the objective is to overcome or alleviate a global or local issue such as poverty. As any other business, financial numbers and cash flow must be in line with what is expected and sustainable in the end. Profit stays in the company for expansion and improvement. These social entrepreneurial principles are set to start making changes in the society. The study suggests an emerging and optimistic social enterprise sector buoyed by a strong drive to address social issues.

#### **DISCUSSIONS**

Social entrepreneurship therefore is important for social and economic development of the country. It generates employment, economic development, and financial capital formation. It is a creative and innovative way that could enable change in a society - from an impoverished to a prosperous Philippines.

**KEYWORDS:** Social entrepreneurship, social enterprise, Philippines

**SUBMISSION ID: R012-SARANG-0192**

**Parent Involvement in Child's Homework: Basis for Classroom Parent  
Involvement Plan of Grade 5 - Fair**

Sharon Gallo

**Abstract**

**INTRODUCTION**

This action research determined to assess the involvement of parents in their child's homework. Many studies revealed that when parents become involved, academic achievement increases. This study, therefore, investigated ways by which schools succeed at getting parents involved and have a parent involvement plan.

**METHODS**

This research had studied Tagaytay Elementary School - Grade 5 parents on different ways to get them involved in their child's homework. The study aimed to identify the demographic information of parents, frequency of involvement in homework, the barriers, interventions and the willingness of the parents to be involved in the parent involvement plan of the classroom.

**RESULTS**

The result obtained from the study was used to design a plan that will further enhance the involvement of the parents in their child's homework. The study used a descriptive method of research, using a survey, with the questionnaire checklist as the main tool for the collection of data. The respondents were composed of 16 parents of Tagaytay Elementary School in Grade 5 - Fair.

**DISCUSSIONS**

Results of the study revealed that all parents were involved in the homework but not on a daily basis. The prevalent barriers in their involvement in homework were the language used especially in English and lack of information. It was also revealed that parents are sure to participate in parent involvement plan but are not willing to work as parent tutors and volunteers. Thus, a parent involvement plan is highly recommended to set effective parent involvement to increase learners' academic performance. The result of this study will be the basis for crafting the Parent Involvement Plan of the school.

**KEYWORDS:** Parent involvement, homework, classroom-parent involvement program

**SUBMISSION ID: R012-SARANG-0191/ R012-SARANG-0220**

## **Parental Acceptance and Behavior of High School Students Engaged in Teenage Pregnancy**

Ella Mae Soliva, Department of Education - Sarangani

### **Abstract**

#### **INTRODUCTION**

The main role of the parents is to monitor their child's behavior and to accept them through good times and bad times. This study aimed to determine the relationship between the parental acceptance and behavior of high school students engaged in teenage pregnancy.

#### **METHODS**

This study employed correlational research design. It is a purposive sampling which involved thirty (30) high school students in West Maasim women who were identified to be pregnant or have been pregnant during their teenage days enrolled in Aniceto C. Lopez Sr. National High School.

#### **RESULTS**

The result of the study showed that parents have a high level of acceptance which resulted to accept their child who had engaged in teenage pregnancy. This study revealed that there is no significant relationship between parental acceptance and behavior of high school students engaged in teenage pregnancy.

#### **DISCUSSIONS**

Based on the result of the study, it concluded that the relationship of parents towards their child does not affect their behavior. The result is aligned with the research of Khaleque and Rohner (2008) that accepted children are aware of the fact that they are loved. Physical and verbal behaviors which are used by the parents in expressing the love towards their children represents parental acceptance. For recommendation, the researcher recommended that the school should provide a program for youths that can give them knowledge about the effects of early pregnancy.

**KEYWORDS:** teenage pregnancy; parental acceptance

**SUBMISSION ID: R012-SARANG-0096**



**Parental Motivation, Teachers' Concern, and the Academic  
Performance of the Intermediate Pupils of Cabales - Enarbia Srs.  
Integrated School**

Aileen I. Valera

**Abstract**

**INTRODUCTION**

This study focused on the influence of parental motivation and teachers' concern on the academic performance of intermediate pupils of Cabales-Enarbia Srs. Integrated School.

**METHODS**

Specifically, the researcher used the descriptive-correlation approach as a research method to assess the extent of parental motivation and teachers' concern as evaluated by intermediate pupils and teachers and parents, respectively. The study also identified the academic performance of the respondents to determine the influence of parental motivation and teachers concern.

**RESULTS**

The results have shown that parents often motivated their children. The teachers also showed concern in developing personal growth and were often concerned with developing study habits and good values in pupils.

**DISCUSSIONS**

Moreover, the overall academic performance of the intermediate pupils was described as Approaching Proficiency. Furthermore, correlation results showed that the academic performance of pupils was significantly influenced by parental motivation. Similarly, academic performance of pupils was significantly influenced by their teachers concern.

**KEYWORDS:** Parental motivation, teacher's concern, Cabales-Enarbia Srs. Integrated School

**SUBMISSION ID: R012-SARANG-0062**

**Parental Rearing Behavior: Its Relationship to Life Satisfaction and Interpersonal Problems of Grade Six Parents in South Cotabato, Koronadal City, Sultan Kudarat, Sarangani, and General Santos City**

Remegio C. Silvano, Ed.D

**Abstract**

**INTRODUCTION**

This study used the descriptive-correlational method of research. Downie and Heath (1995) stated that this measure is an indicator or measure of association between a variable with varying levels of measurement.

**METHODS**

It is for this purpose that the method is to be used since the focal point of this research, which deals with the (1) one Independent Variable and (2) Dependent Variable; to measure degrees of relationship between the independent variables namely parental rearing behavior, its relationship to life satisfaction and the interpersonal problems of grade six parents in SOCCSKSARGEN. The questionnaire was presented first to the adviser for comments and suggestions for improvement and refinement of the instrument. After the checking and the approval of the adviser, groups of experts/members of the panel were asked to validate the instruments. The comments and suggestions of the experts were incorporated to the revised questionnaire. Furthermore, the results were consolidated numerically and qualitatively. In the rating, the indicator were the basis with the numerical value from 1 . 0 0 - 5 . 0 0 with descriptive ratings. Three sets of the questionnaire were utilized for this study. The first set of the questionnaire used was the Parental Rearing Behavior with six indicators: obedience training; responsibility training; nurturance training; achievement training; self-reliance training; and general independence training. In evaluating the parental rearing behavior, the researcher used the following scales. The statistical tools employed were the mean, person product-moment correlation coefficient, and linear regression.

**RESULTS**

The result reveals that the level of parental rearing behavior of grade six parents in SOCCSKSARGEN is often. Nevertheless, the respondents exhibit an always level on life satisfaction of grade six parents and sometimes level of interpersonal problem of grade six parents. Furthermore, there is a significant relationship between the parental rearing behavior and life satisfaction of grade six parents in SOCCSKSARGEN. Besides, there is a significant relationship between the parental rearing behavior and the interpersonal problem of grade six parents in SOCCSKSARGEN. Finally, the learning style preferences of the intermediate pupils differ significantly.

**DISCUSSIONS**

Therefore, the pupils have different ways of doing things to learn and to accomplish learning tasks.

**KEYWORDS:** Parental rearing behavior, life satisfaction, SOCCSKSARGEN

**SUBMISSION ID: R012-SARANG-0176**

## **Parenting Activities and Social Skills of Kindergarten Children**

Leah R. Ibay

### **Abstract**

#### **INTRODUCTION**

Parents play an important role in designing educational opportunities and engaging fully with their children to develop early social skills. Parents must consider the importance of providing conducive learning environment by means of conducting stimulating activities that would help the child become a person with confidence. This study aimed to relate parenting activities and social skills of kindergarten children.

#### **METHODS**

This study employed correlational research design. The respondents of this study were the twenty-nine (29) accessible parents of the kindergarten children officially enrolled in Shalom Crest Wizard Academy. Following the survey method, modified questionnaire was used to gauge the parenting activities, while secondary data were used to determine the social skills of the pupils. Frequency count, weighted mean and Pearson Product Moment Correlation Coefficient were used to described and treat the data gathered.

#### **RESULTS**

The result showed that the parents often do hands-on activities with their children and they play sports and games with them. Meanwhile, the kindergarten children often exhibit social skills. The correlation analysis revealed that there is no significant relationship between the parenting activities and social skills of kindergarten children. This study concluded that the parenting activities do not influence the social skills of the kindergarten children. The results correlates with the study of Diamond et al. (2000) that the frequency of home learning activities parents reports their children were engaged in previous week. Parents reported providing their children with reading and watching educational television several times a week as learning opportunities. However, the home learning activities reported were unrelated to parents' concerns regarding their child's kindergarten readiness. This study is parallel with the study of Moore (2008), that the home learning activities conducted were unrelated to the social skills of the kindergarten children.

#### **DISCUSSIONS**

Based on the findings of the study the parents should attend social gathering provided by the school like family day. The administrator of the school may have some community activities like engaging a child to a wholesome and fun activity for example educational trip, going to the park and attending parties that can help the children enhance their social skills. Hence, this study recommended that the parents should attend social gatherings provided by the school.

**KEYWORDS:** Parenting, kindergarten, social skills, social gathering

**SUBMISSION ID: R012-SARANG-0143**

**Level of Awareness of Beneficiaries on the Pantawid Pamilya Pilipino Program (4P's) and Its Implication to Their Academic Performance in West Malungon District**

Maricel J. Magbanua, Department of Education Sarangani

**Abstract**

**INTRODUCTION**

The second Millennium Development Goals (MDGs) of the Philippines is to eradicate extreme poverty and hunger by achieving universal primary education through the Pantawid Pamilyang Pilipino Program (4Ps). The program includes granting conditional cash grants to the poorest of the poor, to improve the health, nutrition, and the education of children aged 0-18 years old. In this study, the researcher evaluated the implication of the 4P's to the academic performance of the beneficiaries.

**METHODS**

The study used descriptive evaluative research design in public secondary schools of West Malungon District, Malungon Sarangani Province. The study also used weighted mean in finding the level of awareness, T-test at 0.05 level of significance on independent samples in finding significant differences before and during the implementation of 4Ps, and Pearson r at 0.05 level of significance in solving for the correlation on the level of awareness of 4Ps beneficiaries and academic performance.

**RESULTS**

Cash grants of 4P's are always used for leisure, pay debts and to enroll in school, provide for daily needs and buying clothes. It is withdrawn through ATM on time by traveling to nearest ATM machines and find the grant enough for their needs. Before and after the implementation, the learner beneficiaries has a mean academic performance of fair and there is a very slight increase in the academic performance which is found to be insignificant. Only the fulfillment on the implementation of the program significantly affects the academic performance of the learner beneficiaries.

**DISCUSSIONS**

To some, the cash grant may not be enough to provide for all of the basic needs, but it is the only seen fixed regular amount to augment financial difficulties. In this study, with the evaluation of the results and findings of the study, although the 4P's had helped the financial needs of the learner beneficiaries, it is not a determining factor that greatly improved the performance of the learners. Still, other factors like family, school and the community, shall be accounted to help the beneficiaries improve their performance in school.

**KEYWORDS:** 4Ps, 4Ps beneficiaries;

**SUBMISSION ID: R012-SARANG-0151**

## **Facebook and Its Effect on Self-Esteem**

Jan Paul Dela Cruz

### **Abstract**

#### **INTRODUCTION**

Facebook is said to be the most popular social website where one can share and upload pictures, videos, message, chat, and many other features. In addition, Facebook is defined as a place where you create a public or semi-public profile within a system with the privacy of your choice. Profiles are unique pages where one can "type oneself into being." It's also of beneficial to communication because through it, one can connect with others through technology.

Self-esteem is used to describe a person's overall sense of self-worth or personal value. Self-esteem is often seen as a personality trait, which means that it can be stable and enduring.

#### **METHODS**

A descriptive-correlational type of research method will be used in this study because the researchers would like to know whether Facebook is related to the Self-Esteem of Individuals. The researchers would also like to know how Facebook can be positively or negatively correlated to the self-esteem of individuals. A pencil or ball pen and paper survey questionnaire method will be used by the researchers for determining the effect of Facebook and its self-esteem to the students. The research instrument that will be used in the study will be Rosenberg self-esteem scale in order to measure the self-esteem of the respondents. It is a questionnaire that is Likert type of scale which contains ten items that deal with general feelings of people.

#### **RESULTS**

The results show that the duration of each following Facebook activity chatting and browsing is the most often Facebook activity of the 28 respondents. Updating status, uploading pictures and giving comments are the Facebook activities that the respondents are doing sometimes. And playing games are Facebook activity seldom done by the respondents. The level of self-esteem of the students based on the result is interpreted normally because according to the scoring of the questionnaire, scores between 15 and 25 are within the normal range. Normal self-esteem is more likely to have honest, open and appropriate communications with others because they believe their thoughts have value and are not afraid of clarity. Based on the Pearson Correlation coefficient, a low correlation was found, the obtained result was .305 at 0.05 levels which means that there is a low-level significance relationship between Facebook use and level of self-esteem.

#### **DISCUSSIONS**

After the data have been presented, analyzed and interpreted. The conclusion is formed that chatting and browsing is the most often Facebook activity and playing games is the most seldom done by the students. All of the respondents have normal range level of self-esteem and the researchers concluded that there is a low-level significance in the relationship between of Facebook use with its effect on the level of self-esteem.

**KEYWORDS:** Facebook, Self-esteem,

**SUBMISSION ID: R012-SARANG-0125**

## **Experiences and Aspirations of Students on the Effects of Online Gaming to Physical & Mental Health: Basis for Students' Wellness Development Program**

Haren Joash B. Martinez, Alabel Science Regional High School

### **Abstract**

#### **INTRODUCTION**

One of the technological developments affecting education in the last several decades is the video game. It has been shown that playing pro-social games led to more "helping" behavior, but also that playing a violent game led to more "harming" behavior. In the case of Malungon National High School, a survey showed that 68% of the students in the Special Science Curriculum were engaged in video games. In this study, the researcher described the experiences and aspirations of high school students on video gaming and how it affects them physically and mentally. The following research questions were formulated

1. How many hours do students spend each day playing online gaming?
2. What are the effects of online gaming to students' physical health?

#### **METHODS**

Research Design. The researcher used quantitative and qualitative methods. Data Gathering Procedure. The student researcher administered a survey questionnaire to the identified high school students of Malungon National High School who were officially enrolled in the school year 2016-2017. The interview was also conducted to twenty randomly selected samples. Sampling Method. This study employed purposive sampling where 27 students from Special Science Class were used in the study. Twenty-five students from each grade level were considered as respondents of the study. Data Analysis. To determine the effects of online gaming to the physical and mental health status of the students, mean, frequency count and percentage were used. To describe the experiences and aspirations of the students, a semi-structured interview was employed.

#### **RESULTS**

The result implies that the respondents spend time on online gaming for at least one hour per day. This supports the explanation of Anderson & Dill (2000) playing violent games increases accessibility to a subset of cognitions specifically related to violence and aggression, which later can be transferred to real-world aggressive behaviors. With regard to the long term effects of violent games on aggressive cognition, it has been proposed that continuous exposure to violent games makes aggressive thoughts more chronically accessible to players (Bushman, 1998).

The data gathered also implies that online gaming has adverse effects on the physical health of the students showing 63% suffering hand and wrist pains; 27% irregular eating habits; and 10% poor hygiene. This suggests that parents and school must do something to help students improve their physical wellness. Online gaming also affects the mental health of students showing sleeplessness at 74%, absentmindedness at 21% and irritability at 5%.

#### **DISCUSSIONS**

The study reveals that students of the Special Science Class of Malungon National High School are in the early stage of online gaming obsession. Both quantitative and qualitative data imply that these students need attention and support. Thus, this study suggests that the school must craft a students' wellness development program that would engage both parents and students.

**SUBMISSION ID: R012-SARANG-0202**

## **Contributing Factor Of Youth To Sukarap Gang Involvement In Malungon Sarangani Province**

John Ken S. Bito-onon & Live C. Angga, Malungon NHS

### **Abstract**

#### **INTRODUCTION**

The main issue to be addressed in this research was to determine the factors on the Malungon Youth to Gang membership called SUKARAP. Sukarap stands for suyop/sugal (sipping illegal drugs/gambling), kawat (theft), and rape. Republic Act 9165 of the Philippines/ anti-drug campaign of the government and Republic Act 9287 for anti-illegal gambling activities were strengthened by President Rodrigo R. Duterte, had been the battle cry also of Malungon. The Municipality is a zone of peace instead, but brawls are currently from five (5) identified groups of Sukarap, namely; TPM, GPY, RMC, BCL & RMR Sukarap group. There was no study yet conducted about Sukarap in Malungon and in this way parents and community will be aware of what and how did this Sukarap works and recruits. The researchers were interested to investigate the profile of the subjects. Purposive sampling was used utilizing the mixed method research design. The quantitative research design was used to identify the demographic profile of the forty (40) subjects. Two (2) humanities and social science teachers validated the interview guide. The researchers conducted two ways to gather data. One member from each group was invited to gather the data on the demographic profile using the survey questionnaire. Secondly, these five data gatherers were interviewed to identify the factors on the involvement of the youth to join the Sukarap group. The rigor of the research was followed accordingly. The first person that convinces them to join the group was their friends as rank 1 followed by rank 2 which was through the members of the Sukarap group. The purpose of joining the group was because they were excited to explore, be happy and meet more friends. When a youth was in a Sukarap group, eighty-three percent (83%) of them said they enjoy in their group and seven percent (6.6%) said they meet their true friends. They get vices primarily smoking (66%) from the group followed by drinking hard liquors (33%). The main reason for joining the group was because of the financial problem and the family problem followed by gender inequality (6.6%). In terms of age, sixteen to nineteen years old are the majority (90.00 %) members of the Sukarap group with the youngest 14 years old. There were no members in the Sukarap group living above the poverty line or work. The ratio of student to out of school youth was 7:3 and the ratio of male to female members was 9:1

From the findings, Sukarap group members in Malungon were not into sipping illegal drugs. Parents are encouraged to give enjoyment to their child.

**SUBMISSION ID: R012-SARANG-0207**

## **Clash of Bloods: Sentiments of Parents and Teenagers Having Conflict with Each Other**

Shaira Mae D. Sarania, Banate NHS

### **Abstract**

#### **INTRODUCTION**

Parent-teenager conflict is common because it is part of both party's development. The parents were bewildered and at the same time hurt by their children's manners. However, parent-teenager conflict is additionally associated with bitterness and depression which conjure up the special feature in a parent-teenager conflict which are the contingent factors. In this study, the conflicts between parents and teenagers, how the conflicts occur, coping up the conflicts in the family and their realization after fighting each other were explored.

#### **METHODS**

The main method of this qualitative research was the qualitative phenomenological tradition to describe the lived experiences of the participants. The informants of this study were teenagers with age ranging from 13-18 years old and parents who had a conflict with their children from Brgy. Banate, Malungon, Sarangani Province and Brgy. Osmeña, Sulop, Davao del Sur.

#### **RESULTS**

Findings revealed that the majority of the parent participants shared that doing household chores, money matters, and strolling was the most common reason for conflict with their children. On the other hand, the sentiments of parents-teenagers having conflict include distress and anger because of unmet expectations from both sides. To resolve this conflict, communication was found to be the best solution. This included parent giving pieces of advice to their children and adherence of children to parents' commands and request. Lastly, parents realized that this conflict leads to impair relationships with their children while the teenagers understood that acceptance is the key to resolve conflicts with their parents.

#### **DISCUSSIONS**

The biggest source of conflict between teenagers and parents were doing household chores like cleaning the house. Teenagers do not want to be nagged because they think they know already what to do. This daily issue will soon bring fights and later cold wars between parents and teenagers. The participants of this study showed distress and anger. If parents and teenagers frequently have conflict, this eventually led to emotional turmoil in the family. In resolving conflicts between parents and teenagers, it should be done immediately by means of open communication. Disobedience to parents was bad but heeding to their advice and reminders were good. However, parents were still suffering because of their rude and disrespectful children. Even if the problem was resolved, still, it is not a guarantee that the teenagers will not go back to their rude personality and behaviors. Teenagers were also hurt and at the same time annoyed because of their parents nagging at them. To address this conflict, they must learn how to respect and obey their parents to avoid more conflicts. Thus, the results of this study pave opportunities to other people especially to the government specifically the DSWD, the parents and their children.

**KEYWORDS:** Parent, teenager, conflict, development, bitterness and depression, family

**SUBMISSION ID: R012-SARANG-0205**



## **Child-Rearing Practices of B'laan Families and the Scholastic performance of Their Grade One Children**

Rosalie Gonzaga, Department of Education - Sarangani

### **Abstract**

#### **INTRODUCTION**

The importance of knowing the child-rearing practices of indigenous families in a particular community which affect the scholastic performance of their children cannot be under-estimated. In rural areas, the majority of the population is comprised of indigenous families who intend to bring their children to school. No matter how insignificant, their practices contribute to the scholastic performance of their children should be recognized.

In this connection, the present study on the child-rearing practices of B'laan families is conducted to find out whether it could affect the scholastic performance of the children.

The result of the study could help teachers in understanding the behavior of their pupils. It could serve as a basis in finding good motivational techniques which could help these children enjoy their education life in school. To the parents, let them understand that there is no standard method that can be applied to rear children. Each method is individualized, depending upon the nature of the child. What is important is they tried their best the way they could to help their children grow the kind of individual they want them to become individuals who morally, emotionally, socially and intellectually competent pupils.

#### **METHODS**

The methods used in the study is descriptive-research which is correlations survey. There were two instruments used to gather the data of the study. The first instrument was a questionnaire used to determine child-rearing practices of the B'laan parents and Form 137 for the scholastic performance of their children. After necessary documents on asking permission to conduct the study was acquired and the following procedures were done by the researcher: The school where the study will be conducted was identified. A survey of the B'laan families was conducted The population was identified and sampling technique was employed to get the final sample of the study. Preparation, validation and reliability testing of the instrument. The instrument was prepared in its final for and distributed to the final samples of the study. The data gathered, tabulated and presented. Presentation analysis and interpretation of the data gathered using appropriate statistical tools. The final draft of the research work was prepared for editing and correction. Enough copies were produced to be distributed to the panel of examiners.

#### **RESULTS**

The data gathered were treated by appropriate statistical tools according to the sub-problems raised. The following are the findings formulated. Among the four aspects of rearing practices considered, it came out that it was on the moral aspect where the parents got the highest obtained mean, followed by the cognitive aspect, then by the social aspect, and lastly, the emotional aspect. These three (3) aspects had a descriptive rating of sometimes. Generally, it was found that all obtained "F" value with respect to age and educational level were found to be greater than the required value of significance thus rejecting the null hypothesis formulated. In terms of the level of scholastic performance of their Grade, 1 child 54 obtained satisfactory and above grades while 166 obtained below satisfactory performance. On the association between child-rearing practices of parents and their children's scholastic performance, it was found that the chi-square value obtained of 10.87 exceeded 7.82, hence, the null hypothesis is rejected.

#### **DISCUSSIONS**

The most common children-rearing practices the B'laan families used in growing their children is more on the moral aspect.

**SUBMISSION ID: R012-SARANG-0185**

## **Administrators' Leadership Behavior and Performance and the Organizational Climate of Public Secondary Schools**

Terelene N. Eguac

### **Abstract**

#### **INTRODUCTION**

School administrators play a significant role in running the organization where they belong. The school principal or school head should have a clear and comprehensive view of the goals towards which the organization should be moving to attain its goals. To fulfill these goals, the administrator's behavior and leadership styles used will always reflect the kind of organization where they reside. As part of the implementation of the Department of Education's guidelines on the assignment of administrators, principals or school heads, a regular reshuffling of administrators to the different schools were implemented in the division of Sarangani. As anticipated, once a school is delegated with a new administrator, it is expected that some of the existing policies and programs are changed, which in turn affect the nature of the organization's climate. The teachers in the school will have different perceptions and expectations as to how their new administrator will direct them. As the roles change for the administrators, a new set of skills will have to be incorporated into each role. Additionally, decision-making powers may shift, the check and balance system may move in different directions. Thus, this urged the researcher to conduct a study on how the new administrator's leadership behavior and performance influence the organizational climate of all secondary schools in the municipality of Maitum, Sarangani Province.

#### **METHODS**

This descriptive-correlation study was conducted to find out whether the administrator's leadership behavior and performance significantly influenced their respective schools' organizational climate in public secondary schools in Maitum, Sarangani. The entire population was used for the administrators-respondents, and a Slovin's formula was used to get the desired sample size of the teachers-respondents. Questionnaires were also used to gather the data, and frequency counts and percentages were employed to treat the data gathered.

#### **RESULTS**

It was found that the majority of the administrators have positive leadership behavior. Most of the school administrators have outstanding administrative performance. The school administrators varied in their organizational climate but most of them have a healthy nature.

#### **DISCUSSIONS**

It was concluded that the administrators' leadership behavior and administrators' performance significantly influenced their organizational climate.

**KEYWORDS:** Leadership Behavior, Administrators' Performance, Organizational Climate

**SUBMISSION ID: R012-SARANG-0197**

## **Anti-Language of Computer Enthusiasts**

Regine Phoelea Mae F. Del Carmen, Department of Education - Sarangani

### **Abstract**

#### **INTRODUCTION**

Sociolinguistics deals with how language and society are intertwined: how language reflects society and how society makes or forms their language express their background. Likewise, sociolinguistics deals with the variations and patterns of languages within a society. Specifically, it focuses on the way people use language to express social class, group status, gender, or ethnicity, and it looks at how they make choices about the form of language they use (Longyear, 2008). Among the subcultures is the community of computer enthusiasts. They are those computer programmers, system analyst, web designer, students who take up computer courses and even plain computer addicts. This community belongs to a culture which is emerging in this generation. The culture is known as cyberculture which means the culture that has emerged or is emerging, from the use of computer networks for communication, entertainment, and business. The study of anti-languages offers further insights into the relationship between language and social structure, and into the way in which text functions in the realization of social contexts (Halliday, 1976). The researcher's purposes of the study are to understand what lies within this subculture: the creativity of the computer enthusiasts' group in forming new words and the language dynamism; to identify the used word formation processes, and to determine the level of exposure of each age bracket to the internet.

#### **METHODS**

The research design of the study followed the descriptive-survey method of research. It identified and described the anti-language used by the computer enthusiasts residing from General Santos City, Philippines. The anti-language was classified according to word-formation processes employed and determined the level of exposure of the subjects to the internet in terms of age according to adolescents (10-14 y/o), youth (15-19 y/o) and adults (20 and above). The research instruments used in the study were interview schedules, two checklists, and a guided interview. Interview schedules included the background of the subjects where personal data such as will be asked. There were two checklists, Netspeak, and Techspeak Checklists. The 100 words in each of the two checklists were gathered from 10 websites of computer slangs and jargons and were used for eliciting the anti-language from the subjects and for comparative purposes. After the data was gathered, the researcher proceeded to answer the following problems. First, the researcher listed the gathered data. Then, the researcher identified the anti-language of the subjects and was classified according to Techspeak and Netspeak. To answer the second problem, the researcher underwent analysis to describe the word-formation processes employed in their anti-language. For evaluating the level of exposure to the internet in terms of age according to adolescence, youth and adult, a statistical presentation was being done.

#### **RESULTS**

Based on the findings the following conclusions were drawn: (1) the computer enthusiasts in General Santos City used Netspeak and Techspeak via word formation processes; (2) among the word formation processes, re-lexicalization and homophonic literation are the most frequently used by youth; and, (3) the youth has the highest level of exposure among the group of respondents.

#### **DISCUSSIONS**

**KEYWORDS:** Anti-language, sociolinguistics, computer enthusiasts, General Santos City

**SUBMISSION ID: R012-SARANG-0219**

**Application of Eclectic Counseling Procedures: Basis for Writing a  
Manual for Guidance Counselors and Designated Guidance  
Coordinators**

Viar, Abigail O., Gov. Felicisimo T. Sanluis Integrated Senior High School

**Abstract**

**INTRODUCTION**

The researcher's burning desire is to know the level of effectiveness of the administration of eclectic counseling in solving students' problems. Furthermore, counseling is a universal service of student's personal work having a wide range of activities and includes faculty advising, counseling in psychological clinics, mental hygiene and other specialized types of counseling. It is a variety of strategies that support the students to grow up normally and maturely through proper guidance. The focus of counseling is for the progression of an individual. The responsibility of planning and carrying out the treatment of counseling rests with the counselor, leaving the development of insight and final decision to the counselee. The researcher believes that a good counselor alternates between directive and non-directive counseling, depending upon the sex, age, environment experiences of the counselee, and the kind of problem confronting the counselee, provided that it is done tactfully and in a non-threatening manner.

**METHODS**

The descriptive method of research used to collect and gather necessary information, data, and to help in portraying the probable relevance as it exists during the time of the study because this method can be either quantitative or qualitative. It can involve the collection of quantitative information that can be tabulated along a continuum in numerical form. Descriptive research involves the gathering of data that describe events and then organizes, tabulates, depicts and describes the data collection.

**RESULTS**

On the basis of the foregoing findings and conclusions of the study, the following recommendations are offered. Eclecticism assumes that the diversity among individuals, the diversity in human needs and concerns, and the environments in which they occur can be responded best when the counselor has options and the flexibility to use these within a conceptual and organized framework.

**DISCUSSIONS**

A counselor can use several strategies or techniques in solving students' problems by there are different sources to rely on, making a method for defining treatment plans and open himself/herself in the diversity of technical procedures to find out the suitable way to solve the students' problem. Counselor and the counselee can have a helping relationship by sharing the ingredients of trust, empathy, genuineness, concern and caring, respect, tolerance and acceptance, honesty, commitment to the relationship, and dependability, so that the counselee felt more comfortable verbalizing his/her own concerns or problems, feelings. The counselor must give the counselee the freedom to speak at his/her convenient time. The counselee should not be judged and condemned based on the situation that happens to his/her life, instead he/she must be given sympathy, understanding, and good reflections and interpretation on the importance of intervention. Using eclectic counseling, the counselor can be flexible in conceptualizing and in organizing frameworks for the betterment of the students' welfare.

**KEYWORDS:** Eclectic Counselling, Guidance

**SUBMISSION ID: R04A-LAGUNA-0463**

**"Neneng.... Nenen... Buntis Ka? a Look at Teenage Pregnancy in  
CNHS - SHS SY 2018-2019**

Aquino, Derhiz May M  
(Adviser: Dr. Ruel S. Arcon)

**Abstract**

**INTRODUCTION**

The study was conducted due to the actuality of students getting pregnant at an early age. Teenage pregnancy, also known as adolescent pregnancy, is pregnancy under the age of 20. A female can become pregnant from sexual intercourse after she has begun to ovulate, which can be before her first menstrual period but usually occurs after the onset of her periods. In well-nourished females, menarche usually takes place around the age of 12-13. (UNICEF). One in ten young Filipino women ages 15-19 has begun childbearing and 8% are pregnant with their first child according to the results of the 2013 National Demographic and Health Survey.

**METHODS**

Using a survey questionnaire, the researchers conducted focus groups with TVL/HE/COOKERY. Thirty-seven respondents answered a set of Likert type questionnaire. Inventory was also conducted with data collected through a quantitative analysis of the use of the innovation in the individual track.

**RESULTS**

Many respondents who participated in our focus groups perceived problems with the assessment innovation in the areas of: (1) Effects of teenage pregnancy in their academic performance; (2) Effects of teenage pregnancy in family relationships; (3) Effects of teenage pregnancy in terms of financially supporting the child; and (4) what would most likely happen to the teenage mother after her pregnancy. The TVL/HE/ COOKERY respondents strongly agree that they should continue with their studies and they disagreed to totally stop studying.

**DISCUSSIONS**

The result demonstrates that the G12 TVL/HE/COOKERY has a higher knowledge of the effects of teenage pregnancy in their academic performance and their family relationship. The study also described the level of understanding of G12 TVL/HE/COOKERY respondents on financial support the child and what will most likely happen to the teenage mother after her pregnancy.

**KEYWORDS:** Teenage pregnancy, education effects

**SUBMISSION ID: R04A-CAVITC-0006**

## **Lived Experiences of Deaf Teachers**

Marvin Vicente, Department of Education Cabuyao City

### **Abstract**

#### **INTRODUCTION**

The acquisition of employment is described as life-changing for deaf people. To date, there are few and limited employment opportunities available for them. This phenomenological study focuses on exploring the lived experiences of deaf teachers. It is crucial that we gain a better understanding of the experience of deaf teachers to generate a new area of focus on deaf people in the field of employment.

#### **METHODS**

To gain insight into the nature of the occupational experiences of deaf teachers, a focus group interview was conducted to 3 deaf teachers. Participants were gathered through snowballing technique, wherein the chosen participant of the researcher recruited other participants who would participate in the study. Rich and pure subjective data were analyzed via phenomenology.

#### **RESULTS**

The analysis of the data led to the emergence of six essential themes, identified as: (1) being in control; (2) equality and inclusion in the workplace; (3) feeling of belongingness and relatedness; (4) support provider; (5) job satisfaction and motivation; and (6) difficulty and challenges. Findings of the study suggest that deaf teachers' positive working environment and experience can be influenced by professional identity, personal attribution, accommodation, and inclusive practices, relatedness to significant others, support and network, job satisfaction and motivation, and ability to adapt to difficulties and challenges.

#### **DISCUSSIONS**

Based on the consolidated findings, the researcher offers these recommendations: (a) upgraded education and skills training; (b) equitable accommodation and inclusion; (c) expansion of support group and network; (d) break the negative perceptions about deaf people; (e) expanded access to flexible working opportunities; and (f) comprehensive implementation of government's policies and mandates aiming for the development of sustenance and enhanced occupational opportunities for deaf teachers. The researcher also encourages the replication of this study and exploration of additional queries to explore the lived experiences of deaf teachers.

**KEYWORDS:** Social Science, deaf teachers, phenomenological approach, Philippines

**SUBMISSION ID: R04A-CABUYA-0012**

**A Study on Discrimination among Lgbtq Youth of Senior High School  
Students at Ettmnhs S.Y 2018-2019**

Krista-Lyn Reyes, Rica Malasmas, & Lucita Ecot, Department of  
Education/ETTMNHS

**Abstract**

**INTRODUCTION**

Schools should be a safe place for everyone but in the Philippines, students who are lesbian, gay, bisexual, transgender and Queer (LGBTQ) have experienced discrimination (Human Rights Watch, 2017) and these abuses can cause deep and lasting harm (Human Rights Watch, 2017). Schools nationwide are hostile environments for a distressing number of LGBTQ students. The overwhelming majority of whom routinely hear anti-LGBTQ language and experience victimization and discrimination at school. Discrimination against LGBTQ individuals remains widespread in our country and in different countries, this leads the researchers to conduct research on this issue. In this study, the researchers explored the discrimination among LGBTQ youth senior high school students at Emiliano Tria Tirona Memorial National High School. As of now, there is no study about the discrimination of LGBTQ in the Emiliano Tria Tirona Memorial National High School community.

**METHODS**

In order to study the discrimination of LGBTQ, this descriptive research made use of the adopted instrument from Dau, D., and Strauss, P. (2016) entitled, "The Experience of Lesbian, Gay, Bisexual, and Trans Students at the University of Western Australia". The respondents are 15 senior high school students, they were identified via stratified sampling.

**RESULTS**

Result of the discrimination among LGBTQ youth survey shows that discrimination can affect LGBTQ youth. On the other hand, the remarks of the discrimination on the LGBTQ youth revealed that most of the LGBTQ students who are discriminated felt nervous, alone, unwanted and restless. The overall results of survey data show that most of the students who have been discriminated felt its effect on their personhood and their emotional welfare.

**DISCUSSIONS**

The researchers know that majority of the respondents were negatively affected because of discrimination. This negative effect on the LGBTQ youth also expands on being excluded in school clubs at Emiliano Tria Tirona Memorial National High School. The respondents were also unfairly treated by the faculty staff, felt unwelcome in an academic subject, and most of the respondents felt that they are nervous, alone, unwanted and restless every time they experience discrimination. Majority of the respondents also experienced other forms of discrimination such as being treated unfairly by their classmate, verbally threatened, physically attacked, excluded in family, and this affected their ability to socialize because of the discrimination on their sexual orientation and gender identity expression.

**KEYWORDS:** gender and development, LGBTQ, discrimination, social science

**SUBMISSION ID: R04A-CAVTP-1174**

**Academic Stress and its Relation to the Academic Performance in  
General Physics 1 of Grade 12 Stem Students of Cabuyao Integrated  
National High School**

Shane Rei Sasuya, Cabuyao Integrated National High School

**Abstract**

**INTRODUCTION**

Academic stress arises when there is a perception of overwhelming pressure on the students, which interferes with their academic success. Stress afflicts students' physical health, emotional welfare, and academic performance. Students develop a nonchalant attitude towards their studies because of stress. Furthermore, it was noticed that stress may persist into the tertiary years and this may contribute to academic disengagement and mental health issues among developing adults.

The goal of the study is to understand the relationship between academic stress and academic performance in General Physics 1 among Grade 12 STEM students of Cabuyao Integrated National High School by identifying the level of academic stress in terms of sociocultural, environmental, psychological attributes.

**METHODS**

This study utilized a quantitative research design. A questionnaire consisting of 30 items was distributed among 32 Grade 12 STEM students of Cabuyao Integrated National High School who were chosen through purposive sampling technique. Data were analyzed using the weighted mean formula to determine the level of academic stress in terms of sociocultural, environmental, psychological attributes, and its relation to the academic performance in General Physics 1. The relationship between the two variables was identified with the use of the Pearson  $r$  correlation.

**RESULTS**

The researcher discovered that the respondents very often suffer from a high level of stress. The data gathered revealed that there is a positive and weak correlation between the level of academic stress and academic performance in General Physics 1. However, there is no significant relationship between the level of academic stress and academic performance in General Physics 1.

**DISCUSSIONS**

The high level of stress may not directly affect students' academic performance, yet the possibility of academic disengagement and mental health issues emerging among prospective professionals remain. Developing complacency will affect the quality of their performance during their subsequent years as professionals. Hence, the researcher recommends that students should adopt good stress-coping skills by exposing and encouraging themselves to stress management skills to enhance their academic performance. Training in stress management and study techniques should be included in the curriculum of senior high schools. Students should be given time for recreational activities in school so that students could relieve stress.

**KEYWORDS:** academic stress, physics, academic performance

**SUBMISSION ID: R04A-CABUYA-0045**



**An Assessment on the Level of Compliance of Aplaya National High School in Ra 10121 (Philippine Disaster Risk Reduction and Management Act of 2010)**

Diana Marie Moreno, Researcher, RMDC  
(Adviser: Noel Natividad)

**Abstract**

**INTRODUCTION**

This research study is mainly focused on the assessment on the level of Aplaya National High School in abiding with R.A. 10121. Specifically, this study sought to answer the following questions: (1) What is the level of compliance of service of the DRRM at Aplaya National High School as assessed by the school coordinators and students in terms of the early warning system, fire protection and health and welfare services? (2) What is the level of compliance of the DRRM at Aplaya National High School in R.A. 10121 as assessed by the staffs, school coordinators and students in terms of Readiness and Preparedness? (3) Is there a significant effect on the level of compliance to the level of performance of Aplaya National High School in Republic Act No.10121?

**METHODS**

This study utilized the descriptive methods using survey questionnaires checklist. Quantitative methods in this descriptive research are utilized to establish associations between variables.

**RESULTS**

On the level of compliance of service of the DRRM at Aplaya National High School as assessed by the school coordinators and students in terms of early warning system (w.m. 3.51), fire protection (w.m. 3.34) and health and welfare services (w.m. 3.60) received a descriptive interpretation of Very High. On the level of performance of the DRRM at Aplaya National High School as assessed by the school coordinators and students in terms of Readiness (w.m. 3.52) and Preparedness (w.m. 3.59) got the same descriptive interpretation of Highly Evident. The computed R-value of 0.69 with the descriptive interpretation of Very High Positive Correlation states that there are significant relationships between level of compliance to the performance level of Aplaya National High School in the implementation of RA 10121.

**DISCUSSIONS**

The level of compliance of the DRRM at Aplaya National High School was Very High in terms of the early warning system, fire protection, and health and welfare services. On the level of performance of the DRRM at Aplaya National High School was noted to be Highly Evident in terms of readiness and preparedness. A significant relationship was noted on the level of compliance and level of performance of Aplaya National High School in the implementation of RA 10121. Findings of the study recommend to enhance and maintain school DRRM operations. It is also recommended to give due consideration of other basic disaster programs and safety tips for students to have advance knowledge before, during, and after the disaster strikes.

**KEYWORDS:** RA 10121, performance, compliance, disaster risk reduction, management

**SUBMISSION ID:** R04A-STAROS-0030

## **Application of 5S in Cavite National Science High School Physics Laboratory**

Rafael Palaño & Dave Balala

### **Abstract**

#### **INTRODUCTION**

Students of Cavite National Science High School conduct their experiments at the science laboratories like the Physics laboratory, but not all of them show and maintain cleanliness in that area. Some of the materials that were used were not returned to the assigned storage space. As a result, various laboratory equipment would not be easy to find and the productivity of the student's work would be affected. Another problem is the placing of the equipment in the stock room. Some of the items were not in the proper place and several items would be stuck for a long time which unnecessarily occupied more space.

#### **METHODS**

Audit Forms were used before the application of 5S. Then the 5S method or the Seiri, Seiton, Seiso, Seiketsu, and Shitsuke were used. First was the sorting of the equipment, second was the setting the equipment in order for organization, third is the shining of the workplace and the equipment or eliminating the dirt and debris, fourth is standardizing having a master list all the materials in the lab for monitoring purposes and lastly sustaining the implemented first four methods. After applying the 5S method the workplace was evaluated through the help of 5S personnel Audit Forms

#### **RESULTS**

Through photographs and the 5S Visual Workplace Personnel Audit Form, the status of the lab's visual workplace was compared before and after and exhibited improvements in terms of cleanliness and accessibility. The Physics Laboratory did get a good result from the 5S method. Thus, the null hypothesis was rejected.

#### **DISCUSSIONS**

It was proved that the 5S method applied to CNSHS Physics Laboratory can provide easier access to the tools and equipment for students and faculty members of the school. The method provided the concept of how to rearrange the workplace particularly the equipment in the laboratory. It is recommended to maintain the effect of the implementation of 5S by sustaining what has been achieved in the first four phases.

**KEYWORDS:** sort, set in order, shine, standardize and sustain

**SUBMISSION ID: R04A-CAVITP-1380**

**Child Protection Policy (Deped Order No. 40 S. 2012) Towards Personal and Social Behavior of Students of Dayap National High School**

Ludivico Malitic

**Abstract**

**INTRODUCTION**

Education systems have an important part to play in child protection, most people spend a significant amount of their childhood in the school environment which constitutes the most influential context for the child beyond that of the family. Since child abuse is occurring worldwide, the Department of Education has released a comprehensive policy that will ensure the protection of students entitled "Department of Education Child Protection Policy".

**METHODS**

Descriptive method was used with the structured questionnaires in order to reveal the significant effect of the variables wherein weighted mean and standard deviation were used. Regression Analysis was used to find out the significant effect of the Department of Education's Child Protection Policy towards personal and social behavior of the students.

**RESULTS**

The level of implementation of the policy was effective and revealed that students rated their personal and social behavior as "sometimes" while teachers rated them as "always". Physical Violence and Threats have a significant effect on the personal behavior of the students while Sexual Violence and Psychological Violence has no significant effect.

**DISCUSSIONS**

The Department of Education's Child Protection Policy implemented in the school was effective wherein both teachers and students are aware of the content of the policy. To make it most effective, the school must provide a setting and training program about the policy followed by a strict implementation. A continuous assessment of students' services should maintain a well-balanced program of personal and social behavior of the students.

**KEYWORDS:** Psychological, Threat, Comprehensive, Protection Policy, Violence

**SUBMISSION ID: R04A-LAGUNA-0305**

## **Comprehensive Sexuality Education: Taboo Or a Must-Do?**

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Francis Sean Macaranas, & Roy Chriatian Francisco, Colegio de San Juan de  
Letran-Bataan

(Adviser: Marvin Ibabao)

### **Abstract**

#### **INTRODUCTION**

The Comprehensive Sexuality Education (CSE) is supposedly a part of the curriculum that will address the age-appropriate physical, mental, emotional and social dimensions of human sexuality. This study aims to determine how students perceive human sexuality and the future inclusion of CSE in the curriculum.

#### **METHODS**

Descriptive case study approach was used for this study. The respondents are six students from each grade level of the Basic Education Department of Colegio de San Juan de Letran-Bataan.

#### **RESULTS**

The results showed that the students are receiving a very limited amount of information about human sexuality. Furthermore, it showed that the primary source of the respondents' knowledge regarding human sexuality is either school and/or teachers, home, or they depend on their own discovery.

#### **DISCUSSIONS**

Based on the findings, it is recommended that parents be more open-minded in discussing the topic of sexuality with their children. On the same note, the Department of Education should provide more seminars and/or develop programs for the teachers who will handle this subject to arm them with the right information and train them the proper way of handling it.

**KEYWORDS:** human sexuality, comprehensive sexuality education, RH Law

**SUBMISSION ID: R003-BATAAN-0005**

## **Criminal Investigation Strategies of Alfonso Police Officers and its Impact to Their Work Effectiveness**

Reden Keith Bashan

### **Abstract**

#### **INTRODUCTION**

Criminal investigation strategies are the tactic that the police officers use in every criminal investigation in a specific crime scene. The researcher has seen that the police officers have been exposed to various strategies so this study is implemented to determine the different criminal investigation strategies and their impact on the work effectiveness of the police officers. This study is necessary to create awareness on different criminal investigation strategies and its interaction with their work performance.

#### **METHODS**

Descriptive type of research design was used in conducting the study. The researcher used survey questionnaire tools to gather and collect information. Systematic random sampling was used to select the respondents. The researcher distributed questionnaires for the forty (40) respondents of the study in order to determine the different criminal investigation strategies and their impact on the work effectiveness of police officers.

#### **RESULTS**

Findings generated in this study are as follows: (1) Criminal investigation strategies that the respondents mainly utilize are preliminary investigation and follow-up investigation; (2) This is a reflection of the respondents' level of exposure to the different criminal investigation strategies; and (3) Lastly, the criminal investigation strategies have an impact to the work effectiveness of the police officers. The study shows that 100% of the respondents used preliminary investigation and follow-up investigation, the science investigation with 25% percent, the systematic investigation with 23% percent and the tactical investigation got zero (0%) percentage.

#### **DISCUSSIONS**

Preliminary investigation and follow-up investigation are the criminal investigation strategy that the police officers are commonly used in their work. It can bring productivity in terms of giving a concrete solution to the crime and it can lead to the awareness of the identity of the suspect and give a valid result for the investigation. To the future researchers, to conduct an in-depth study from the results of this research is proposed to gather further information and to create a pool of reference materials that provide the facts about criminal investigation strategies.

**KEYWORDS:** Criminal Investigation, Strategies, Work effectiveness

**SUBMISSION ID: R04A-CAVTP-1428**

## **Determinants of Curriculum Exit Preference among Grade 12 Students of Balligui High School, the School Year 2017-2018**

Gemslee R. Pasion, Balligui High School/Department of Education  
(Adviser: Irene A. Guliquey)

### **Abstract**

#### **INTRODUCTION**

Republic Act 10533 also known as "Enhanced Basic Education Act of 2013", realizes the vision: to establish a system of education that truly imbues the youth with the skills they need to pursue their dreams". This is the SHS that refers to the last two years of the K to 12 Program, Grades 11 and 12. These two additional years will equip learners with skills that will better prepare them for the future, whether it is for; Employment, Entrepreneurship, Skills Development (Further Tech-Voc training), and Higher Education (College). This research identifies the factor considered by the SHS students in choosing their curriculum exits as the next step of the first graduates of the K-12 program. This study will be beneficial for both students and their parents. This may help them to find alternative ways in order to achieve the goals and dreams of their children.

#### **METHODS**

The descriptive survey research design was used in the study. The respondents were forty-one (41) grade 12 students of Balligui High School for the school year 2017-2018, composed of 19 Home Economics and 22 GAS students. The universal technique was employed in determining the respondents, taking all the students as respondents, to ensure the accuracy and precision of the research findings. The main tool used in gathering data is through the use of a researcher-made questionnaire which was adapted in Career Guidance Manual for Teachers Module 1: The Road to the Right Choice, found in Department of Education Order No.41 series 2015.

#### **RESULTS**

Most of the respondents are 18 years old and the majority of them are female. The highest educational attainment of their parents is an elementary undergraduate for the fathers and high school undergraduate for the mothers. The preferred curriculum exit of the respondents is higher education and the factors affecting their curriculum exit preferences are personal, family and social factors. Among the mentioned factors, family influenced most of the respondents.

#### **DISCUSSIONS**

The results showed that the respondents prefer to take higher education as their curriculum exit after graduation from senior high school to pursue a college education. The results had also proven that parents' insights affect the decisions of their children in choosing their curriculum exit. It is also important that the students and parents talk and decide together about the curriculum exit that will be taken by their children to avoid regrets and misunderstanding in the future. Schools should also strengthen the career guidance program.

**KEYWORDS:** curriculum exists, K to 12, entrepreneurship, employment, higher education

**SUBMISSION ID:** R002-QUIRIN-0109

## **Determining the Perception of College Readiness of the Grade 12 Senior High School Students of MCHS Under Academic Track**

Shunky Mae G. Dela Cruz, Department of Education  
(Adviser: Shaila Tanglod)

### **Abstract**

#### **INTRODUCTION**

College is an important step toward a promising future but without solid preparation in high school, there would be lesser chances of success in college. Thus, the purpose of this study is to find out if the students are intellectually prepared in terms of knowledge and ability with regards to their career choice in college. This study also sought to understand their emotional preparedness in handling situations and financial preparedness that will help them defray their college education needs and determine the difference that exists between their academic performance, as well as the financial and emotional aspects.

#### **METHODS**

This study is a descriptive type of research which utilizes the survey method. It involves, answering the questions from the survey questionnaire. A researcher-made questionnaire used in this study was validated by the expert at the school level. The researcher first asked approval from the office of the school Principal and Assistant Principal, as well as, the participants before the conduct of the study. Slovin's formula was used to find out the 270-total number of participants and stratified random sampling to identify the number of participants per strand. Likert scale was used to determine the perception of the students on college readiness and independent t-test for the significant difference. Frequency, percentage, the mean and standard deviation were used to analyze the data gathered through the help of the SPSS Student's Version.

#### **RESULTS**

The 270 participants of the study consist of 50% male and 50% female were able to manage their academic requirements with 55.6% average grade range of 80-89. Concerning intellectual readiness, they were moderately ready with mean scores of 3.15 and financial readiness with mean scores. The respondents felt ready, as to emotional readiness, with a 3.71 mean score. It further shows that there was no significant difference in the level of intellectual, emotional and financial readiness of the respondents when they were grouped according to sex.

#### **DISCUSSIONS**

The result reveals that students' intellectual, emotional and financial readiness towards college life is an imperative issue to consider for students and teachers as well as the parents. Hence, this will serve as motivations for the students to pursue their career choice in college. Moreover, teachers can help as providers of unending support to the students in their academics as they envision reasonable goals towards the future. Furthermore, the unconditional love and full support of parents are important in many aspects of the life of their children.

**KEYWORDS:** Perception, College Readiness, Academic Track

**SUBMISSION ID: R002-QUIRIN-0060**

## **Drinking: An Alternative Way of Learning**

John Julius Kim Bellido, Quisao National High School

### **Abstract**

#### **INTRODUCTION**

This paper aims to prove that regardless of the well-known negative effects of alcohol-drinking, this can also be an avenue of learning. Through socializing with a diverse group of individuals while drinking, one can discover and learn things from his/her "kainuman" or drinking members. This study, however, does not promote drinking, but rather this will just serve as enlightenment to its readers that there is something educational about drinking.

#### **METHODS**

This study was strengthened by the concept of Johari Window which focuses on the awareness of oneself and his potentials to learn. Meanwhile, this study was a combination of qualitative and quantitative research. It has two parts: (a) Background of alcohol drinking in the Philippines, and the concept of Johari Window and its relation with alcohol drinking; and (b) The presentation of the perception of the respondents about learning through alcohol-drinking. Furthermore, the data from the respondents were gathered through a questionnaire checklist and interview which was conducted during a drinking session where conclusions were based upon.

#### **RESULTS**

Out of the responses of the subjects, it was found that they have learned various life skills through their drinking experiences. In their studies, the results suggested that their collaborative effort is ignited during group activities such as research works and reports. Thus, while having some alcohol during the conduct of their activity, they claimed to be free of boredom - making them proactive and productive at the same time. Meanwhile, in terms of their relationship with their family members, they mentioned that their bond is strengthened through these sessions since they were able to raise some family issues and find ways to talk and solve them. Finally, in terms of drinking with a variety of individuals, it was found on this study that dreams and aspirations are dealt through drinking. With this, they were able to see the endless possibilities that they can achieve and the success that is waiting for them.

#### **DISCUSSIONS**

The results of the study, therefore, conclude that the perception towards drinking must not be enclosed with negativity rather look at its bright side with a silver lining. But, never forget the moderation and the responsibility that must always be present in drinking especially for the younger ones. Furthermore, the authenticity of one's mind and its openness under the slight influence of alcohol makes him susceptible to a vast learning experience.

**KEYWORDS:** Alcohol-drinking, Alternative way of learning, Johari Window

**SUBMISSION ID: R04A-RIZALP-0065**



## **Effectiveness of the Imus Youth Leadership Development Program as a Stepping Stone to Leadership and Political Awareness of a Young Museum**

Angel A. Andes & Christyne Anne C. Canlas, Gen. Pantaleon Garcia Senior High School

(Adviser: Maria Theresa Landoy)

### **Abstract**

#### **INTRODUCTION**

One of the greatest investments in society is the investment in the youth. It is like investing in the future of society and for the next generation. Seeing these great responsibilities and opportunities on the youth, the Local Government of the City of Imus started the Imus Youth Leadership Development Program that aims to establish a network of student leaders with commitment in serving the public. This study aims to evaluate the effectiveness of the Imus Youth Leadership Development Program (IYLDP) as a stepping stone to Leadership and Political Awareness of a Young ImuseÅ±o.

#### **METHODS**

The researchers used Quantitative type of research to obtain numerical data through the use of different statistical techniques. The researchers used the descriptive evaluative study to evaluate the effectiveness of Imus Youth Leadership Development Program. The researchers also used Non- Probability Sampling, more specifically, Availability Sampling. The alumni of the program, being the respondent of this study answered the survey questionnaire according to the categories that the researchers gave.

#### **RESULTS**

Based on the facts and the data that the researchers gathered, this study concluded that the IYLDP is highly effective, with average quantified results of 4 in the instrument that was utilized, in terms of helping the participants in developing their leadership skills and making them aware about politics. The study also shows that the respondents strongly agree that the IYLDP serves as a training ground for those aspiring leaders of our country by instilling the lessons of good governance and nation-building, new experience, and adventure by opening the socio-political perspective of young individuals, and a never-ending program that affects the rest of their lives. All the variables are agreeing that the program is considered as highly effective in their lives.

#### **DISCUSSIONS**

In this study, the IYLDP serves as a training ground for the students who want to serve their community and the country. The program also developed the holistic skill and professionalism of the participants. The program has opened the eye of the participants in the significance of serving in the government in order to develop their fellowmen.

The developed skill of the participants does not end right after the program, some of them continue to practice those skills which are helping them in their current career. The IYLDP really served as a stepping stone to the Leadership and Political Awareness of Young ImuseÅ±os.

**KEYWORDS:** IMUS YOUTH LEADERSHIP DEVELOPMENT PROGRAM LEADERSHIP POLITICAL AWARENESS YOUNG IMUSENO

**SUBMISSION ID: R04A-IMUSC1-0008**

## **Empirical Study on the Sexual Jokes in Social Media of Grade 10 (Ten) Students of Batangas State University**

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(Adviser: Jed Tolentino)

### **Abstract**

#### **INTRODUCTION**

In a society where people are becoming too open to sensitive topics that can lead to inappropriate behavior, this study was conducted to evaluate the responses of teenagers to sexual jokes in social media. Social media is one of the main instruments used by people to spread their thoughts. Sexual jokes continue to spread without people realizing that they can be offensive. This research aims to look deeper into a problem that is often overlooked by society and to gain insights regarding the responses and how certain factors affect them in relation to their demographic profile.

#### **METHODS**

This study used a quantitative descriptive research design. The number of respondents was obtained through Slovin's formula. Through simple random sampling, self-constructed survey-questionnaires were distributed. The first part covered the demographic profile of the respondents while the second part was to identify the factors affecting the response of the students. The results were tallied using a Likert scale. Percentage and frequency, weighted mean and composite mean, Chi-square, and independent t-test were the statistical techniques used to tabulate and analyze the acquired data.

#### **RESULTS**

The data showed that most of the respondents engage to social media particularly Facebook and Twitter for 1-3 hours a day and more than half of them responded that they sometimes encounter sexual jokes in these social media platforms. It was also revealed that the factors affecting the response of the respondents, which involves level of awareness, external and individual factors, do not affect the way they respond to sexual jokes in social media. It seems that most of the students are less aware of media contents that involve sexuality. Personal characteristics, as well as the goals and objectives of an individual, seem to have a very low impact on the way they respond to sexual jokes. These factors also showed a significant relationship with the demographic profile of the respondents.

#### **DISCUSSIONS**

It is implied that the profile of the respondents is a factor that can affect the response to sexual jokes. In order to promote awareness and interest, one must be responsible for dealing with the vast scope of sexual jokes in social media. The researchers limited the approach to social media platforms including Facebook and Twitter, and respondents subjected were in Grade 10 students only, thus, giving rise to a new opportunity to seek knowledge in different social media platforms and age bracket.

**KEYWORDS:** awareness, sexual jokes, social media, response

**SUBMISSION ID: R04A-BATANC-0179**

## **Enhancing the Level of Achievement in the Least Mastered Skills in Araling Panlipunan Using Technology-Based Instructional Materials**

Richelle Rogel & Emely Hernandez, Department of Education

### **Abstract**

#### **INTRODUCTION**

Information and Communication Technology can lead to improved student learning and better teaching methods. A report made by the National Institute of Multimedia Education (NME) in Japan proved that an increase in student exposure to educational ICT through curriculum integration has a significant and positive impact on student achievement, especially in terms of "Knowledge Comprehension", "Practical skill" and "Presentation skill" in subject areas such as Mathematics, Science and Social Studies. Through ICT, teachers can easily explain complex instructions and ensure students' comprehension. (Venkatesh, 2013). Develop multiple intelligence through a multimedia presentation of materials, improve motivation and engagement in the learning process of students are the aims of this action research. This action research focused on enhancing the level of achievement in the least mastered skills in Araling Panlipunan of randomly selected Grade 9 students of Gen. E. Aguinaldo National High School - Bailen.

#### **METHODS**

The quantitative and qualitative method was used in this action research. Thirty randomly selected students participated and answered the pre-test. They undergo the intervention process using technology-based instructional materials. Weighted mean and paired t-test of pre-test, post-test and gain a score of the students in the test were used to answer the problem. Interviews from selected students were used for the implication of the study.

#### **RESULTS**

The mean of the pre-test was 15.83 and 23.83 for post-test. The mean gain was 8.00. This reveals that there is an improvement in the academic performance of students in Araling Panlipunan 9 after using technology-based instructional materials. There was a significantly different between the students' pre-test and post-test mean scores, T-value calculated was 29,  $p < 0.05$ . This implies that the respondents performed better in the post-test after using technology-based instructional materials. After conducting the action research, the performance of the students improved upon using the technology-based instructional materials. Technology-based instructional materials fascinate the interest of students in learning topics in Araling Panlipunan.

#### **DISCUSSIONS**

This concludes that technology-based instructional materials if used properly in the classroom help improve the academic performance of the students. Students will be more motivated to perform in their classes.

**KEYWORDS:** technology-based instructional materials, academic performances, motivated

**SUBMISSION ID: R04A-CAVTP-0757**

## **Evaluation of Religious Affiliation and Practices of Teenagers**

Jasmine Tadeo  
(Adviser: Zaldy Jazareno)

### **Abstract**

#### **INTRODUCTION**

Different religious affiliations and teenage practices can sometimes distract and affect students' relationships with their families, community, and God. Some practices can also affect students' academic performance. In this research, we evaluated which practices have great effect and impact on students' social and spiritual relationship and academic performance

#### **METHODS**

In this research, we conducted a survey which consists of three parts. The survey was conducted to 30 diverse students coming from different tracks in Senior High School. The survey includes questions about students' religion, participation in their religious community, opinions about skeptical religious beliefs and how school and community affect their beliefs

#### **RESULTS**

The results of the survey suggest that most of the respondents are dedicated to their religion and religious beliefs hence they are very active in their religious activities which they have practiced since childhood. Responses showed that students own religious materials but they do not use it more often. Though, the survey shows that their religious beliefs have influenced their way of living in every way and they are convinced that their religion is the true religion. Also, majority of the respondents believe in supernatural concepts like life after death, the concept of heaven and hell, etc.

#### **DISCUSSIONS**

The results suggest the great role of family, schools, and community in the holistic growth of a person. We recommend that schools initiate religious activities and organizations to strengthen the culture and existing religions.

**KEYWORDS:** Religious Affiliation, Religious Practices, Teenagers

**SUBMISSION ID: R005-SORSOC-0006**

## **Experiences of Schools on "Gulayan Sa Paaralan" at the District of Agoncillo: Basis for a Pilot Project on Innovative Approaches in School Gardening**

Liza Dimaano, Agoncillo Senior High School

### **Abstract**

#### **INTRODUCTION**

This study aims to assess the implementation of Department of Education Memorandum 095, s 2018 on "Gulayan sa Paaralan" through the experiences of the public schools in the District of Agoncillo. At present, the public schools are implementing school gardening, however, the issue of sustainability could not be met. Through this study, innovative approaches for effective and sustainable school gardening will be introduced and piloted at Agoncillo Senior High School.

#### **METHODS**

Descriptive research design is employed in this quantitative research study. It describes the present condition/status of the "Gulayan sa Paaralan" Program in all public schools in Agoncillo, Batangas. It comprises 18 public schools. The school principal and the "Gulayan sa Paaralan" coordinators are the respondents of this study. The survey questionnaire and interview checklist are used for the gathering of data. Weighted mean, ranking, and percentage are the statistical tools utilized by the researcher.

#### **RESULTS**

Department of Education Order on "Gulayan sa Paaralan", is being implemented in every public school in Agoncillo, Batangas. It reveals that most of them have limited gardening space, and poor quality of soil, thus, the limited and sometimes no harvest. Constraint on technical know-how; no specific school budget or financial resources; no full-time person to manage; lack of time, and limited participation of school head/principal in planning are also revealed. The availability of seeds/ seedlings, on the other hand, is sufficient through the available supply of seeds from Mun. Agriculture Office. Active participation and support of the stakeholders are the GPP's strengths. The respondents' schools could not sustain the needs of the school's feeding program. Respondents are amenable that they need to address the weaknesses of the project, therefore improvement must be done.

#### **DISCUSSIONS**

Based on the findings, the sustainability of the good and healthy harvest is imperative in the school gardening program. This need must be addressed through innovative approaches in school gardening: the hydroponics and aquaponics, as well as the use of organic fertilizers on those planted in plastic containers/bottles. These approaches address the poor quality of soil, limited space, high productivity, quality of harvests and practicing healthy agriculture which will sustain the school's feeding program and introduce a new trend in school gardening.

**KEYWORDS:** aquaponics, hydroponics, innovative approaches, sustainability, technical know-how

**SUBMISSION ID: R04A-BATANP-0180**

**Factors Affecting the Academic Performance of the Grade 12 Students of  
San Pablo City Senior High School - Stand Alone for the Academic Year  
2018-2019**

Els Ginel Anne P. Esguerra  
(Adviser: Romel Ladislao)

**Abstract**

**INTRODUCTION**

The number of students in the Philippines is increasing rapidly as time goes by. This aging population increases the demand for more educators and facilities that would supply their needs as learners. However, their learning and adaptations of it in real life and in school reflects their academic performance. This, which can be seen among them, can either be a cause of their failure or success. As a result, the academic performance of the students is always the topic of interest of the educators, especially the factors affecting this.

According to Shelton & Pedersen (2016), academic performance refers to the percentage of marks obtained by the pupils on each subject and is used to describe the academic achievement of students in K-12 institutions. Academic performance is more focused on the scores and percentage of marks which are not indicative of the actual and real-life abilities or potentials of a certain student (Delano-Oriaran, 2016)

**METHODS**

The information in this study was gathered through the use of questionnaires. The sampling method used by the researcher is stratified random sampling. Stratified random sampling is a random sampling technique wherein the population is first divided into strata and then samples are randomly selected separately from each stratum. Six hundred forty questionnaires were distributed out of 720. The responses of the remaining questionnaires are considered as inconsistent.

The female respondents are 68.6% while 31.4% are male respondents. The age was divided into three groups: 19-21 years old, 22-25 years old and above 25 years of age.

**RESULTS**

The study aimed to observe the factors that affect the student's academic performance. Eight factors were observed, namely, family income, father's education, mother's education, family size, the motivation of parents, co-curricular activities, the regularity of teachers, and interest of the teacher in the subject. Upon doing the research, seven out of eight factors were found positive. These factors are family income, father's education, mother's education, the motivation of parents, co-curricular activities, the regularity of teachers, and interest of the teacher in the subject. Meanwhile, the size of the family is negatively connected to the student's academic performance.

The results of the study revealed that the income of parents is positively associated with the student's academic performance. It is found that if the parents have higher incomes, it is more likely for the student to show good performance in studies.

It is also shown in the study that the parent's education is also a major factor in a student's academic achievement. Based on the results, the mother's education is much more influential for the student's academic performance.

The involvement in co-curricular activities is also positively related to student's academic achievement wherein these activities are helpful in getting achievements on studies. It is also found that the teacher's involvement is a major factor in the student's academic performance.

**DISCUSSIONS**

It is found in the study that 45% of the monthly income of the parents is between 10,000 and 20,000. Meanwhile, 32% of the parents have the monthly income of more than 20,000 to but less than 30,000. The family size is concluded to be 5-6 and it was categorized as 3-4, 5-6 and 6.

Meanwhile, the level of the parents is categorized into four: illiterate, primary level, secondary level, and tertiary level which includes degree, diploma education or above. The study reported that 15% of the student's fathers were illiterate, 21% were in primary level, 37% of the student's father had secondary level while 27% had a tertiary level of education. Meanwhile, 32% of the student's mothers were illiterate, 25% had a primary level of education, 30% of the student's mother had an only secondary level of education while 13% of them had a tertiary level of education.

The motivation and support given by the parents are also reported as one of the factors that affect the academic performance of students. Sixteen percent of the students have revealed that their mothers motivate them for studies while 10% stated they get motivation from their fathers. Meanwhile, 34% said that both parents are giving them motivation, and 40% of the students stated that the motivations they have come from their teachers. Seventy-seven percent of the students said that their academic achievements are due to their parents.

It is found that the students gave an average of three hours to their studies in a day after attending the classes. Meanwhile, the average time consumed by students in co-curricular activities is two hours per day.

**SUBMISSION ID: R04A-SANPAB-0078**

**Factors Affecting the Sales of Fish Vendors in Sitio Burol, Nagsaulay,  
San Juan, Batangas**

Lebby Mae S. Bacay, Department of Education Laiya National High School  
(Adviser: Caselyn Sebuc)

**Abstract**

**INTRODUCTION**

Fish selling is one of the main jobs in the Philippines as it is an archipelago. The Municipality of San Juan is an example of well-known fish selling spots in the province of Batangas. It is also a tourist spot that guests mostly visit. But the researchers noticed that sales of fish in Sitio Burol, Nagsaulay, San Juan, Batangas decreases even though guests kept coming. The researchers decided to study the factors that affect the sales of fish vendors in Sitio Burol.

**METHODS**

The mixed approach was used. Using the quantitative approach, the researchers conducted the study with the fish vendors in Sitio Burol to verify the profile of the respondents in terms of their age, sex and years in fish selling. It was also used to identify the main factor that affects their sales. Nine fish vendors participated in the survey. While using the qualitative approach, the researchers chose three fish vendors according to their availability to answer the given interview questions on how these factors affect their sales.

**RESULTS**

According to the result of the study, most of the fish vendors are at the age of 51 and above, and most of them are female. The study also showed that most of them have been selling fish for more than 10 years. Climate ranked first, followed by the demand, and the supply which is also connected to the main factor, climate, and the end consumers which is the customers. The least factors that affected the sales of fish vendors were guests, competition, marketing strategy, facility and equipment, and inflation rate. The interview ended up to also have the same three main factors. These factors greatly affected their sales that cause a decrease in their sales.

**DISCUSSIONS**

The results demonstrate that the climate as the main factor is a natural phenomenon due to global warming. In the supply and demand, the researchers suggest adding greater effort in their marketing strategy in promoting the fishes to attract a greater number of customers and implement it as soon as possible. Fish vendors should also consider selling fishes that are commonly available in the market as it is more popular to the people in the area. It is recommended to only have enough fish supply, based on an estimation of the number of fishes to sell, to avoid income loss.

**KEYWORDS:** Fish vendors, factors, sales

**SUBMISSION ID: R04A-BATANP-1280**



**Factors Affecting Track Preference of Grade 10 Students of Nagpayong High School S.Y. 2018-2019**

Lester Ian Lepaopao, Nagpayong High School

**Abstract**

**INTRODUCTION**

The main objective of this study was to determine the extent of the influence of the factors affecting track preference of Grade 10 students of Nagpayong High School S.Y. 2018-2019.

**METHODS**

The theoretical framework used was Donald Super's Career Development Theory and John Holland's Theory of Career Choice. The study utilized the descriptive quantitative method. The study seeks to see if the given five factors such as personality, parents or relatives, personal interest, job opportunities, and school environment were significant factors influencing the track preference of the Grade 10 respondents. The adopted survey questionnaire was the main instrument to gather the data from 324 Grade, 10 respondents. The statistical tool employed was Statistical Product and Service Solution (SPSS software version 20). Percentage and weighted mean were also employed.

**RESULTS**

The results showed that majority of the Grade 10 students' parents are high school graduates. Most of the fathers are blue-collar workers while their mothers are housewives. A large number of Grade 10 students belong to the low-class family. Majority of Grade 10 students preferred Academic Track, specifically, the Humanities and Social Sciences (HUMSS) Strand. School environment got the highest grand weighted mean which very much influenced among the five factors to the students' track preference.

**DISCUSSIONS**

A career guidance program in Nagpayong High School for those Grade 10 students is to be developed to provide students awareness of their personality, interests, strengths, and weakness, among others. From that, the guidance counselor can provide support towards orientation and choice of track, a precursor towards pursuing chosen careers. Track course options for career high school students are to be provided to the students as early as possible so that they will not be misled with the information that they will acquire in choosing their future career. A competency-based curriculum that responds to the industry's needs is to be implemented so that students are guided in their career choice. The educational seminar must be developed so that the students may know essential information regarding career, annual incomes, personal information awareness and the like.

**KEYWORDS:** Track Preferences, Track Choices, Track and Strand, Career Choices

**SUBMISSION ID: NCR1-PASIGC-0002**

**Factors of Wrong Track Choice and its Impact to the Academic  
Performance of Selected Grade 12 Students in Nagpayong High School  
S.Y. 2018-2019**

Rica Delgaco, Nagpayong High School

**Abstract**

**INTRODUCTION**

The main objective of this study was to determine the factors of wrong track choice and its impact on the academic performance of selected grade 12 students in Nagpayong High School S.Y. 2018-2019.

**METHODS**

The study was based on Planned Happenstance, also known as Career Chaos Theory. The study utilized the descriptive-correlation method of research. It also used the survey questionnaires as the main instrument of data gathering. A total of 135 respondents were involved in Nagpayong Senior High School. The statistical tools used were the percentage, weighted mean, Pearson r correlation.

**RESULTS**

The results showed that majority of the respondents were taking Information and Computer technology or ICT strand and the much-preferred academic track such as Science, Technology, Engineering, Mathematics or STEM strand. The respondent's academic performance was satisfactory which means that despite experiencing factors of wrong track choice, they still managed their academic performance. The respondents agreed to the different factors of wrong track choice, such as advice from others, track choice consideration, and personal experience. This meant that they experienced those factors in choosing their career path. The study shows that there is no significant relationship between factors of wrong track choice and academic performance, therefore, the academic performance was not affected by the factors of wrong track choice.

**DISCUSSIONS**

It is hereby suggested that Career programs such as counseling, seminars, and public lectures on a career path and career decision-making should be implemented before/during entering senior high school so that they can be well-informed about their career path and overcoming wrong track choices. It can also increase the probability of having higher academic performance since the students enjoy and love the track choice they made. Teachers and educators should give positive insights and advice to the students who have wrong track choices and to motivate them despite choosing the wrong track. It should not lead to low academic performances but a great career future instead. Career guidance counseling should be implemented in all senior high schools to help students be on the right track and for them to be well-informed that having a wrong track choice will not make their academic performance lower. For future researchers, it is recommended to conduct an extensive study about students' career path and decisions.

**KEYWORDS:** Wrong Track Choice, Career Choice, Track Choice, Academic Performance

**SUBMISSION ID:** NCR1-PASIGC-0010

**Factors of Wrong Track Choice and its Impact to the Academic  
Performance of Selected Grade 12 Students in Nagpayong High School  
S.Y. 2018-2019**

Rica Delgaco, Nagpayong High School  
(Adviser: Marivi Camacho)

**Abstract**

**INTRODUCTION**

The main objective of this study was to determine the factors of wrong track choice and its impact on the academic performance of selected grade 12 students in Nagpayong High School S.Y. 2018-2019.

**METHODS**

The study was based on Planned Happenstance, also known as Career Chaos Theory. The study utilized the descriptive-correlation method of research. It also used the survey questionnaires as the main instrument of data gathering. A total of 135 respondents were involved in Nagpayong Senior High School. The statistical tools used were the percentage, weighted mean, Pearson r correlation.

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**DISCUSSIONS**

It is hereby suggested that Career programs such as counseling, seminars, and public lectures on a career path and career decision-making should be implemented before/during entering senior high school so that they can be well-informed about their career path and overcoming wrong track choices. It can also increase the probability of having higher academic performance since the students enjoy and love the track choice they made. Teachers and educators should give positive insights and advice to the students who have wrong track choices and to motivate them despite choosing the wrong track. It should not lead to low academic performances but a great career future instead. Career guidance counseling should be implemented in all senior high schools to help students be on the right track and for them to be well-informed that having a wrong track choice will not make their academic performance lower. For future researchers, it is recommended to conduct an extensive study about students' career path and decisions.

**KEYWORDS:** Wrong Track Choice, Career Choice, Track Choice, Academic Performance

**SUBMISSION ID:** NCR1-PASIGC-0011

## **Fixtures and Fittings Out of Cacao Leaves**

Marianne Cielo Diquit, Cavite National Science High School

### **Abstract**

#### **INTRODUCTION**

Alfonso, Cavite is known for producing cacao products. In the year 2020, they have an agenda to produce 200 tons of cacao. In farming cacao trees, pruning is needed so that the fruit of the tree would not get any diseases like the black pod disease. Black pod disease is the common disease that cacao trees could get and the fruit of the cacao would start to rot if it got affected. Pruning also helps in growing the fruit better, because of these many leaves where getting disposed of by the farmers. They burn the leaves after they have been dried, however, burning could add up to air pollution that could also affect our health. The main reason for this study was to help the farmers on how will they use the leaves after being pruned.

#### **METHODS**

A. Gathering of the Materials

Cacao leaves, caustic soda, stove, stainless container

Sorting of Leaves

The younger leaves were separated with the older one. In this case, the younger and medium size leaves were used. The damaged and matured leaves were disposed of properly.

Fossilizing of Leaves

Removing green pigments of the leaves

Product Making

General procedure on assembling the product.

Finalizing of the Product

Adding some design for a better look.

Conducting of Seminar

A seminar was conducted at Alfonso, Cavite.

Conducting of Survey

After the seminar, a survey was given to the attendees of the seminar.

#### **RESULTS**

The result of the survey that we conducted showed that the people of the community would have an extra income if they continue in fossilizing leaves. They also have some suggestions like making other products. According to the survey conducted the farmers learned a lot and it would help them to lessen the burning of leaves. Through this seminar, they could also show their creativity in making many different handicrafts out of fossilized cacao leaves

#### **DISCUSSIONS**

Most of the attendees of the said seminar have their own ideas on how they will use the process of fossilizing leaves. Most of them were thinking to start a business wherein they could use what they learned and to have an extra income aside from farming. The fossilized leaves could be also sold as designs for projects. The cacao farmers could learn the fossilizing of leaves so that they could lessen the burning of leaves, they could also have an extra income for fossilizing leaves because they could make a new product out of it and the product that they made would be sold to the people who would visit their farm.

**KEYWORDS:** Pruning, Black pod disease, Cacao, Fossilized Leaves

**SUBMISSION ID: R04A-CAVITP-1414**

**Gender and its Relationship to the Study Habits of Selected Grade 12  
Students of Lucsuhin National High School SY 2018-2019**

Jayselle Sarmiento

**Abstract**

**INTRODUCTION**

Improving study habits are said to be one of the keys to gain academic success for students. Having the right study habits that fit students' personality and role, of being male or female, really affects academic performance. This study is timely because most of the students nowadays are neglecting the importance of having the right study habits. Especially, this is important for grade 12 students to have their own strategies in taking their preferred courses on their next journey for higher education, which is the college.

**METHODS**

Descriptive research design is used in conducting the whole study and simple random sampling is used to determine the numbers of respondents needed. One hundred forty students are administered to answer the questions given to them. This study was conducted in December 2018.

**RESULTS**

The study reveals that gender has a significant relationship with study habits. Female students preferred note-taking skills and that female student are more ethical in terms of frequency of attending lectures and improving academic performance. On the other side, male students excelled in time management, which is a unique form of self-regulation, in which people cycle through a process of goal establishment, planning, striving, and revision. It also showed that male students had a greater sense of duty and responsibility as they engage in their studies.

**DISCUSSIONS**

Gender has a big role in choosing the study habits of every student. Females excelled in note-taking skills and male students excelled in time-management. This research has few references; however, the literature can be connected to the results of the study. In the future, researchers must put more literature that the data can be interpreted easily.

**KEYWORDS:** Gender, study habits

**hSUBMISSION ID: R04A-CAVITP-1430**

## **Governance of the Local Chief Executives in the Province of Cavite**

Angelita Baybay, Amadeo National High School

### **Abstract**

#### **INTRODUCTION**

Several studies revealed that good governance is a prerequisite of development since governance deals with how the government conducts business in its own sphere and how it interacts with civil society. In relation to this, Cavite can be considered as the subject of this study because it is one of the richest and one of the fastest growing provinces in the country. In this study, the perceived degree of governance of the Local Chief Executives (LCEs) in the province of Cavite was explored. The Local Chief Executives, particularly the city or municipal mayors have great responsibilities to their constituents and to the nation in general. Their roles are very important in providing the basic services in uplifting the living conditions, security and general welfare of the community.

#### **METHODS**

The descriptive-correlational research design was used. In choosing the participants, a simple random sampling technique was applied since the study primarily aimed to survey the whole province of Cavite. The participants were grouped into two: LCEs and LCEs' constituents. There were 21 LCEs and 113 constituents from the various cities and municipalities in the whole province of Cavite who responded through a survey questionnaire. Technical statistical tools were used to analyze and interpret the data.

#### **RESULTS**

Both LCEs and their constituents evaluated the degree of governance of LCEs as great in terms of resource support for human priority concerns, effectiveness in services delivery and support systems, and accountability measures installed. The demographic and socio-economic characteristics of the LCD such as age, civil status, educational attainment, and training/ seminars attended affect their perceived degree of governance. While performing their duties and responsibilities, they encountered problems such as public hearing, negative acceptance to change and development, diversity in opinions of local members, political problems, acceptance of the policy, defiance, insufficient/limited budget allocation, discipline, lack of human capital resource, and multitasking.

#### **DISCUSSIONS**

Results showed that demographic and socio-economic characteristics of LCEs affect their perceived degree of governance. Reviewing these characteristics is very important since these play a vital role in their governance. There is also a need to review the distribution of tasks of the staff of the office of the city/municipal mayor to solve the human capital needs and multi-tasking problems.

**KEYWORDS:** Governance, Local Chief Executives

**SUBMISSION ID: R04A-CAVITP-0812**

## **Grade 9 and 10 Agricultural Career Perception: Basis for Diversified Farming Perspectives**

Mark Christian A. Medina & Paul Gerard V. Gevido,  
Department of Education

### **Abstract**

#### **INTRODUCTION**

The Department of Education recognized the significance of agriculture in the growing economy of the Philippines. Comprising a land area of an estimated 30 million hectares where 47% of which is agricultural, the prime developmental goal of the government focused on economic engaging these land masses. This existing reality does not seem to align students' common cognizance on agriculture and farming. There seem to be misleading and diverting ideas on how agriculture works. The research assesses the students' perception of agricultural career and suggests a program essential to establish a better view of the sector of agriculture.

#### **METHODS**

The research is descriptive design. The researchers gathered the perception of the students through a researcher-made questionnaire. The samples were from grade 9 and grade 10 students taking up agriculture in Technology and Livelihood Education subject. The research is anchored on Bandura's Social Cognitive Theory that focuses on self-system as a major predictor of the career orientation of students. The research focused on the perception of students on careers in agriculture.

#### **RESULTS**

The results showed that respondents slightly agreed, with the mean score of 4.03, that agriculture offers wide career options. Likewise, respondents slightly agreed, with the mean score of 4.00, that agriculture demonstrated high physical demand. In terms of positive household economic assurance (4.22), respondents slightly agreed that agriculture offers good income generation. As to the high professional decency with the mean score of 4.45, respondents showed agreement.

#### **DISCUSSIONS**

The results can be attributed to students' attitude towards specific subjects, education, and academics in general (Bowen et al, 2000). Agriculture is generally equated with farming alone and this decisive impression brought the negative perception of careers in agriculture among high school students. In the Philippines, wherein about half of the labor force involved in agriculture, it will directly impact the economy and growth of the country. In contrast to the result, where agriculture shows high professional decency, a study published in Journal of agricultural education, the result indicated that careers in agriculture were not offering what the students perceived to be important in their own career choices. The widespread notion of agricultural career brought the average age of farmers to 56 years old from former 55 years old. This increment was brought by the shunning of today's generation on succeeding the farm works.

**KEYWORDS:** Agriculture, Career, Perception

**SUBMISSION ID:** R04A-SANPAB-0115

**ICT Integration in Teaching Araling Panlipunan Relative to the Academic Performance among Grade Ten Students of Infanta National High School, Infanta, Quezon: Basis for an Araling Panlipunan Ict-Inte**

Ma. Glena Obuyes, Infanta National High School

**Abstract**

**INTRODUCTION**

To protect and promote quality education is the paramount duty of the Department of Education. That is why the Philippine government has been committed to modernizing the Philippine educational system. Along with this effort are the continuous curricular changes and reorientation, teachers training and investment in school facilities and infrastructure. One of which is geared towards the vision of equipping each public school with the modern computer and other information and communication (ICT) - related gadgets and instructional materials. In this study, the researcher explored proof of whether an investment in ICT has benefited the learners and how far has ICT been integrated into the Philippine high school education.

**METHODS**

The method employed was an experimental design where both the control and experimental group were given pre-test and post-test. The data gathered were subjected to statistical treatment using mean and t-test to test the significant difference between the pre-test and post-test results of the groups.

**RESULTS**

Based on the post-test results the control group obtained a mean of 25.64 while the experimental group has a mean of 39.49. The computed MPS of the controlled group was 51.28 % and the experimental group obtained 79.42 %.

On the significant difference between the level of performance of a controlled and experimental group, a mean difference of 16.06 revealed and a computed t-value of 68.91 which is higher than the critical value of 1.684 was observed the difference in the level of performance between the two groups.

The null hypothesis on the significant difference between the post-test was rejected at 0.05 level of significance. The Utilization of ICT materials in teaching Araling Panlipunan IV has improved the level of performance of the students.

**DISCUSSIONS**

The results of the current study have established the positive impact of ICT in enhancing the performance of the students and the overall teaching and learning. Although the importance of ICT has been acknowledged by Infanta National High School, there are some impediments facing both the students and instructors in adopting Educational Technology. The insufficient computing facilities and infrastructure, lack of sufficient technology budget and IT investment, technical support, and excessive budgeting and resources consumption needed for training programs are among the obstacles facing the school in adopting ICT.

**KEYWORDS:** Academic Performance, assessment, control group, experimental group, pre-test, post test

**SUBMISSION ID: R04A-QUEZON-0120**



**Impact of Announcing Performance and Written Task Result Towards  
the Academic Performance of Selected Grade 11 Students in Lucsuhin  
National High School Sy 2018-2019**

Chrizalyn Cordez

**Abstract**

**INTRODUCTION**

Performance and the written task are also known as an alternative way to measure the knowledge, skills, and abilities of students. It is an authentic task that requires students to do something which involves both process and product. After doing the task, teachers usually announce the task result. Therefore, this study is vital to read since it tackles the impact of announcing task result to the students' academic performance, whether it is high or low.

**METHODS**

Descriptive Research Design was used in this study. The researcher used a survey questionnaire which was administered to 129 respondents in order to determine the impact of announcing performance and written task result in students' academic performance. Quota sampling was used in choosing the respondents.

**RESULTS**

Findings generated in the study were as follows: 78% of the respondents were exposed to role play in announcing performance task; 73% of the respondents were familiar with written task, examination; 77% said that Pagbasa at Pagsulat ng it-ibat-ibang Teksto is the subject where their scores are usually announced; 60% of the respondents answered that teachers announce the task once. It also reveals that 100% of the respondents "strongly agree" in all indicators to the respondents' academic performance; and also 50% of the respondents "agree", 40% "strongly disagree" and 10% "strongly agree" that the respondents' academic performance is affected by announcing performance and written task result.

**DISCUSSIONS**

When students successfully know the scores from announcing the task result, the ones with high scores feel pride and satisfaction. Students' motivation and self-esteem is also built and strive hard in their studies when they receive low scores. To the future researchers, it is recommended to conduct an in-depth study from the results of this research and provide focus on solving specific problems of the students' tasks. It is also recommended to conduct the same study in a wider population and find possible ways on how to improve the students' academic performance.

**KEYWORDS:** Announcing, Performance Task, Written task, Task Result, Academic Performance

**SUBMISSION ID: R04A-CAVTP-1426**

**Impact of K-12 Work Immersion Program to the Basic the  
Employability Skills and Attitude of Grade 12 Students of Nagpayong  
Senior High School: A Basis for Action Plan**

Bai Samah G. Untong, Nagpayong High School  
(Adviser: Marivi Camacho)

**Abstract**

**INTRODUCTION**

The aim of the study is to determine the Impact of K to 12 Work Immersion Program to the basic employability skills and attitude of grade 12 students of Nagpayong Senior High School. The lack of training and preparation of students give them less opportunity to find jobs they desired.

**METHODS**

The researchers utilized the theory of Collins & Brown (1997), the Cognitive Apprenticeship Theory and the Situated Learning Theory proposed by Lave and Wenger (1991). The method of research employed was a mixed method, which was a combination of qualitative and quantitative research and descriptive method to describe the characteristics and phenomena in the study. The respondents were grade 12 students from Nagpayong High School with a sample size of 150 respondents. The instrument used in this study was the survey questionnaire adapted from the "'Apprentice Search' and a focus group discussion. The employed statistical tool was the Statistical Package for the Social Sciences (SPSS) to ensure accurate and reliable data.

**RESULTS**

The findings show that respondents have an impact on communication, with an overall weighted mean of 3.80 interpreted as "High Impact". In terms of critical thinking, it garnered a grand weighted mean of 3.40 interpreted as "High Impact". In terms of learning, it garnered 4.14 grand weighted mean, interpreted as "Very High Impact". From the result, attitude and behavior towards oneself garnered 3.96 grand weighted means interpreted as "High Impact". Lastly, in terms of attitude and behavior towards others, it garnered an overall grand weighted mean of 3.76 verbally interpreted as "High Impact".

**DISCUSSIONS**

The researchers recommend that the school administration deploy students to other big business industry for students to further hone their working skills. The teachers and the school administration should administer a leadership training program to hone the students' leadership skills and initiative skills, to take responsibility in every task and given situation for them to resolve. Teachers should lessen the group activities for them to learn how to work by themselves, instead of working in a group all the time. The school should manage and arrange a support system to students' needs for work immersion, such as financial support and transportation services for their welfare. A similar study should be conducted to identify other employability skills necessary for students' future effective employment.

**KEYWORDS:** Impact, Work Immersion, Basic Employability Skills, and Attitude

**SUBMISSION ID:** NCR1-PASIGC-0008

## **Impact of Pantawid Pamilyang Pilipino Program (4Ps) to the Beneficiaries of Selected Caviteños**

Flores, Rose Ann  
(Adviser: Ferdinand Callueng)

### **Abstract**

#### **INTRODUCTION**

In the Philippines, conditional cash transfer like the Pantawid Pamilyang Pilipino Program (4Ps) made a positive impact on its beneficiaries of (100) respondents of Cavitenos. It is important to know how well the implemented conditional cash transfer by the government affects the lives of its beneficiaries. Many poor families believe that there is hope for a better life. Poverty is one of the problems here in the Philippines and conditional cash transfer is one of the ways to lift up poor families. This research will give results about the impact of 4Ps to its beneficiaries and let the government know how well their program support its beneficiaries and for the government to make more improvement if needed.

#### **METHODS**

In determining the impact of 4Ps, the researchers used the descriptive method to construct questionnaires. The statistical tools used by the researchers are percentage, frequency, weighted mean and F-test.

#### **RESULTS**

Members of 4Ps in Barangay 8 who participated in the study assessed the impact of 4Ps before and after they became a beneficiary. After knowing the results, it shows that there was a significant difference when the respondents are grouped according to their age, number of children and monthly income. The results also showed that there was no significant relationship when respondents are grouped according to their livelihood. The results also indicated that there are significant relationships between the profile of the respondents and their assessments.

#### **DISCUSSIONS**

The results showed that 4Ps was effective for some Cavitenos, especially for aged 30-40 years old that has 2-4 number of children. R. Reed (2014) findings determined that the program enhanced the academic outcomes and elements of personal growth and development of students. The design of the study was descriptive where the researchers only observed the natural phenomenon, other researchers may be able to have different results if they will be using other research designs in different contexts. The result of the study may help the government for the improvement of the program that can give advantages to its beneficiaries.

**KEYWORDS:** 4P's, Govt, programs, impact to cavities

**SUBMISSION ID:** R04A-CAVITC-0016

**Impact of Psychological Factors Related to English Grammar to the  
Academic Performance of the Selected Senior High School of Lucsuhin  
National High School SY 2018-2019**

Erika Micole Digma

**Abstract**

**INTRODUCTION**

English has been used as a universal language around the world. It has been a medium of communication by many people in different countries. We have seen that many students were not using the English language so that this study is important to read and it will tackle the different factors related to English grammar that they are usually experiencing without knowing it. This research is necessary for them to know the different factors that impact their academic performance.

**METHODS**

Descriptive method was used in this study. The researchers used survey questionnaires and distributed it to the 80 respondents in order to determine the impact of the different psychological factors related to English grammar to the students' academic performance. Simple random sampling was used to select the respondents.

**RESULTS**

The study reveals that the different psychological factors related to English grammar have an impact on the academic performance of the selected Senior High School students. This study determined the four main psychological factors such as lack of self-confidence, shyness, anxiety, and lack of motivation. Lack of self-confidence is the most common factor, with 75%, that the students are exposed to. The second factor is the shyness at 41%, followed by the anxiety at 24%, and lastly, lack of motivation at 20%. The students who are not motivated by the people around them are afraid to speak using the English language, they feel anxious and are afraid to be teased by others. Therefore, shyness occurs and this shyness leads to lack of self-confidence.

**DISCUSSIONS**

Lack of self-confidence is the most common factor that affects the students' academic performance. The reason why is that they are shy to use the English language, and their insufficient vocabulary makes it hard for them to construct English words and sentences easily. The researchers are hoping that this study will serve as a basis for continuing this topic. Future researchers should expand the study to Junior High School students.

**KEYWORDS:** Psychological Factors, English Grammar, Academic Performance

**SUBMISSION ID: R04A-CAVTP-0104**

## **Impact of Social Media on the Human Aspect**

Alfonso Apolonio, Department of Education

### **Abstract**

#### **INTRODUCTION**

Over the past two decades, social media have gained so much growth and fame worldwide. The youth are the leading and most fanatic of these social platforms to the point that they even check social network sites while in class or even at church. These social sites impact the lives of our youth greatly affecting their morals, behavior and even their education. Social media happen to be part of people's lives. In the academy, in the workplace, in TV shows, social media's omnipresence has an impact on our day-to-day routines. Authors Andreas Kaplan and Michael Haenlein identified social media as a cluster of internet-supported applications, made by ideological and technological foundations.

#### **METHODS**

The researcher used a descriptive type of research. It is the most appropriate method to use to answer the specific problems in this study. Furthermore, this method of research involves the collection of the data to test a hypothesis or to answer question covering the current status of the subject of study. With such characteristics, this method of the researcher is the most appropriate to use in the study, most especially that this intends to also include deaf-mute individuals who are incapable of doing some skills.

#### **RESULTS**

The data were obtained from respondents who are the Senior High School students in Urdaneta City National High School by distributing questionnaires. The results revealed that there are a greater number of female respondents who are studying at Urdaneta City National High School (Senior High School). The age of 17 years old students has the highest percentage (52.27%), compared to those at the age of 19 years old and above (5.30%).

#### **DISCUSSIONS**

The study revealed that social media has no impact on Senior High School students in the physical, intellectual, mental, and emotional aspect. Their demographic profile, including sex, age, track/strand, monthly income, do not have any bearing on the number of hours spent on these sites.

**KEYWORDS:** impact, human aspect, social media, senior high school

**SUBMISSION ID: R001-URDANE-0006**

**Impact of Stuttering to Students' Recitation of Selected Humanities and Social Sciences in Lucsuhin National High School S.Y. 2018-2019**

Jerald Bona, Student

**Abstract**

**INTRODUCTION**

Recitation is the best way to ensure if a student truly knows the materials. As a student recite, there are factors that can affect the quality of what he/she is saying, and one of these factors is stuttering. Stuttering is more than just the blocks or repetition in a speech. We have seen that many students stutter while having their recitation, and with that, this study is important because it will tackle the effects of stuttering in students' recitation. This research is necessary because the study will show the causes of stuttering and will provide a solution to the problem being presented.

**METHODS**

Descriptive method was used in this study. The researchers used survey questionnaires and distributed it to the 150 respondents in order to determine the impact of stuttering on students' recitation. Quota sampling was used in selecting the respondents.

**RESULTS**

Findings generated in the study were as follows: In the subjects exposed to in recitation, Entrepreneurship came in first, with 90% (in Grade 11), and Creative Nonfiction with 32% (in Grade 12) ranked first. Seventy-seven percent of the respondents are most exposed to recite during the morning schedule. Seventy-three percent preferred Oral Recitation as the most familiar and most used style of reciting. 81% of the respondents recite sometimes. The most common cause of stuttering in recitation is that the students know what they want to say but have difficulty in saying it. The students' stuttering is also caused by a mental block experienced during recitation.

**DISCUSSIONS**

When the students stutter in recitation, their confidence dwindles and they become anxious about making mistakes again. These students feel afraid of being teased. The researcher recommends obtaining more information and ideas on this topic. This study can serve as to easily understand the topic and the variables presented.

**KEYWORDS:** Stuttering, Student's Recitation, Impact

**SUBMISSION ID: R04A-CAVTP-1735**

## **Impact of Watching Teleserye to the Holistic Development of Teenager Students of Balligui High School**

Dominick C. Sugalen, Balligui High School/Department of Education  
(Adviser: Irene A. Guliquey)

### **Abstract**

#### **INTRODUCTION**

To an extent, teleseryes are healthy remedy because it diverts the attention of the viewers, and in some instances help a person transform itself into something different. Teleserye as a literary work is being used by the youth as their guide to coming up with the day-to-day changes in their social environment. Most telescopes aired in television stations depict present-day realities, the typical way of life, or an introduction on a new culture. It is also observed that in some teleserye, philosophical concepts are introduced g to make something acceptable, despite being objectionable in real life.

#### **METHODS**

The descriptive survey research design was used for this study to provide a quantitative (numeric) description of trends, attitudes, and opinions of a population by studying a sample of a population. Here, an adapted questionnaire was used by the researchers to determine the impact of watching teleseryes on moral, emotional and social aspects and the actions to be done in order to lessen the identified impacts. There were 49 randomly selected respondents in this study.

#### **RESULTS**

Many of the respondents were affected in their moral aspects especially when they attempt to incorporate these values in real life, usually, imitate how the character acts and others. They were affected when the protagonist was being abused or hurt by the antagonists and inspire to become a responsible adult. In their emotional aspects, most of them were affected by the impression that wealthy members of society are wicked and mean. Lastly, such teleserye enables them to communicate with others by convening every morning to talk about the scenes in the previous night, an obvious impact on their social aspects.

#### **DISCUSSIONS**

The results proved that the students are emotional and can be affected by what they watch. Whether such effect is on their emotional, moral or on other aspects of their personality, it should be underscored that adult guidance specifically the parents and teachers, should be provided to ensure that such teleserye will not cause any negative effect to the holistic development of students.

**KEYWORDS:** teleserye, holistic development, emotional, moral

**SUBMISSION ID: R002-QUIRIN-0108**

## **The Implication of Local Market Economy to Araling Panlipunan in Terms of Self-Sufficiency and Student's Productivity**

Joel Gerolia, Dr. Arsenio C. Nicolas NHS

### **Abstract**

#### **INTRODUCTION**

Economics is an important component of Social Sciences at the secondary level of education in the Philippines. This paper aims to capacitate the readiness of Secondary Level Araling Panlipunan students in facing challenges on Araling Panlipunan subject relative to the "Implication of Local Market Economy on Self-Sufficiency and Student Productivity" through a review of the available textbook, modules, and references. Furthermore, all prescribed issuances and policies with regards to basic education, social and economic development have been incorporated. The findings suggest that the paper has not been spared from errors, inconsistencies, and problems that the other studies presumably face in the basic education curriculum in the Philippines

#### **METHODS**

The data were obtained from the surveys completed by Grade 9 students in Araling Panlipunan subject from Dr. Arsenio Nicolas National High School in Calauag, Quezon. This study is anchored with K-12 Curriculum (Enhanced Basic Education Curriculum) which the center of this is the students and their performance academically. The researcher used the qualitative study to evaluate the student's productivity on the local market economy in Araling Panlipunan.

#### **RESULTS**

This study found that in students who took up ARALING PANLIPUNAN local financial market played an important role in their productivity and self-sufficiency in terms of issues addressing local economic growth. More specifically, the effects of local financial market development on economic growth are stronger, therefore, the practical application of this study is a must. This finding defense the fact that local financial market development is significantly more important as a growth-driver in less developed local financial markets than in developed ones, taking into consideration the self-sufficiency and students' productivity.

#### **DISCUSSIONS**

Using data generated from the local government on development indicators between 2011 and 2017 in contemporary econometric estimations, this study found that business and financial market play crucial roles in local economic development, using the practical and theoretical application of Araling Panlipunan in varying magnitude, of local market competition. The study also observes that the local financial market plays very little role in the overall economic development of certain localities/municipalities, in such a way, establishing student competence, self-sufficiency, and students' productivity.

**KEYWORDS:** Local market economy, local economic development, local financial markets, market competition, and market contribution

**SUBMISSION ID: R04A-QUEZON-0136**



**Implications of Social Media in Teaching Understanding Culture,  
Society and Politics among Grade 11 Students of Anselmo A. Sandoval  
Memorial National High School**

Mary Ann Daiz

**Abstract**

**INTRODUCTION**

Among the existing technological activities, students mostly engaged themselves with the use of social media. It is in this sense that some educators used this, as a tool in teaching and learning, to grapple students' attention. Senior High School learners are taught with different subjects primarily Math, Communication, Science, and Social Sciences. Understanding Culture, Society and Politics are one of the core subjects under Social Sciences. There are certain topics which led the students to boredom due to the plethora of facts, deluge of names and dates that they have to remember. This paper intended to determine the implications of social media in teaching Understanding Culture, Society and Politics, a Senior High School subject which can serve as basis in developing other learning activities that can help students reached their goals.

**METHODS**

This action research applied a combination of descriptive and inferential statistics. Data was gathered from 10 Social Science teachers and 90 Senior High School students as respondents who were HUMMS students. The information gathered from the respondents were analyzed and used to make suggestions to supplement the use of new learning activities. The data sources were gathered for over a month. The responses were treated as one though teachers and students may have different perceptions regarding the difficulties and implications of social media in teaching and learning of UCSP subject.

**RESULTS**

The results of this action research indicate that social media enables maximum student engagement in the class discussion. The use of social media in teaching and learning process such as learning activities like video presentation of promoting culture, and e-games pertaining to different law and rights. Recommendations based on the results of the investigation include the continuous use of learning activities, and the continuous implementation of utilizing such kind of intervention in the school, thus, helping students become more active.

**DISCUSSIONS**

Based on the results of the tallied, tabulated and analyzed the data. It turns out that social media are very effective in getting the interest of the students. Recommendations based on the results of the investigation include the continuous use of social media, and the continuous implementation of utilizing such kind of intervention in the school, thus, helping students reached their maximum learning potentials.

**KEYWORDS:** Social Media and Social Networking Site

**SUBMISSION ID: R04A-BATANP-1219**

## **Grade 12 Accountancy, Business and Management Students about the College Course Preference**

Tacluyan, John Patrick  
(Adviser: Dr. Ferdinand Callueng)

### **Abstract**

#### **INTRODUCTION**

Career Guidance was implemented to help and guide senior high school (SHS) students to choose the right career, in line with the current track and strand, after SHS. It was found that the students were still confused about what career path to take in college. Thus, this study tackled the influence of Career Guidance to Accountancy, Business, and Management (ABM) students in choosing a course in higher education.

#### **METHODS**

Following the non-experimental survey method, 50 Grade 12 ABM students in Cavite National High School-SHS were chosen as respondents through purposive sampling. The non-probability purposive sampling was used to choose ABM students that were well informed by the Career Guidance program.

#### **RESULTS**

Based from the assessments of the respondents, results showed that other than the personal factors like sex and desired course, the parents' educational attainment, occupation, and monthly income were significant in choosing a bachelor's degree in college, directly affecting the decision about course selection. The overall data about the Career Guidance program showed that it had a positive influence on students, solving problems like uncertainties, doubts, and the desired course-skill mismatch. The lessons in the program were also helpful in aiding the initial knowledge and perception of students about continuing a bachelor's degree in higher education, giving factual and more accurate information about the path to take after SHS.

#### **DISCUSSIONS**

The implementation of Career Guidance was useful. Students would just depend on their initial understanding of what career to take and would build doubts within. With the execution of the program, it would serve as an instrument to widen the knowledge of students and to be ready for what comes after SHS.

**KEYWORDS:** career guidance, SHS ABM students, course preference

**SUBMISSION ID:** R04A-CAVITC-0019

## **Instructional Content Harmonizing with, Methods, Procedures, and Their Corresponding Teaching Materials (IMPACT)**

Lucia Pagalanan, Department of Education Laguna

### **Abstract**

#### **INTRODUCTION**

This action research aimed at enhancing instructional competencies of school heads, uplifting teachers' instructional preparation and improving learners' achievement.

It has bridged the gap between the learning competencies and learning procedure through harmonizing instructional content, procedures, and teaching the material and utilized monitoring tools. Comments and suggestions were included to validate the localized Daily Lesson Log (DLL).

#### **METHODS**

This research is a two-way process, first is the process of harmonizing instructional content of the localized materials. Pilot testing was conducted in six elementary schools. The second process is evaluating its impact on school performances by means of classroom observation and assessment test.

#### **RESULTS**

Data collected revealed that school heads contribute to the improvement of instruction which is vital in education. These include teachers' competency and school heads' instructional skills as well. It further revealed that its impact enhanced school heads' techniques in supervision, making it systematic and innovative. On the same note, it transformed teachers' philosophical orientation regarding the lesson preparation and in carrying out the learning competencies. Results of the Division Assessment Test during the first periodical test also revealed the significant increase in the mean percentage score. Comparing the school year 2017-2018, with a mean score of 73.00, and 2018-2019 mean score of 78.89, moving toward mastery. There was an increase of 5.89 in MPS.

#### **DISCUSSIONS**

This learning area-initiated research utilized the locally developed materials, the output of Project I-KPAP (Ihanda, Kagamitang Panturo sa Araling Panlipunan), it is a compilation of learning package consists of the daily lesson including the appropriate instructional materials. Furthermore, this paper examined the principals' supervisory roles for improving instructional skills through matching the DLL contents using existing and generated tools in monitoring and evaluation as well as in classroom observation.

Therefore to sustain the project, the following were the recommendations: (1) Continuous harmonization of DLL for 2nd, 3rd, 4th grading period; (2) Conduct a seminar-workshop on harmonizing instructional content in Araling Panlipunan in all grade levels; (3) Finalization of localized DLL including learning packages; and (4) Utilization of localized DLL by all AP teachers in Grades 1 to 6 in all elementary schools in Schools Division Office of Laguna.

**KEYWORDS:** Guru ng Bayan Para sa Bata

**SUBMISSION ID:** R04A-LAGUNA-0164

**ISURE MO (Informative and Systematic Updated Readings for Exceptional Module) and Academic Performance of the Grade 11 Humss Students on Disciplines of Social Science**

Ruth A. Ayudoc, Department of Education

**Abstract**

**INTRODUCTION**

The mission of the Department of Education is to promote the right of every Filipino to quality and complete basic education. The K to 12 curricula also aims to produce 21st-century learners with multiple skills to become competent in this modern world. However, the poor academic performance of the students revealed in Discipline and Ideas in the Social Sciences. It is, therefore, the role of a teacher to make flexible strategies in teaching the lesson to students that will motivate them to study well and help them improve their performance in social science through the use of self-paced modular instruction.

**METHODS**

The use of the module was very flexible to teachers and learners. The study employed an experimental research design. The statistical tools used in the analysis of data were Mean and Standard Deviation, Paired Samples t-Test and Eta-squared. Mean and the standard deviation was used in determining the pre-test and post-test scores of the participants while Paired Samples t-Test was used to determine the significant difference in the scores of participants before and after the implementation of the intervention, ISURE MO Approach. The eta squared was also computed to find out the effect size of the intervention. The participants were the students of Grade 11-1 HUMMS (Control Group) and HUMSS 11-2 (Experimental Group)

**RESULTS**

It was revealed in the mean scores of the participants of the experimental group that there was an increase from pre-test to post-test. The increase of the scores after the implementation of the ISURE MO Approach was significant, it is therefore effective in improving the performance of the participants. As a result, the ISURE MO approach is suggested to be used in teaching Social Sciences.

**DISCUSSIONS**

The results showed the effectiveness of the intervention. The module was introduced to help the participants upgrade their performance. Hence, the researcher recommends that there should be an increase in the utilization of the intervention in Social Science Instruction. The use of the intervention revealed its effectiveness; therefore, it should be adopted as one of the teaching strategies in social science

**KEYWORDS:** ISURE MO approach, the performance of HUMSS students and eta2

**SUBMISSION ID: R002-QUIRIN-0083**

## **K - 12 Based Worktext in Araling Panlipunan for Grade 9 - Students**

Eva Sayaboc, Teacher III

### **Abstract**

#### **INTRODUCTION**

The K - 12 curriculum which aimed to enhance the quality of basic education in the Philippines is a welcomed development in our system of education in the country. The transfer of knowledge to the students is more effective if the learning materials are suited to their needs and abilities. This will only be achieved if the teacher can develop effective instructional materials for the students. With this perspective, the researcher decided to validate a K to 12 based supplemental work text in Araling Panlipunan 9 of Tanza National Comprehensive High School for the school year 2016 - 2017.

#### **METHODS**

This research employed a quantitative design through an experimental approach to proving the effectiveness of the worktext. The descriptive analysis technique was used for deeper validation of the data from teachers, experts, and 50 students from Grade 9. Direct observation and questionnaires were applied to gather the data. Furthermore, t-test was administered to determine the significant correlation between the Pre-test and Post-test Quarterly Assessment results in Araling Panlipunan.

#### **RESULTS**

The obtained t-value of 58.63 from pre-test and post-test results is higher than the critical value of 1.960 at 0.05 level of significance was interpreted as significant. This implies that the supplementary work text instructional material is a great help in teaching Araling Panlipunan for Grade 9. There is a need to produce additional materials in teaching Araling Panlipunan for Grade 9 parallel to the K - 12 curriculum.

#### **DISCUSSIONS**

K - 12 based work text is considered by the teachers and experts as a great help in teaching Araling Panlipunan for Grade 9. From the foregoing findings and conclusions, the following recommendation was drawn: Encourage teachers/administrators to develop similar instructional/learning materials to improve their methods of teaching and the performance of the students as well.

**KEYWORDS:** K - 12 based work text, academic achievements, learning model.

**SUBMISSION ID: R04A-CAVITP-1534**

## **Kapwa Ko, Palangga Ko (My Equal, My Love): People's Perception of Same-Sex Relationship**

Alexander G. Pueblo, La Paz National High School

(Adviser: Michael Luna)

### **Abstract**

#### **INTRODUCTION**

The same-sex relationship has been an important issue in our community and even in the world. The quest for the acceptance of the community is still in pursuit. LGBT was also established to put emphasis on the existence and rights of these individuals. Intuitively, what made the people think or perceive the way these individuals exist in our community is a huge issue at hand. One of the foci of the study is the inclusion of an important but controversial variable: Religion.

#### **METHODS**

The descriptive research method is the most appropriate one to use in this study. The respondents of the study were 30 randomly selected individuals (not a member of LGBT) with different religions from the local community. The researchers conducted an informal interview and a researcher-made questionnaire with guide questions to gather data.

#### **RESULTS**

The results revealed that even with varied religions, their perceptions toward a same-sex relationship based upon the teaching on their respective religions are found to be "slightly positive" as well as on their personal views regardless of their religions. Moreover, there are no differences recorded on their varying perceptions towards a same-sex relationship.

#### **DISCUSSIONS**

The results of the study are enlightening to the people who are a member of the LGBT group and those who go against them. Even though people are very keen on their faith and loyal to their religions, the existence of the same-sex relationship does not bother them as long as individuals live their life fully and happily. Regardless of their faith and the teachings of the church, it was found that personal perceptions of the people towards LGBT were the same with their perceptions with loyalty to their religion as long as they do not make their relationship in a public display. Thus, it is good to note that people nowadays are slowly but significantly accepting this scenario in our community, especially in our country.

**KEYWORDS:** same-sex relationship, LGBT, perception, religion

**SUBMISSION ID: R006-ILOILC-0002**

## **Kultura and Improved Academic Performance on Human Evolution of TVL Students in Maddela Comprehensive High School**

Christine Joy P. Owusu, Department of Education

### **Abstract**

#### **INTRODUCTION**

This study examined the effect of KULTURA, an intervention designed to enhance academic performance on human evolution. The need for improving students' performance on that competency was documented by international researches. The literature is replete with researches that recommend strategies on how to address this concern. However, the intervention used in this study is somewhat different from those because it covers step-by-step classroom procedures from the presentation of the lesson until the evaluation of learning.

#### **METHODS**

A mixed-method design was utilized with two TVL sections- AFA and ICT assigned as experimental (n=30) and control (n=30) groups respectively. The quantitative segment of the study employed a quasi-experimental pre-test/post-test design. The qualitative component included interview data collected after the completion of the pre-test and post-test.

#### **RESULTS**

Data analysis revealed that after the implementation of KULTURA, the students in the experimental group got a mean score in the post-test that is higher than what they got in the pre-test. This indicates that the intervention improved their academic performance. Additionally, based on the independent sample t-test conducted, there was a significant difference in post-test scores for students who have undergone the intervention versus students who did not. On top of that, paired-sample t-test exhibited that there was a significant difference in the mean scores of the experimental group before and after the implementation of the intervention. Furthermore, post-interview data showed that many of the participants recognized that the intervention heightened their interest and increased their content knowledge on human evolution. This demonstrates that through the intervention, the students' perceived interest and perceived gain in content knowledge increased significantly. Lastly, it is worth noting that the effect size of KULTURA was large.

#### **DISCUSSIONS**

The results of this study demonstrate that the implementation of KULTURA in teaching evolution holds promise for increasing academic performance of students and at the same time increases the students' perceived interest and perceived gain in content knowledge. Therefore, the researcher recommends the implementation of KULTURA in teaching human evolution.

**KEYWORDS:** human evolution, student-centered teaching strategy, educational technology

**SUBMISSION ID: R002-QUIRIN-0082**

## **Leadership Qualities in Governance of Southville IV National High School**

Flordemay Marinas, Southville IV National High school

### **Abstract**

#### **INTRODUCTION**

Leadership is an important function of management which helps to maximize efficiency and to achieve organizational goals. Student leadership is a beneficial co-curricular activity where students grasp various opportunities that can help them to build good qualities of a leader. It is found that participating in different activities affect students' interpersonal development, social awareness, cultural awareness, and personal development. It involves development in communication skills, critical thinking skills, management skills, leadership skills, and expand the social network.

This aims to provide appropriate Leadership Training Program of students' leaders exposed to various field of endeavor to hone student's skills and support student organizations reduce youth behavioral problems

#### **METHODS**

This study, therefore, aimed to identify the leadership qualities in the governance of student leaders in Southville IV National High School, Division of Santa Rosa, Laguna. The respondents are those Supreme Student Government Officers and elected classroom officers. It was embedded in the descriptive research design using Pearson  $r$  to determine the relationship of the demographic profile and the leadership qualities in governance. The result was interpreted using the Likert scale. The study used a researcher-made survey questionnaire as the basis of leadership qualities on the governance of the student leaders.

#### **RESULTS**

Qualities in networking skills got the highest grand mean score with 4.45, followed by critical thinking and management skills with both 4.26. Qualities in self-awareness rated 4.24, communication skills got 4.19 and 4.00 for leadership skills qualities. This implies that age, gender, and grade level affect student leadership qualities.

#### **DISCUSSIONS**

The results indicated the leadership qualities in the governance of student leaders in terms of communication, critical thinking, networking, self-awareness, management and leadership skills. The diversity of age and grade level have different skills to be improved through various activities in leadership training programs. Further studies are encouraged to continue building evidence considering students' background and experiences that support the significance of the leadership training program on enhancing student leadership qualities.

**KEYWORDS:** Leadership qualities

**SUBMISSION ID:** R04A-STAROS-0042



## **LOMI (Localized Material and Intervention): An Intervention for Home-Schooling Students**

Romanico B. Macarubbo  
(Adviser: Romanico Macarubbo)

### **Abstract**

#### **INTRODUCTION**

At present, Southville IV National High School Grade 7-Job, there are 15 home-schooling students who need help to improve their academic performance. It was observed by the researcher that most home-schooling students have difficulty in answering the module in English language and some of them translate it in the vernacular which affected their ability to answer all the exercises. Juan A. Moralla, (2001), a Filipino author, cited that module is a self-contained and independent unit of instruction.

#### **METHODS**

The researcher used descriptive research. Using the purposive sampling, one section with the highest number of home-schooling was the respondent of this study. The study will use pre-test and post-test as the basis of the students' performance on the LoMI (Localized Material and Intervention). Also, the researcher will conduct FGD (Focus Group Discussion) to determine the problems encountered in using LoMI.

#### **RESULTS**

The results show an increase of 9.33% from the mean computed during the third grading to the fourth grading period after the pre-test and post-test. The mean increased by 9.33 coming from 17.20 computed on the 3rd grading period and 26.53 when the 4th grading period was finished. Based on the results, LoMI helped the home-schooling students improve their academic performance in Araling Panlipunan

#### **DISCUSSIONS**

The home-schooling can work in their flexible time, according to Lardizabal et al, (2004), students can find the following first. They work at their own pace given the fact that they can read and answer the intervention in a more amiable time, that is why it is very important for the teacher to give interventions that the learner could capably answer.

**KEYWORDS:** The action research is for home-schooling students only.

**SUBMISSION ID: R04A-STAROS-0026**

## **Multiple Graphic Organizers as Tools in Enhancing the Academic Performance of Grade 11 Students in Philippine Politics and Governance**

Luisito Vasquez, Callejon National High School

### **Abstract**

#### **INTRODUCTION**

Teaching social science needs to be revitalized towards helping the learner acquire knowledge and skills in an interactive environment especially nowadays where the curriculum drastically changed over the past years. In addition, it has often been noticed that there is an increasing gap between the promises made in the curriculum and what is happening at the level of a child's perception. Thus, this study sought to determine the effectiveness of multiple graphic organizers as tools in enhancing the academic performance of grade 11 students in Philippine Politics and Governance.

#### **METHODS**

This study utilized experimental-descriptive research and used a teacher-made test as main data gathering instrument. The study was conducted at Callejon National High School during the first quarter of the school year 2018-2019 with 51 Grade 11 respondents chosen purposively. The following statistical tools were used: mean, percentage, standard deviation, Pearson-r, and F-test.

#### **RESULTS**

The study found that the respondents are in the right age in their respective grade. In terms of gender, the female outnumbered male respondents. As to the perception in the use of multiple graphic organizers, all fall under the description of "agree/high extent". Meanwhile, post-test scores revealed that their skill performance got a rating of 85-89%. Furthermore, there is no significant difference in the post-test score in understanding and comprehension skills when tested to  $p < .05$ . Correlation between the perceived use of multiple graphic organizers and students' performance revealed that the concept map graphic organizer and comprehension are significantly related. Likewise, compare and contrast graphic organizer is also significantly related to understanding.

#### **DISCUSSIONS**

The result shows that the utilization of graphic organizers in Philippine Politics and Governance helps the students in organizing materials, recognizing the key concepts, and focusing on the important information in the topic. Through this study, administrators may provide teachers more training and seminars on new and innovative teaching instructions.

**KEYWORDS:** Multiple Graphic Organizer, Academic Performance, Philippine Politics and Governance

**SUBMISSION ID:** R04A-QUEZON-0152

## **Nurturing Experience of Grade 8 Students of Junior the Social Studies Teachers of a Public School**

Marlene Viernes

### **Abstract**

#### **INTRODUCTION**

This study deals with the nurturing experiences which promote social responsibility that is necessary for developing the youths to become responsible citizens, as to create a better future. Teachers today have access to a variety of active teaching-and-learning strategies, including discovery, inquiry, cooperative learning, simulation, group investigation, and projects. These strategies have made it possible to create attractive, engaging and potentially productive learning landscapes. Taken together and thoughtfully applied, they have the potential to remove textbooks and workbooks from their position of dominance in the social studies curriculum.

#### **METHODS**

The researcher utilized a descriptive design of the study and utilized frequency and percentage, weighted mean and ANOVA for the statistical treatment of data.

#### **RESULTS**

In terms of activities indicated in their lesson plans, teacher respondents have nurturing experience which promotes social responsibility and community outreach. Data revealed that they use story time for teachable moments. This includes teaching them how to work in a group and nurture a culture of kindness, giving them new words to say, using cooperative learning games, teaching them to monitor their own progress, and providing a discussion on relevant social issues and human interests. Data revealed that there a significant difference exists in the activities used by the teacher-respondents.

#### **DISCUSSIONS**

The results demonstrate the necessity of providing relevant experiences of the teacher to nurture the experience of the students. Such relevant experiences would be necessary to promote the attitude of the young ones, therefore leading them to be a more socially responsible citizen of the country.

**KEYWORDS:** Nurturing Experience, Junior Social Studies

**SUBMISSION ID: R04A-CAVITC-0099/R04A-CAVITP-1433**

## **Parental Issues and Guidance of the Millennial Parents**

Alondra Mae Menzon, Department of Education

### **Abstract**

#### **INTRODUCTION**

This study determined the parental issues and guidance of the millennial parents in Urdaneta City, Pangasinan. Thirty parents ages 20-35 were requested as respondents in which their profile namely: age sex, civil status, family monthly income, religion, occupation, highest educational attainment and number of children are elicited.

#### **METHODS**

A questionnaire checklist was performed which consisted of two parts namely: (1) Profile of the respondents; and (2) Perception of safety concerns and over-protectiveness, socio-cultural factors, healthy family relationship. Descriptive method of research was employed using a statistical tool which is chi-square.

#### **RESULTS**

The following are the findings of the study, based on the specific problem raised: (1) The millennial parents in Urdaneta City are mostly 30-35 years old (14 out of 30), females (76.76%), most are married, Roman Catholic (63.33%) and employed with monthly income of 10,000 pesos above; (2) The highest educational attainment is high school graduate (50%); (3) The extent of the perception of the parental issues and guidance of the millennial parents shows that the parents are always authoritative in the socio-cultural factors and have the highest average weighted mean (4.57) and often authoritative in the safety concerns and over-protectiveness and has the lowest average weighted mean (3.68); (4) There is a significant difference between the parents' profile variable and the safety concerns and over-protectiveness; and (5) There is a significant relationship between the parents' highest educational attainment and healthy family relationship, and family monthly income to safety concerns and over-protectiveness.

#### **DISCUSSIONS**

The following are the conclusions drawn based on the findings of the study: (1) The millennial parents are dominated by females, who belong to middle adulthood, high school graduates and mostly housekeepers or housewife, and the income of the families belongs to the average line, which can support the basic needs of their family; (2) Parents are intellectually and morally supportive of their children; (3) The parents' support affects the children's behavior; (4) Parents are more aware of the performances and roles of their children to reach the ultimate goal as an individual in the total process of interaction in its society; and (5) The parents discipline and teach their children in terms of good moral. They also take good care and spend more time with them.

**KEYWORDS:** Parental, Issues, Guidance, Millennial, Parents

**SUBMISSION ID: R001-URDANE-0030**

**Perception Towards the Use of Blended Learning among Grade 11  
Humss Students in Olivarez College Tagaytay SY: 2018-2019**

Rolle, Crystalline Nicolette C.  
(Adviser: Efanny Amparo)

**Abstract**

**INTRODUCTION**

Age of digital communication technologies has created digital footprints that have become a part of our daily lives that youths struggle to function without them. Olivarez College took the courage to shift the paradigm of traditional learning in exposing students to digital instructions where they are allowed to explore their interests. Blended learning became a part of the curriculum that provides alternate ways of learning for students. This study aimed to determine the perception of Grade 11 HUMSS students in Olivarez College SY 2018-2019 towards the use of blended learning. The result of the study could be used as a future reference among school administrators and faculty to improve the implementation of blended learning.

**METHODS**

This study utilized a quantitative descriptive research design. The respondents of the study were 343 Grade, 11 HUMSS students of Olivarez College since they represent the majority of students enrolled in the Senior High School Department of Olivarez College. The researcher utilized a researcher-made questionnaire which underwent a test of validity. Frequency, percentage and weighted mean were used to analyze data.

**RESULTS**

Overall, the respondents perceived blended learning as effective. The indicator "blended learning helps students to further their education in the future" got the highest rating of 3.83, interpreted as very effective. Studies claim that blended learning positively impacts student success in learning. An IT institute showed that the impact of implementing blended learning was substantial in raising the success of students with their academic endeavors (Gotovsky, 2017). However, the indicator "students enjoy modern tools such as computer required by blended learning" got the lowest rating of 2.26, interpreted as not effective. This data may imply that even if millennials are perceived as technologically-driven, blended learning should be limited to the usage of a computer.

**DISCUSSIONS**

Improvement of technology in our society today could be an implication that education among schools must conform to the interests of youths for better learning. Blended learning helps the students to further their education for their future, and enhancing their knowledge. However, the results of this research imply that administrators in Olivarez College must improve the implementation of blended learning in line with the millennial type of teenagers, wherein the use of technology is not limited to using computers, but to also make it gratifying for the students who access.

**KEYWORDS:** Blended Learning, online learning, face-to-face, modern tools, self-knowledgeable

**SUBMISSION ID: R04A-CAVITP-0661**

**Perceptions on Biogas Usage among Piggery Owners of San Juan,  
Batangas, 2018-2019**

John Mark D. Ayap, Department of Education Laiya National High School  
(Adviser: Juliet Silang)

**Abstract**

**INTRODUCTION**

Pig farming is one of the businesses San Juanes are accustomed to gain and sustain their financial income. Nevertheless, the industry resulted in various burgeoning environmental concerns due to improper pig waste manure disposal. In line with this, the Biogas as an alternative way to manage pig manures was introduced to lessen dangers this wastes may cause the environment. In this study, researchers implied Biogas to pig farm owners and sought perceptions of its applications in pig farms to properly address the pig waste manure disposal methods.

**METHODS**

The researchers used Qualitative Research design to gather information and perceptions towards the research topic. Descriptive type of research was used in the study to be able to present observations and personal opinions gathered from local pig farm owners. Through Key-informant in-depth interviews (KIIs), information is obtained from pig farmers.

**RESULTS**

The study among five local pig farmers registered as shareholders of Cooperative of Kapisanan ng Maghahayupan sa San Juan (KAMASA), whom one is aged in scale between 41-50 and four are at the range 51 years old – above, shows that they have varied pig farm type and experience. Most of the respondents had small-scale pig farm (21-100 pig heads), while there is one pig farmer who has a backyard pig farm (20 pig heads), and another with a large-scale pig farm (200 and above). Only one of them incorporated Biogas to its pig farm. Biogas is an "anaerobic processing" which gets methane gas within waste produced to lessen the odor it may emit to the environment. This waste manure disposal method aims to manage both liquid and solid wastes produced by pig farms. According to respondents, they are well informed towards the implementation of Biogas in San Juan. Nevertheless, their pig farm type requires a Biogas facility designed for large-scale pig farms that costs Php.100,000.00 at the minimum, so they settle with lagoons and septic tanks. The biogas prevents pig farms to throw the pig wastes to riverbanks, which are connected to other bodies of water such as the ocean, to avoid air and water contamination and pollution.

**DISCUSSIONS**

Despite having a lot of ways on how one can manage their pig wastes, biogas still is a great option. To be able to conserve and help taking good care of the environment, there must be a practice of innovating biogas within pig farms, most especially if they are into producing at least 50 pig heads within their owned pig farms.

**KEYWORDS:** Biogas, key-informant in-depth interview (KIIs), perception, lagoons, manures

**SUBMISSION ID: R04A-BATANP-1278**

## **The Practice of National Competency-Based Teaching Standards and Measures of Professional Growth and Development of Social Studies Teachers: Basis for Enhancing Instruction**

Marianne Zabat

### **Abstract**

#### **INTRODUCTION**

Teachers' teaching practices are commonly measured through specific assessment guides. In this study, as the assessment guide, National Competency-Based Teacher Standards (NCBTS) was used to determine teachers' teaching practices as a basis for enhancing instruction. Teachers' perception of national assessment standards along with practices in academic performance was explored along with teachers' professional growth and development.

#### **METHODS**

The descriptive method of research has been applied using the survey questionnaire as the main instrument of data gathering. One hundred ten (110) teachers in Cluster IV and V of Quezon responded to the questionnaire adapted from the National Competency-Based Teacher Standards (NCBTS) template. The template divided competencies into domains as such teaching practices and was analyzed through each domain. The degree of the demonstration was collected and analyzed. Teachers' competency in measuring academic performance utilized a self-efficacy scale while professional development activities were measured by performance in tasks identified.

#### **RESULTS**

Evidence suggests that the perception of practices to NCBTS as demonstrated by respondents, measurements of academic performance indicated a moderately competent remark while professional development practices manifested a "sometimes" result. The practices, based on an assessment guide, indicated a significant relationship with academic performance measurement with some of the domains as highly evident. In terms of the level of professional growth and development of respondents, only one of the indicators manifested a "frequent" result, while the rest were expressed as "sometimes". Respondents perceived measurement of academic performance on knowledge with a very highly competent remark. Measurement of academic performance indicator on knowledge was highly evident while performance task and quarterly assessment manifested a competent interpretation. Evidence suggests, between NCBTS practices and the measure of professional growth and development of Social Studies Teachers, that a significant relationship between some of the practices of the National Competency-Based Teacher Standards and the level of professional growth and development of Social Studies Teachers existed.

#### **DISCUSSIONS**

Respondents, mostly females, were relatively new and at the prime of teaching while taking up higher studies. Practices in different domains in NCBTS was demonstrated with curriculum development domain indicated as highly demonstrated thus revealing respondents as more than knowledgeable of the NCBTS practices. It also reflects the proficiency of the teachers in its practice but the multitude of tasks required per domain and the amount of time and resources may have caused the lesser execution of the NCBTS practices. On the measurement of academic practices, respondents were more capable in performing knowledge-based practices and exuded a low level of self-efficacy, implying low confidence to combating stress and lack of effort to perform tasks as it did not relate to rewards. The varied and enormous practices on professional growth and development cited in the study seem to show that very few were practiced by respondents. These practices also require expenses, elaborate undertakings and may involve elaborate arrangements, thus, only the common practices were accomplished by the respondents. The correlation of NCBTS practices was contributory with a significant effect on knowledge-based practices, with some significant effect on performance-based practices. It was not found to be significantly affecting quarterly assessment practices. NCBTS correlation on professional growth and development activities showed a significant effect only in short term training, some in school-based training and long-term training. It seems that the variety and extensiveness of the activities required for professional growth and development limited the practice by the respondents.

**KEYWORDS:** Professional Growth, National Competency-Based Teaching Standards, Instruction, Enhancement, Performance

**SUBMISSION ID: R04A-LUCENA-0016**



## **Premarital Sex Issues on Senior High School**

Razel Bacalzo, Department of Education

### **Abstract**

#### **INTRODUCTION**

This study aimed to determine the pre-marital sex issues in senior high school, focused on finding the reasons as to why students ventured into pre-marital sex. It also focused on the relationships of the effects of pre-marital sex in different aspects. Especially, it sought to determine the profile variable of the student-respondents, the perception on pre-marital sex issues in senior high school namely: academic performance, exposure to mass media, parent-child communication, sexual behavior of friends, risk-taking behavior and how it affects their characteristics to be triggered when it comes to sex.

Pre-marital sex issue is about sexual activity that has been done before marriage. Pre-marital sex may lead to depression, a temporary sense of belongingness and fulfillment of sexual desire. In light of the findings of the study, the following conclusions were drawn: (1) There is an average level of performance of students on the academic field; (2) Senior high school students know how to manage their time in studying' and (3) They choose to become a well-rounded person rather than engaging in any trouble.

#### **METHODS**

A multiple method design was used. Using a questionnaire, we conducted a survey in Senior High School students at Urdaneta City National High School to determine the factors regarding premarital sex issues. The study was conducted with data collected through quantitative analysis.

#### **RESULTS**

Nowadays, technologies have a big role for everyone, especially for students. Being 21st-century learners, it is inevitable that students can be influenced by others to do unnecessary things using technologies, such as watching sex movies, sending malicious images and videos, etc. One of the reasons behind this is the circle of friends or the sexual behavior of friends.

#### **DISCUSSIONS**

Friends have a big factor in one's life. Seven out of 10 remarked "seldom", when it talks about the sexual behavior of friends. One factor easily influenced the students is the lack of proper communication with their parents. On this study, when it comes to parent-child communication, resulted that the communication is not strong enough, thus they do not receive proper guidance and protection that leads the students to depend on their friends.

**KEYWORDS:** Academic Performance, Exposure to Mass Media, Parent-child Communication, Sexual Behavior of Friends, Risk-Taking Behavior

**SUBMISSION ID: R001-URDANE-0004**

## **Preschoolers' Capability to Delay Gratification Based on the Triarchic Theory of Intelligence**

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(Adviser: Jed Tolentino)

### **Abstract**

#### **INTRODUCTION**

Along with great inventions for accessibility and satisfaction, people tend to rely on effortless and instantaneous works and neglect the value of waiting. Children nowadays are having troubles delaying gratification since their minds are focused on the needs and desires at the present moment. This study seeks to determine the significant relationship between delayed gratification and the triarchic intelligence of children to prove that delayed gratification plays a big role in people's lives. The triarchic theory of intelligence is not just described as a single ability, it is categorized into three different aspects, the Componential, Experiential and Practical Aspects.

#### **METHODS**

The study used a correlational type of quantitative research and self-structured questionnaires as instruments of gathering data in which it was verified and approved. These self-structured questionnaires are situational and have undergone a reliability test. The main subjects of the study were the Kinder II students and the considered respondents were the parents since the children are incapable of answering the items stated in the questionnaire. The collected data were analyzed by statistical techniques including Pearson  $r$ , weighted mean, P-values, percentages, and frequency.

#### **RESULTS**

The data present that in terms of delaying gratification, the reality principle got the higher composite mean than the pleasure principle. It means that most of the children have the capability to delay their gratification more than to satisfy their desires. Meanwhile, in terms of triarchic intelligence, the practical aspect was strongly agreed upon while the componential and experiential aspect was agreed as verbal interpretations. This shows that majority of the children has the ability to adapt in real life situations. It was also found that both pleasure and reality principle have a significant relationship with the componential and experiential aspects. However, only the reality principle acquired a significant relationship with the practical aspect. It indicates that delaying gratification helps the children to use their learning in order to cope up with different life situations.

#### **DISCUSSIONS**

The results exposed the importance of the capability to delay gratification in children's lives specifically their triarchic intelligence. Parents and teachers must understand the concept of delayed gratification. In this way, they would be able to acknowledge and improve the behavior of the children.

**KEYWORDS:** Delayed Gratification, Triarchic Theory of Intelligence, Pleasure Principle, Reality Principle

**SUBMISSION ID: R04A-BATANC-0178**

**Problems Encountered by Grade 12 Student-Researchers of Balligui High School, School Year 2018-2019**

Zephaniah G. Somera, Balligui High School/Department of Education  
(Adviser: Gemslee Pasion)

**Abstract**

**INTRODUCTION**

Practical Research I and Practical Research II, are tedious subjects to deal with. However, students cannot get away from this because these are academic subjects needed to be completed. In conducting research, researchers must be cautious. They must allocate plenty of time to complete each stage of the activity. They must be hard-working and must work in the library, add more hours or weeks before the scheduled deadline because there are some things that take more time than what is planned, and there are stages in research works that are more difficult than what the researchers expect. In short, there are unexpected difficulties and problems that may lead to academic failures. Hence, this study is conducted to investigate the most difficult problems that the Grade-12 senior high school student- researchers of Balligui High School encountered during the first semester of this school year.

**METHODS**

A descriptive survey was used and respondents were thirty (39) grade 12 students of Balligui High School for the school year 2018-2019. It is composed of 15 Home Economics and 24 GAS students. Stratified random sampling was employed in determining the number of participants. The main tool used in gathering data is through the use questionnaire adapted from the result of the study of Bocar (2008), entitled, "Difficulties Encountered by the Student-Researchers and the Effect on their Research Output".

**RESULTS**

Majority of the respondents are 17 years old and most of them are female. Thirty-eight percent of the respondents belong to Home Economics and 61.53% belongs to General Academic Strand. The extent of the problems encountered by General Academic strand is difficult, with a weighted mean of 3.21, where construction of interpretation, analysis, finding, conclusion, and recommendation are the most difficult problems they encountered as well as a limited period allotment. Meanwhile, the extent of the problems encountered by Home Economics students is also difficult, with a weighted mean of 2.54, and stress management and financial problem is the most difficult problem they encountered in dealing with their research.

**DISCUSSIONS**

The results of the study reveal the need to capacitate student-researchers in making their research outputs specifically on interpretation and analysis of data. The study also demonstrates the need to involve and exposed student-researchers in seminars and conference and encourage them to visit college libraries and e-libraries to widen their horizon in research through reading and writing.

**KEYWORDS:** research, strand, problems, capacitate, student-researchers

**SUBMISSION ID: R002-QUIRIN-0106**

## **Problems Encountered in the Employability of Senior High School: A Competency Analysis**

Riza Toralba, Department of Education

### **Abstract**

#### **INTRODUCTION**

This study is conducted to know the current problems encountered in the employability of SHS. Specifically, employability has a great impact on the students in Urdaneta City National High School. This study made use of competency analysis. Employability is a set of achievements, understandings and personal attributes that make an individual more likely to gain employment and be successful in their chosen occupations. The capacity to move self-sufficiently within the labor market to realize potential through sustainable employment “| for the individual it depends on the knowledge, skills, and attributes they possess, the way they use those assets and present them to employers.

#### **METHODS**

The researchers used a descriptive type of research. It is the most appropriate method to use to answer the specific problems in the study. Furthermore, this method of research involves the collection of data to test a hypothesis or to answer question covering the current status of the subject of study. With such characteristics, this research method is most appropriate to use in this study since it intends to determine the extent of problems encountered in the employability of SHS students.

#### **RESULTS**

Depending on how frequent the students practice their different abilities will affect enhancing talent on how they employ themselves. All the respondents answer the questions as provided by the researcher with the assistance of the teachers. The level of frequency doing their tasks improved their different skills in learning and enhancing themselves. Students who are infrequently doing their tasks are unlikely to enter the world of employment.

#### **DISCUSSIONS**

There is a greater number of female respondents who are good in the technical skills in Urdaneta City National High School (SHS). Students at the age of 17 years old have the highest percentage (41.67%) compared to the (1.67%) on the age of 16 years and below. The age of 18 years old has a percentage of 16.67% while 16 years and below is 40.00%.

**KEYWORDS:** employability, senior high school students, problems encountered, competency analysis

**SUBMISSION ID: R001-URDANE-0003**

## **Religious Affiliation and Artificial Family Planning Methods Used by Tacurongnon Couple**

Christine B. Osorio

### **Abstract**

#### **INTRODUCTION**

Nowadays, overpopulation is one of the ongoing problems in the Philippines. As a Catholic country, Filipinos proclaimed that they should not control the birth, and family should be proud of having more than two children. But World Health Organization organized a study which emphasized that families should plan and think about their finance and health, especially for the woman and their children. In the past 50 years, family planning (FP) programs have been heavily promoted across the developing world as a means to reduce fertility rates and promote economic development.

#### **METHODS**

The study utilized the descriptive method using the quantitative approach in gathering information about the present condition. The researcher designed the questionnaire for the data gathering process to get quantitative data. The respondents of the study will be couples (married or not) who practice birth control such as pills, condoms and other methods that prevent pregnancy of a woman, provided by the Department of Health, within 20 barangays in Tacurong City. The given data will be organized and evaluated to establish strategies for maintaining cleanliness.

#### **RESULTS**

Results revealed that most of the husbands, comprising 37.5% of the respondents, are aged between 41-45 years old. The lowest percentile in the category of a wife is 0%, aged 16-19 years old. Most of the couples practice the Roman Catholic faith, accounting for 40% of the overall result. While the lowest religion in terms of participants is Islam, which is composed of 2.5% of the respondents. In terms of the different artificial methods used by Tacurongnon couple, it was identified that Hormonal Contraception (Pills, DPI) is the main birth control method, which is used by 42.5 % of the couples. The least used method is permanent contraception (vasectomy, tubal ligation) which were used by only 5% of the respondents. Lastly, results show that the couple's perception of religion affects their perception of family planning. The table includes 10 questions and the highest sum among them which has a total sum of 98.00 while the lowest which have 86.00.

#### **DISCUSSIONS**

Based on the result tabulated and calculated scientifically, the researchers conclude that religious affiliation of each couple in Tacurong City who undergo Family Planning vary and affect their way of living and how they plan for the future of their Family.

**KEYWORDS:** Religious Affiliation, Artificial Family Planning Methods

**SUBMISSION ID: R012-TACURO-0008**

## **Revisiting Students' Home-Based Values Formation as Basis for a Senior High School Students Values Formation Program**

Fabie Pasilan

### **Abstract**

#### **INTRODUCTION**

Fundamentally, the family is responsible for the formation of values of a child. Whatever value a child learned at home is ultimately the same value that he or she manifests in school. Good values like love, acceptance, and trust are learned and used as tools for the child to establish a good social relationship among his or her peers and classmates. Thus, early childhood experiences are essential in trying to trace the values that the child acquired. This concept was emphasized by Roe (1956), in her Need Theory. Brown (1995) in his Values-Based Holistic Model affirmed that values are acquired as a result of value-laden formation from the environment interacting with the inherited characteristics of an individual.

The 21st-century learners, however, seemingly deviated from this conventional value formation system. Teachers wonder how and why this scenario happened considering the fact that Filipino families are very much focused on the children's values formation at home. Hence, this study endeavors to revisit Students' Home-based Values Formation as a Basis for a Senior High School Students Values Formation Program.

#### **METHODS**

This study utilized the descriptive method of research specifically the survey type. Furthermore, it used quantitative designs. Data were gathered through a 15-item teacher-made questionnaire and semi-structured interviews. Proportionate Stratified Random Sampling was utilized. The respondents were randomly selected from 4 sections of grade 12 students of Sinalhan Senior High School, namely, CSS-Jacinto 1 (24 students), ICT Animation-Luna (4 students), Automotive Servicing- Rizal (73 students), and SMAW-Bonifacio (34 students). Total population is 135 students, of which 101 respondents were taken using the Slovin's formula at 5% margin of error.

#### **RESULTS**

In terms of the respondents' demographic profile, out of the 101 students 51/101 (50.49%) were of age group 13-20 years old, 27/101 (26.73%) age group 28-35, and 23/101 (22.77%) age group 21-27 years old. Gathered data also revealed that 76/101 (75.25%) were categorized in the income bracket 5,000 a month and below, 10/101 (9.90%) to 6,000-10,000, 7/101 (6.93%) to 11,000-15,000, 5/101 (4.95%) to 16,000-20,000 and 3/101 (2.97%) in 21,000 above income bracket. The null hypothesis was rejected since a significant difference between the observations of teachers and students from the personal discipline, social relationship, and respect was found.

#### **DISCUSSIONS**

Based on the foregoing findings on the observation of teachers and students on the variables such as personal discipline, social relationship, and respect, this study concluded that respondents have strongly agreed that there is a need for the establishment of the values formation program for senior high school students.

**KEYWORDS:** values formation, home-based values, values formation program

**SUBMISSION ID: R04A-STAROS-0054**

**Roles and Responsibility Awareness of Sangguniang Kabataan Officials  
in the City of Batangas**

Danicka Floney T. Ebor, Renz Gerard C. Agtay, & Mechaille Erica D.  
Abainza

(Adviser: Lander Joseph Ilagan)

**Abstract**

**INTRODUCTION**

Sangguniang Kabataan trains future leaders for governance. In this study, the researchers intend to assess the awareness of Sangguniang Kabataan officials towards their roles and responsibilities.

**METHODS**

A descriptive study was used. The researchers designed the questionnaire, validated by a technical expert, and was administered to SK officials selected through purposive random sampling. Data were analyzed using descriptive statistics.

**RESULTS**

Results show that SK officials know their roles and responsibilities; administrative, interpersonal, and conceptual skills are needed for its implementation. The Comprehensive Barangay Youth Development Plan (CBYDP) serves as its basis in implementing policies and spearheading programs. Convening for regular sessions helps in the actualization of the CDP.

**DISCUSSIONS**

Results indicate that the SK follows a comprehensive plan. SK officials are prepared for public service.

**KEYWORDS:** Sangguniang Kabataan, responsibility, leadership

**SUBMISSION ID: R04A-BATANC-0464**

## **Self-Determinants on the Workplace of Integrated School Teachers in Batangas State University**

Arvin Lemuel C. Freo, Johnsen M. Faraon, Carl Godwin P. Garcia, &  
Cassandra Mei A. Gega, Batangas State University  
(Adviser: Jed Tolentino)

### **Abstract**

#### **INTRODUCTION**

Existing evidence reveals that teachers continue to face job problems, thereby affecting their job satisfaction level. This study used the term "self-determinants" to represent the intrinsic and extrinsic factors, anchored on Self-Determination Theory to give a concrete definition. The study also explores the sub-factors of intrinsic and extrinsic stated from the Two-Factor Theory of Frederick Herzberg and how these self-determinants differs in association to the demographic profile of the Integrated School teachers of Batangas State University. This study serves as a bridge for more motivated teachers doing their job.

#### **METHODS**

A descriptive survey method was used by the researchers as their guide in conducting the research. Seventy-six teachers from the department answered the questionnaire designed by the researchers. The questionnaire was validated by the panel members and tested with the Cronbach's alpha coefficient; it has been remarked as excellently made. Different statistical techniques were used to analyze the data such as Spearman's Rank Correlation in determining the relationship between the intrinsic and extrinsic factors, while Chi-Square Test was used to know if there is any significant association between the demographic profiles of the respondents and the self-determinants.

#### **RESULTS**

Data gathered by the researchers reveal that teachers in Integrated School are mostly young females, married, and with 1-5 years of teaching experience from the high school department. Among the intrinsic sub-factors, creating a good relationship with students in terms of advancement affects the job satisfaction level of teachers, while the interpersonal relationship in school got the highest weighted mean among the extrinsic sub-factors. Results also proclaim that intrinsic factors greatly influence the teachers than the extrinsic factors, also having a moderate positive relationship and are respectively significant to each other. It also indicates that self-determinants are associated with the profile of the respondents indicating their job satisfaction level.

#### **DISCUSSIONS**

Teachers were advised to be knowledgeable about the self-determinants through observing themselves on their workplace. Academic institutions were also recommended to be mindful to these factors and the differences of the teachers in achieving their goal of good service. Salary and educational attainment of the respondents can be considered by the future researchers, as there can be changes observed, different from the present study.

**KEYWORDS:** job satisfaction, self-determinants, teachers

**SUBMISSION ID: R04A-BATANC-0176**



## **Serp Practices in Different Municipalities of Laguna: An Instructional Tool**

Jerome Monfero, Department of Education Liliw National High School

### **Abstract**

#### **INTRODUCTION**

In the 21st-century people experienced and faced innovation in technologies and modernization in almost all aspects of human life. Thus, this is part of their everyday life. The preservation and conservation of different cultural practices are really important. Different studies and researches were conducted to find ways on how to preserve the varieties of cultural practices that the Filipinos have. All of its suggested ways were proven effective but further studies on how to preserve those practices need to address the value of changing society from the traditional to more modernize culture.

#### **METHODS**

The research design used was a descriptive method. The primary aim of employing the method was to determine the acceptability level of the compilation of social, economic, religious, and political practices in the third district of Laguna as an instructional tool in teaching selected topics in Social Studies. The evaluators of the compilation of social, economic, religious and political practices in the third district of Laguna were Social Studies teachers, Head Teachers/Coordinators, Master Teachers and Principals in the public secondary schools in the Third District of Laguna.

#### **RESULTS**

The status of the six (6) municipalities and one (1) city in the third district of Laguna in terms of social, economic, religious, and political practices were marked as always observed.

The mean level of the acceptability of the compilation of social, economic, religious and political practices in the third district of Laguna in terms of validity, usability, adaptability, and aesthetic value were evidently acceptable.

There is no significant difference between the evaluation of the Social Studies teachers and experts in the characteristics of the compilation of social, economic, religious, and political practices in the third district of Laguna in terms of validity, adaptability, and aesthetic value and there is a significant difference in terms usability.

#### **DISCUSSIONS**

The findings of the study were: (1) the developed instructional tool may be used by teachers and students as additional supplement to their books and modules; (2) The school administrators may support the reproduction of the developed supplementary material; (3) Social Studies teachers are encouraged to attend seminars and training program on developing similar supplementary instructional tool; and (4) Further validation studies could be done by other researchers to test the effectiveness of the developed instructional tool.

**KEYWORDS:** Local Culture, Social, Economic, Religious, Political Practices, Instructional Tool

**SUBMISSION ID: R04A-LAGUNA-0205**

## **Sexuality, Relationship and Factors Leading to Teenage Pregnancy among Students of Gpnhs**

Lynn Marie Simporios, Teacher I

### **Abstract**

#### **INTRODUCTION**

World Health Organization defines Teenage Pregnancy as "any pregnancy from a girl who is 10-19 years of age", the age being defined as her age at the time the baby is born. Often the terms "Teenage pregnancy" and "Adolescent pregnancy" are used as synonyms (Gazala, et. al 2013). Alarmed over the number of cases of teen pregnancies in Glan - Padidu National High School, a good school program for teenage pregnancy prevention must be established. Thus, this study aimed to serve as a source for the creation of an effective program to at least lessen the growth of statistics if not totally eliminate pre-marital sex among students at a very early stage.

#### **METHODS**

The researcher used descriptive-quantitative research design. The respondents of the study were nine (9) students who were identified using purposive random sampling method. The respondent's profile and factors leading to teenage pregnancy were determined through a survey. This study utilized a survey questionnaire. These questionnaires were adapted from the study of Zapanta (2014). When everything was set, the researcher administered the questionnaire one by one in their respective homes to secure confidentiality. The data gathered were treated statistically with the use of frequency count and percentage.

#### **RESULTS**

The data showed that respondents' parents were mostly at the elementary level in their educational attainment, earning Php 5,000 below monthly and most were self-employed. As to the context of sexuality and relationships, most of the respondents engaged in sex when they were 14-16 years old, with partners 20 years old and above. Because of physical attraction, expression of love, and curiosity they engaged in such activity. Various factors lead students to get involved in premarital sex. Environmental factors were also in play, this includes lack of parental supervision; exposure to media such as TV shows, movies, and peer pressure; and emotional factors such as the satisfaction of the sexual needs.

#### **DISCUSSIONS**

Based on the results above, pregnancy rates are higher among teenagers who live in a low socioeconomic background. It is also striking that peer pressure is prevalent among their peers and curiosity is real in engaging premarital sex. It is recommended that school, community, and families must work hand-in-hand to shield their teenagers against these phenomena. Increases in both health and social problems are products of uncontrollable sex among teenagers. Mainly because the youth cannot control their emotional feelings, they rush into untimely sex, in the belief that the act will be undetected. Schools could try interventions to get a better point across teens about how a child will affect their lives.

**KEYWORDS:** Sexuality, Relationship, Teenage Pregnancy, Glan - Padidu National High School

**SUBMISSION ID: R012-SARANG-0002**

## **Social Analysis on Media Influences: Critical Analysis on False Information**

Christian Paraan, Department of Education

### **Abstract**

#### **INTRODUCTION**

Information literacy researchers regularly generate excellent, evidence-based guidelines in verifying the credibility of the information. These guidelines that are implemented often fail. In the study, the researcher saw different ways of spreading untrue information. In this study, the researcher focused on determining the cause of false information through media influences that were strongly described in evidence and theory.

#### **METHODS**

A descriptive type of research design was used. Using a simple random sampling scheme, the researcher conducted a survey with academic strand students. One hundred ninety-two Grade 12 students enrolled in the academic track responded to a survey- questionnaire checklist. Further, this process of research involves the compilation of data in order to examine assumption or to answer question covering the common condition of the subject of study, with data collected through quantitative analysis of the extent of social issues on media influences and critical analysis on false information.

#### **RESULTS**

Many students who participated in the survey perceived notable problems with the assessment tools, which stem mainly from the profile of the respondents and the extent of social issues on media influences. In some instances, where media producers sound highly involved, students expressed that they can be a good contributor and sharer of false information and there is a relationship across the respondents' profile and the dependent variable. Responsible media use was determined on the respondent was highest. Verification of information's credibility was seen high in all areas.

#### **DISCUSSIONS**

The results reveal the need for seminar involvement in any media and information literacy in order to have a society free of false information. Mitigation of false information will fail when mentors do not take an active role in the effective responsible use of media. Information literacy was a constant factor in the success of innovation.

**KEYWORDS:** false information, information literacy, responsible media use

**SUBMISSION ID: R001-URDANE-0013**

**Strengthened School-Based Implementation Program to Address  
Societal Problems of Agustin Abadilla Elementary School**

Edelberto Jr. Sanchez, Department of Education

**Abstract**

**INTRODUCTION**

School as an institution of learning is beset my multifarious problems. Foremost are problems confronting the learning and welfare of school-learners.

Though the primary duty of the school is to teach learners the knowledge and skills necessary in the development of their mental being, still, there are a lot of contributory problems that affect their academic wellbeing.

The school needs to attend into other problems such as health and social services and these pressures the school into creating solutions to solve these.

**METHODS**

The research involves answering the statement of the problem, the venue where the study is to be conducted, the description of who will be the participants, the instrument crafted for the study, data gathering procedures in the collection of raw data to be put under the statistical treatment of data. The participants or respondents of the study are the teachers, parent, and pupils in Agustin Abadilla Elementary School.

**RESULTS**

All of the indicators have a higher mean and lower standard deviation. It shows that these indicators are the ways on how the school addresses the school societal problems. Overall, it has an average of 3.53 and SD of .91 indicative of the good ways in addressing societal problems by the school.

Shows the assessment of pupils on how the school address societal problems.

**DISCUSSIONS**

The result of the assessment of the teacher, parent and pupil respondents reveals that the computed value of 5.76 is less than the tabular value of 6.78, so then the decision is to accept the null hypothesis.

**KEYWORDS:** Strengthen School-Based Implementation Program to Addressed Societal Problems, Descriptive, Comparative, Correlational design. Teachers, Pupils, Parents of Agustin Abadilla Elementary School

**SUBMISSION ID: R04A-CAVITP-1324**

## **Teacher-Made E-Learning Module in Social Studies 10**

Christopher Castillo, Department of Education

### **Abstract**

#### **INTRODUCTION**

Today, there are 21st-century teacher facilitators and 21st-century learners who are using the current trends of learning which is more on computer-based interactive modules and materials. This process creates opportunities that enable students to promote their knowledge and skills for the purpose in everyday life activities. Students in this new curriculum are expected to be globally aware and able to use resources that exist not only inside the school but also outside the school campus. Thus, this study focused on the effectiveness of the utilization of e-learning modules and instructional materials.

#### **METHODS**

The respondents of the study were social Science teachers and learners. The questionnaire was used in collecting the data, then it was tallied and tabulated. Weighted mean and standard deviation were used to determine the components of the developed e-learning module in terms of the objectives, learning content, and materials, significance, interest, validity, feasibility and adaptation. The Pearson Product Moment Coefficient of Correlation was used to identify the relationship between two variables: the components and criteria of the e-learning module to the developed or made e-learning modules of the Social Studies teachers in two units.

#### **RESULTS**

The respondents agreed that the level of components of e-Learning were objectives, learning content, and materials. Then, the level of criteria in the evaluation of e-Learning Module was also acceptable which pertains to significance, interest, validity, feasibility, and adaptation. Hence, it is marked that there is a significant relationship between the components of e-learning to the criteria in the evaluation of e- module and developed e-learning module.

However, it is noted in the study that there is no significant relationship between the developed e-learning module and criteria on the evaluation of the module.

#### **DISCUSSIONS**

The results of the findings revealed that there were different components of e-learning which were evaluated through different criteria. These were significant factors that should be considered in developing instructional programs and interventions that suit the needs of 21st-century learners. Therefore, the developed e-learning modules may be utilized by the Social Science teachers, this may help them to be more updated on the current trends of education especially pertaining to the 21st-century learners.

**KEYWORDS:** e-learning

**SUBMISSION ID: R04A-LAGUNA-0206**

## **Teacher's Implementation of Unescap's Eight Good Governance Principles Inside the Classroom of Caluangan National High School**

April Mae Carvajal & Aizalyn M. Totanes

### **Abstract**

#### **INTRODUCTION**

Governance matters and the way a mentor governs affects the outcome of its constituents. Thus, the governance of the teachers inside the classroom greatly affects the student's performance. In this sense, the researchers conducted a study which sought to know how Caluangan National High School teachers practice the art of good governance in the classroom and the underlying issues affect their awareness and practice of it.

#### **METHODS**

The study was conducted under a quantitative research method which used a survey method. Five-point Likert Scale survey form and even open-ended questions were given to gather the needed data. The statistical test used was the measure of central tendency wherein the mean score of the responses from each statement was measured and interpreted according to their equivalent verbal interpretation. The answers to the open-ended questions were listed and categorized according to the number of responses.

#### **RESULTS**

The gathered data showed that the good governance principles created by UNESCAP were being practiced by the Caluangan National High School teachers most of the time as shown in Table 2-9. In terms of ranking, accountability ranked as the most practiced good governance principle with a mean score of 4.56 while the principle of responsiveness is the least with a mean score of 4.24. In the aspect of open-ended questions, Table 11 showed that the principle of transparency got the greatest number of responses from the respondents when they are asked about the common form of good governance they are practicing. This meant that the most common way of practicing good governance used by teachers in Caluangan National High School is by informing the students. On the other hand, Table 12 showed that the statement "Student's discipline" under the category of effectivity and efficiency was the most common practice of the respondents. Based on this, the researchers concluded that Student's discipline was still a factor in the success of good governance especially on the principle of effectivity and efficiency.

#### **DISCUSSIONS**

The result of the study showed that though few teachers were unfamiliar with the 8 good governance principles of UNESCAP, they still practice these principles as manifested in the data. Proper information dissemination still served as the most common form of good governance. However, there are still issues like students' lack of discipline which hampers to the ultimate practice of these eight principles.

**KEYWORDS:** Good Governance, UNESCAP's Eight Good Governance Principle

**SUBMISSION ID: R04A-CAVITP-1564**

## **Technological Attachment of the Students: A Case Study**

Jenny Ann Lebaste, Department of Education

### **Abstract**

#### **INTRODUCTION**

This study is primarily concerned with determining the level of technological attachments of students in Urdaneta City National High School (SHS) Grade 11 ICT (TVL Track). Specifically, it determined the profile of the students to consider with their age, sex, gadgets available and family monthly income; the student's poor lifestyle practices along of family, studies and health.

#### **METHODS**

The subjects of the study consisted of thirty (30) respondents of Grade 11 TVL-ICT students. The delineatory inquiry method was used in the study. Furthermore, the data-crowd implement was a questionnaire checklist.

Several statistical use habit as the frequency number and backwardation arrangement was a necessity to determine the outline of the respondents. To shape the technological attachment of students, the WM was custom. To decide the remarkable divergent of the respondents' extended of cognition across their profile, this was analyzed through paired T-test.

#### **RESULTS**

Based on the inference and findings, the researchers arrived at the business conclusions: the respondents of Urdaneta City National High School Grade 11 TVL-ICT Students were composed mostly of people aged 16, female & changeable phones. The respondents' response was sometimes observed which slightly affected them in terms of kindred, studies and soundness;

#### **DISCUSSIONS**

There was significant diversity on the respondents' answer in the technological attachment of students in the limit of epoch, gadgets usable, and family income. On the other side, it cannot convey that in the limit of gender is not significantly diverse.

**KEYWORDS:** Technological Attachment, Addiction

**SUBMISSION ID: R001-URDANE-0010**

**The Academic Behavior of Pantawid Pamilyang Pilipino Program (4Ps)  
Student Beneficiaries of Maddela Comprehensive Senior High School**

Von Jovi Pablo, Department of Education  
(Adviser: Shaila Tanglod)

**Abstract**

**INTRODUCTION**

The Philippine government came up with its local version of Conditional Cash Transfer which is commonly known as Pantawid Pamilyang Pilipino Program (4Ps) or Pantawid Pamilya that provide cash grants with conditions to poorest Filipinos. One of the conditions of the Pantawid Pamilya Pilipino Program (4Ps) is to enroll the school-aged children and keep at least 85% of school year attendance. It is very helpful in our community because many poor families are in need of better health and better education. With this condition, children can be more productive citizens in the near future and will able to break away from the cycle of poverty.

**METHODS**

The academic behavior of Pantawid Pamilyang Pilipino Program (4Ps) Senior High School Student Beneficiaries of Maddela Comprehensive High School was determined through a descriptive survey method. A survey questionnaire which is composed of two parts namely demographic profile and academic behavior was administered to the eighty (80) 4Ps Senior High School beneficiaries. All 4Ps beneficiaries were considered as respondents. Data were analyzed through the help of statistical package for social sciences (SPSS 16), student version.

**RESULTS**

The 80 4Ps Senior High School beneficiaries were dominated by 43 males (53.75%). The results showed that the participants always manifested the academic behavior indicators in terms of attendance and school financial obligations and often manifested academic behavior indicators in terms of academic requirements. Furthermore, there was no significant difference in the academic behavior of the participants in attendance, academic requirements and financial obligations when grouped according to sex.

**DISCUSSIONS**

The results manifested that the 4Ps program is effective in increasing school attendance, compliance with school requirements and school financial obligations among the student beneficiaries.

Moreover, the male and female 4Ps beneficiaries do not differ significantly in their academic behavior.

**KEYWORDS:** Academic Behavior, Attendance, Financial Obligations and Requirements

**SUBMISSION ID: R002-QUIRIN-0058**



## **The Effects of Computer - Aided Instructional Materials for Grade 8 – Students**

Roderick Salazar, Teacher III

### **Abstract**

#### **INTRODUCTION**

This study aimed to investigate the effectiveness of Computer Aided instructional Material for Grade 8 - students of Tanza National Comprehensive High School Daang Amaya II, Tanza, Cavite for the school year 2016- 2017. It employed mixed method designs in which both qualitative and quantitative research were used in the study. Interview, direct observation, and questionnaires were used to gather the qualitative data were pre-test and post-test or quasi-experimental design was applied for the quantitative portion of the data.

#### **METHODS**

A three-week instructional phase was conducted in a selected class to determine the pre-test and post-test scores of the respondents after the teacher has utilized the computer aided instructions in Teaching the subject Grade Eight (8) students. Weighted mean, Mean Percentile Score (MPS) and correlated t-test were used for the statistical analysis of the data and was facilitated by the Paleontological Statistical software version 3.14.

#### **RESULTS**

The results revealed that there is a significant difference ( $p < 0.05$ ) between the pre-test and post-test scores of the respondents. This implies that there is an improvement in the learning achievement of the learners when they were exposed to teaching using the computer. The researcher proposed a learning model to be used in teaching Araling Panlipunan to make it modernized and exciting to learners.

#### **DISCUSSIONS**

Laptop, projector, lapel, phone, and speaker are the perfect gadgets and devices to facilitate Computer Aided learning. Laptop cell phone and projector are aids for visual presentation of the content. Speaker and lapel, on the other hand, enhance the audio. These materials are indeed helpful and they truly cater to the needs of the students of varied intelligence.

**KEYWORDS:** computer-aided education, academic performance, learning model.

**SUBMISSION ID: R04A-CAVITC-0079/R04A-CAVITP-1527/R04A-CAVITP-1528**

**The Effects of Media to the Social Awareness of the Students of Gen.  
Pantaleon Garcia Senior High School S.Y. 2018 - 2019**

Janmel T. Usman, Gen. Pantaleon Garcia Senior High School  
(Adviser: Maria Theresa Landoy)

**Abstract**

**INTRODUCTION**

In the modern era, media is gradually growing and developing. It continuously spreads to different forms, expanding its ability to deliver timely news to the people. Media has several effects on the youth, both positive and negative. Due to the amount of impact and influence mainstream media has nowadays, it is being utilized by the youth in a wide array of purposes. In this study, the researchers explored the effects of media on the social awareness of the students.

**METHODS**

The method used in this research is descriptive research design and the utilization of quantitative data. By using Slovin's Formula and Convenience Sampling Technique, a sample of 253 participants from the Grade 11 and Grade 12 students of Gen. Pantaleon Garcia Senior High School responded to the prepared survey questionnaires.

**RESULTS**

Research findings show that media affects a student's social awareness in different ways. But there are general effects which are social awareness, social perception, and social participation. The latter two are natural ripples of social awareness, showing that becoming socially aware grants a person a positive social perception and active social participation. Media, in the simplest explanation, helps make someone aware of events in the society thus making them socially aware, socially active, and have a positive social perception. Ultimately, the media's effects are not limited to the person using the media per se. Media has a huge potential to impact a person positively. This will make a person become conscious of what's happening in society, urging him/her to act accordingly to what is needed by society to improve.

**DISCUSSIONS**

The results call for a need for more systematic and prudent interventions in order for media to be more beneficial to students. The amount of impact and relevance media has these days will not be properly utilized if the different sectors, institutions, or community that has direct affairs to media and the students will not execute appropriate actions. Media, being mainstream, is a major player for the students or the youth to become vital members of society.

**KEYWORDS:** MEDIA SOCIAL AWARENESS STUDENTS

**SUBMISSION ID:** R04A-IMUSC1-0006

**The Efficacy of Cooperative Learning, Problem Solving and  
Conventional Methods on the Achievement of Junior Students in Araling  
Panlipunan of Barobo Nhs: Basis for an Intervention Program**

Franklin Oranza

**Abstract**

**INTRODUCTION**

The efficacy of teaching would depend on the teacher's versatility or the ability to balance content in a selecting manner with the use of appropriate strategies necessary in the execution of the lesson in order to efficiently provide quality learning in the classroom (Inocian:1999). This has been the authentic calling and commitment that indeed demand nobility in teaching career from the rest of other professions. Social Studies as a discipline is a subject approach discipline through which man learn about the problem of survival. It lays more stress on the development of social awareness, empathy and a firm commitment to the common goal as a nation.

**METHODS**

The study employed the pre-test, post-test non-randomized quasi-experimental design to investigate the achievement level of junior students in Araling Panlipunan. Three groups were involved in this study, the two experimental groups, and the control group.

The design is appropriate in order to evaluate the effectiveness of treatment. This comparison is one between the two groups that are treated exactly alike except for the variable of interest.

**RESULTS**

The pre-test achievement of students in the experimental classes that use cooperative learning and problem-solving approaches are in the below average level, and the control class that uses conventional method is also below average.

The mastery level for the class that uses cooperative learning is 46.36%, the class that uses a problem-solving approach is 44.04%, and the class that uses the conventional method is 43.03%, the post-test achievement level of experimental class A's mean is 31.56%, mean percentage of 63.12%, and an SD of 3.64%. Experimental class B's mean is 29.5% or 59% and an SD of 3.76%. While the control class has 27.06% or 54.12% and an SD of 4.8%.

**DISCUSSIONS**

The pre-test of the three groups of classes of Araling Panlipunan serves as baseline data for the enhancement of student's learning's. They have positive effects on both the teachers and the students. The cooperative learning approach is the best and most useful approach in teaching, followed by the problem-solving and conventional method in that order. It is the center stage to provide a concrete learning experience and internalizing varied concepts in Araling Panlipunan. The first two approaches have a positive impact on the achievement of student's interpersonal relationships and attitudes about learning.

**KEYWORDS:** Cooperative Learning

**SUBMISSION ID: R013-SURSUR-0307**

**The Impact of K to 12 Work Immersion Program to the Basic  
Employability Skills and Attitude of Grade 12 Students of Nagpayong  
Senior High School**

Bai Samah Untong, Nagpayong High School

**Abstract**

**INTRODUCTION**

The aim of the study is to determine the Impact of K to 12 Work Immersion Program to the Basic Employability Skills and Attitude of grade 12 students of Nagpayong Senior High School to create a basis for an action plan for S.Y 2018-2019. The lack of training and preparation of students give them less opportunity to find jobs they desired.

**METHODS**

The researchers utilized the theory of Collins & Brown (1997) on the Cognitive Apprenticeship Theory and the Situated Learning theory proposed by Lave and Wenger (1991). The method of research employed was a mixed method which was a combination of qualitative and quantitative research and descriptive method to describe the characteristics and phenomena in the study. The respondents were the grade 12 students from Nagpayong High School with a sample size of 150 respondents. The instrument used in this study was the survey questionnaire adapted from the "Apprentice Search" and a focus group discussion. The employed statistical tool was the Statistical Package for the Social Sciences (SPSS) to ensure accurate and reliable data.

**RESULTS**

The findings show that respondents have an impact on communication with an overall weighted mean of 3.80 interpreted as "High Impact". In terms of critical thinking, it garnered a grand weighted mean of 3.40 interpreted as "High Impact". In terms of learning, it garnered 4.14 grand weighted mean interpreted as "Very High Impact". From the result attitude and behavior towards oneself garnered 3.96 grand weighted means interpreted as "High Impact". Lastly, in terms of attitude and behavior towards others, it garnered an overall grand weighted mean of 3.76 verbally interpreted as "High Impact".

**DISCUSSIONS**

The researchers recommend the school administration should deploy students to other big business industry for students to hone their working skills even further. The teachers and the school administration should administer a leadership training program to hone the student's leadership skills and initiative skills to take responsibility in every task and given situation for them to resolve. Teachers should lessen the group activities for them to learn how to work by their selves instead of working in a group all the time. The school should manage and arrange a support system to students' needs for work immersion such as financial support and transportation services to provide help for their welfare. A similar study should be conducted pointing out to other employability skills necessary for students' future effective employment of the youth.

**KEYWORDS:** Impact, K to 12, Work Immersion, Employability Skills, and Attitude

**SUBMISSION ID: NCR1-PASIGC-0004**

**The Implications of Having Long School Hours to the Students in Gen.  
Pantaleon Garcia Senior High School**

Decieh Marie V. Llanita & Irish Clarissa I. Sabater, Gen. Pantaleon Garcia  
Senior High School

(Adviser: Maria Theresa Landoy)

**Abstract**

**INTRODUCTION**

During the second semester on the academic year (2017-2018), Gen. Pantaleon Garcia Senior High School students experienced a very long-time exposure in class. They spent more than eight hours (specifically between 6 A.M. to 4:20 P.M.) in school every day compared to the 3 other stand-alone senior high schools in the City of Imus, which they only spent approximately 8 hours in their respective schools. As concerned to this situation, researchers want to know the impact and the implications of spending a long time in class to the students.

**METHODS**

Different research methods were used in this research study. The researchers used Qualitative Research and Naturalistic Approach to gather reliable data, factual information and to cite different point of views of the students regarding the said problem. Action research also applies to the study to help the school to know the student's concern and the best way of learning school hours for the students. The study used survey questionnaires and interviews as an instrument.

**RESULTS**

Based on the data that the researchers gathered, having long school hours gives a positive result for the students. As perceived to combined survey questionnaire results and interviews to both students and teachers at GPGSHS, it concludes that long school hours gives a lot of benefits to them such as they develop self-discipline, enhance their skills in academic studies, improve self-confidence, low-income areas are given more time, develop time management skills, utilizes self-discovery, more time for productive activities, students can focus on their chosen track, able to finish school calendar early, develop social interaction, teachers will help student for excellent instruction, and many others that benefit to the welfare of the students.

**DISCUSSIONS**

Based on the overall findings, researchers found that the Implications of having long school hours to the students in Gen. Pantaleon Senior High School gives a lot of advantages and benefits. In line with this problem, some International study also leads the same conclusion. Thus, more time in school gives a productive outcome for the students. On the other hand, researchers recommended some suggestions for future researchers: (1) broadened the scopes of respondents; (2) Try also other settings or set of samples to acquire other student's perspective; (3) Interview some professionals who is expert in this field; and (4) Collect more facts or review of related literatures to support your study.

**KEYWORDS:** IMPLICATIONS LONG SCHOOL HOURS STUDENTS

**SUBMISSION ID:** R04A-IMUSC1-0009

## **The Involvement of Student Governments in Implementing Basic School Regulations in St. Bridget College**

Tristan Joseph A. Alcantara, Erica Jhea A. Aclan, & Michelle Anne A. Sampol  
(Adviser: Lander Joseph Ilagan)

### **Abstract**

#### **INTRODUCTION**

As the highest governing body of students, student governments are tasked to be models in the observance of school rules and regulations. In this study, the researchers intend to evaluate the involvement of student governments in the implementation of the basic school regulations in St. Bridget College.

#### **METHODS**

Descriptive research was used. Researcher-made questionnaire validated by a technical expert was administered to junior high school and senior high school students of St. Bridget College identified through stratified random sampling. Data were analyzed using descriptive statistics.

#### **RESULTS**

Results show that student governments always participated in disseminating information regarding school matters and helps develop moral character, personal discipline and leadership. Members of student governments serve as the prime model of the students.

#### **DISCUSSIONS**

Results indicate that student governments serve as the bridge between the students and the institution. Student leaders are empowered to foster collaboration. Student governments give an opportunity for an organized partnership with the faculty, parents, and administration.

**KEYWORDS:** student government, school regulations, leadership

**SUBMISSION ID: R04A-BATANC-0463**

**The Level of Self-Esteem and Academic Performance of Grade Eleven  
Students of Angelo Levardo Loyola Senior High School S.Y. 2017-2018**

Jeneth E. Menil, Angelo Levardo Loyola Senior High School  
(Adviser: Jeneth E. Menil)

**Abstract**

**INTRODUCTION**

Every student has their confidence or self-esteem and many factors affect it. The study aims to determine whether the demographic profile affects the level of self-esteem of Grade 11 students of Angelo Levardo Loyola Senior High School and its correlation to their Academic Performance.

**METHODS**

Slovin's formula was used to determine the total number of respondents that are needed in the study. To test if there is a correlation between the stated variables, the researchers used a standardized questionnaire for the survey. After collecting the data, statistical treatment is applied and the results were interpreted.

**RESULTS**

After the interpretation, it shows that 57% of the respondents are female while 43% of the respondents are male. Age 17 to 18 years old has a greater population of respondents while 21-22 years older has a lesser population. The research also shows that 27% of the students of Angelo Levardo Loyola Senior High School have low self-esteem, while 73% got high self-esteem.

**DISCUSSIONS**

The results from this study indicated that there is a significant correlation between self-esteem and demographic profile. Subsequently, the researchers concluded that females had the highest self-esteem while males had the lowest self-esteem.

**KEYWORDS:** self-esteem, academic performance, demographic profile, correlation

**SUBMISSION ID: R04A-CAVTP-1337**

## **The Relationship of Emotional Maturity to the Self-Esteem of Selected Grade 12 Students of Nagpayong High School**

Jemima Rose Relos, Nagpayong High School

### **Abstract**

#### **INTRODUCTION**

The main objective of this study was to determine the relationship between emotional maturity and the self-esteem of selected grade 12 students of Nagpayong High School in S. Y. 2018-2019.

#### **METHODS**

The theoretical framework of the study was the Genos EI Model from the works of Palmar and Stough. The researchers utilized the Descriptive-Correlational Method and used an adapted questionnaire from Dr. Singh, Dr. Bhargava, and Dr. Rashee as the main instrument to collect data from 207 respondents. The statistical tool used is the SPSS and the formulas used in the statistical treatment of data were a percentage, frequency, mean and Pearson r correlation.

#### **RESULTS**

Results revealed that majority of the respondents were from the Information and Computer Technology strand belonging to the age group of 17-19 and female. The findings showed that the respondents sometimes experience emotional instability with a weighted mean of 2.26; Social maladjustment, 2.17, with a verbal interpretation of sometimes; Emotional regression got 2.34 with a verbal interpretation of sometimes and Personality Disintegration received 2.19 with the verbal interpretation of sometimes. Overall, emotional maturity got the weighted mean of 2.24 with a verbal interpretation of sometimes. The results showed that the respondents gave their academic self-esteem a score of 2.70 with the verbal interpretation of somewhat agree, and for social self-esteem 2.61 with a verbal interpretation of somewhat agree. Overall, self-esteem received 2.65 and a verbal interpretation of somewhat agree. The results revealed that there was no significant relationship between emotional maturity and the self-esteem of the Grade 12 students.

#### **DISCUSSIONS**

The researchers recommend that more funding and awareness of mental health and emotional maturity must be provided as emotions and proper mental well-being constitutes a functional and able human being and to the research locale Nagpayong Senior High School's administration to administer seminars for both the faculty and the students to gain a deeper understanding of emotional maturity and self-esteem of the youth and how these two play a significant role in the lives of the youth.

**KEYWORDS:** emotional maturity, self-esteem, relationship, correlation, emotional health, Grade 12

**SUBMISSION ID: NCR1-PASIGC-0003**



**The Relationship of Emotional Maturity to the Self-Esteem of Selected  
Grade 12 Students of Nagpayong High School S.Y. 2018-2019**

Jemima Rose E. Relos, Nagpayong High School  
(Adviser: Marivi Camacho)

**Abstract**

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**KEYWORDS:** emotional maturity, self-esteem, relationship, correlation, emotional health, Grade 12

**SUBMISSION ID:** NCR1-PASIGC-0005

**The Social and Behavioral Correlation of Social Media among Grade 10 Students in Anselmo A. Sandoval Memorial National High School**

Ma. Lourdes Paras, Anselmo A. Sandoval Memorial National High School

**Abstract**

**INTRODUCTION**

Social media becomes the predominating ally of the existence of mankind nowadays. Likewise, it possesses multi-tasking functions. It plays an essential role in particular to social and behavioral aspects of an individual. Since it caters most the teenagers, as observed in Anselmo A. Sandoval Memorial National High School, this study was aimed to determine the correlation of social media to social and behavioral aspects of Grade 10 students and make the necessary activities to lessen its adverse effect to the students.

**METHODS**

The descriptive method through a quantitative method was used among 60 Grade 10 respondents taken from 10 sections in random sampling in Raosoft formula. Moreover, the statistical tools used were weighted mean, rank and Pearson r.

**RESULTS**

Social and emotional features of social media were identified. In like manner, it was found that social media has no significant relationship to the social aspect of Grade 10 students; however, social media has a significant relationship to their behavior. Moreover, activities will be applied to lessen the negative effects of social media on students' behavior.

**DISCUSSIONS**

The result needs to pay attention so that the adverse effect of social media to behavior will be lessened/be avoided.

**KEYWORDS:** Social Behavior

**SUBMISSION ID: R04A-BATANP-1408**

## **The Socio-Economic Effects of Globalized Tourism to the Indigenous Communities: the Case of the Aetas in Boracay Island, Philippines**

Dee-Vee Ann Fercol, DLSUD

### **Abstract**

#### **INTRODUCTION**

Global tourism has presented itself in many different forms and had far-reaching effects on nearly every person on the planet. However, globalized tourism is like a double-edged sword, while so much attention is paid on the extreme positive and negative effects, the process has created both winners and losers. The same mixed result can be seen amongst the indigenous people of Boracay Island, Philippines. This study aims to analyze the socio-economic effects of globalized tourism to the indigenous people of Boracay particularly in their employment, income, livelihood, and lifestyle in terms of (a) Educational status; (b) Access to utilities e.g., electricity and water; (c) Use of technology and modern appliances; (d) Access to health services; and (e) Consumer behavior (food choice).

#### **METHODS**

This study employed a Mixed Method Design using the Descriptive Historical Comparative Analysis to provide the synthetic view on how globalized tourism affected the Aetas of Boracay in terms of employment, income, livelihood, and lifestyle in different time frames.

Quantitative Method for the analysis of data was used to determine the significant difference in the Aetas salary and income before and after the 1990s via t-test. Qualitative Method of research was utilized through in-depth interview and observation. Community immersion was used as the main instruments to gather the needed data of the study to determine the change in lifestyle of Aetas.

#### **RESULTS**

Boracay Island's transition from having traditional tourism Nipa accommodations, traditional bamboo facilities modified to first class hotels is the result of globalized tourism and significantly changed the Aetas employment, income, livelihood and lifestyle. The participants of this study were the 30 Aetas head of the families of Boracay Island.

#### **DISCUSSIONS**

The results demonstrate that the Aetas were originally engaged in industries where they took various materials directly from nature such as foraging, fishing, and hunting. Presently, Aetas were employed in tourism-related services working as housekeepers in hotels tremendously changing the Aetas traditional employment, income, livelihood and lifestyle in terms of (a) Educational status; (b) Access to utilities e.g., electricity and water; (c) Use of technology and modern appliances; (d) Access to health services; and (e) Consumer behavior (food choice).

**KEYWORDS:** Globalized Tourism, socioeconomic effects, double-edged sword, the tourism industry

**SUBMISSION ID: R04A-CAVTP-0446**

## **The Use of Service - Learning in Promoting the Sense of Civic Responsibility in Grade 5 Pupils of Carasuchi Elementary School**

Irene Mojica & Maria Edmilyn P. Ocampo

### **Abstract**

#### **INTRODUCTION**

The researchers believe that service - learning is a promising pedagogy that has the potential to provide young people not only the knowledge but also to the development of responsible and active citizens. This action research explores the effect of service-learning participation on Grade V pupils who participated in a service-learning program have a higher sense of civic responsibility than their peers who did not participate in a service-learning program.

#### **METHODS**

This research was a quasi-experimental comparative group study involving a treatment group and a comparison group. The comparison group is composed of 13 pupils who did not participate in a service-learning program. This study was utilized through a pre-test – post-test civic responsibility survey instrument. The treatment or the service-learning program was conducted for two -hours twice a week for a period of two months. Service Learning program that was offered to the treatment group were the following: (1) Conduct of neighborhood cleanup/beautification days in a selected purok; (2) Go on a field trip to the nearby community to plant and/or propagate trees and learn about local wildlife; (3) Help and assist senior citizens in the barangay; (4) Introduce pupils to a Filipino/local personality who have made a positive difference in the community/society; and (5) Assist in the feeding program initiated by the barangay.

#### **RESULTS**

Reject the null hypothesis as the computed  $p$  value=0.005 is lower than our significance level of 0.05. thus, there is a difference between lecture method and service learning. The sense of civic responsibility has a greater effect on learners who undergone the service-learning method than lecturing method as it is shown on their computed variance, learners on service-learning method differ with 0.02.

#### **DISCUSSIONS**

In addition, service-learning participants in comparison with other students developed basic citizenship skills such as the ability to express an opinion, to speak in public, to organize groups and they are able to think critically about simple issues in the community.

**KEYWORDS:** Service - Learning

**SUBMISSION ID: R04A-CAVITP-1267**

## **Utilization of Effective Motivational Activities in Teaching Discipline and Ideas in Social Sciences**

Katrina Gonzales

### **Abstract**

#### **INTRODUCTION**

The struggle of learning Social Science discipline is certainly observed among learners since it is exposed to factual information such as history, theories, significant dates, places, influential people and the likes. Students are often encouraged to regurgitate facts as a means to demonstrate academic understanding. With this, teachers of Social Science were really challenged about incorporating motivational activities to capture the interest of the learners and for them to actively participate in the teaching-learning process and to ensure their preparedness on the four exits of K-12 program.

#### **METHODS**

The purpose of this study was to identify and utilize the effective motivational technique in teaching Discipline and Ideas in Social Science among the Grade 12 students in content areas of the second quarter, the first semester of Grade Twelve, the academic year 2018-2019. The respondents of this study consist of fifty (50) Grade Twelve students enrolled at Lobo Senior High School selected through random sampling. Moreover, twenty (20) Humanities and Social Sciences (HUMSS) teachers in Senior High School were also requested to participate in this study.

#### **RESULTS**

The researcher finds out that the main struggle faced by the students in learning the discipline and ideas of Social Science is that teachers' way of teaching is more on the lecture method. It can also be gleaned that the teacher considered the use of trending games as an effective motivational technique topping all other forms of motivational technique.

#### **DISCUSSIONS**

In addition to instruction, students were given the opportunity to enjoy the lesson while they were learning. The analysis of data revealed that the application of an effective motivational technique has a positive impact on the teaching and learning Discipline and Ideas in Social Science.

**KEYWORDS:** teaching, motivational technique, Social Science

**SUBMISSION ID: R04A-BATANP-0017**

## **Utilization of Teaching Strategies and the Nat Performance of Pupils in Araling Panlipunan**

Gedion Chanao Mayos, Department of Education

### **Abstract**

#### **INTRODUCTION**

The study was conducted to determine the extent of utilization of teaching strategies to enhance the National Achievement Test of pupils in Araling Panlipunan (AP). It also studied the degree of seriousness of the problems encountered by teachers in teaching AP.

#### **METHODS**

The study employed a descriptive research design. Weighted mean was used to quantify the extent of utilization of teaching strategies and the degree of seriousness of problems that the respondents encountered. F-test was used to identify if there were differences among the responses of the teachers. Single-factor ANOVA was used to compute the extent of teaching strategies as to years in teaching, highest educational attainment, and relevant training/seminars attended.

#### **RESULTS**

Findings of this study showed that the classroom-based teaching strategies were more utilized than individualized teaching strategies and group-based teaching strategies. The pupil-related problems were more encountered problems than teacher-related and school-related problems. There is a significant difference established when classroom-based teaching strategies were compared according to years in teaching; and when individualized teaching strategies were compared according to relevant training or seminars related to AP.

#### **DISCUSSIONS**

Relevance can be gleaned when teacher-related and school-related problems were encountered, which were compared according to years in teaching, and when teacher-related problems were compared to educational attainment, and relevant training or seminars related to AP.

**KEYWORDS:** Individualized Teaching Strategies, Group-based Teaching Strategies, Classroom-based Teaching Strategies

**SUBMISSION ID: R04A-CAVITP-0913**

## **SOCIAL WORK**

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## **A Comparative Study of Plastic Bottles Collection Using Basketball Bottle Recovery Facility and Traditional Material Recovery Facility**

Shane Santos

### **Abstract**

#### **INTRODUCTION**

Plastic bottles are made from a petroleum product known as polyethylene terephthalate (PET), and they require huge amounts of fossil fuels to both make and transport them. Improperly throwing plastic bottles means it can end up in landfills, oceans, or seas which can pollute the environment. This study aimed to develop a new facility in disposing of used plastic bottles that will provide students of Cavite National Science High School enjoyment while properly disposing of their wastes.

#### **METHODS**

The materials used to construct a new material recovery facility were steel matting, angle bars, cutting disc, welding rods, basketball ring, ply board, nails, and paint. The construction of the facility was done by a welder in General Trias, Cavite. The new facility was placed near the canteen and the bottles were collected weekly for 10 weeks. Two- sample T-test was used to analyze and interpret the data gathered.

#### **RESULTS**

The results showed that there was a significant difference in using the basketball bottle recovery facility.

#### **DISCUSSIONS**

In Cavite National Science High School, students buy water plastic bottles and they dispose of it improperly even the school has Material Recovery Facility. To solve this problem in school, a study was conducted that helped the school's environment and facilitators by providing a Material Recovery Facility that was created with the ring were in students enjoyed by shooting their used plastic bottles inside the newly designed Material Recovery Facility. This study helped the school's community in having a clean environment and it helped the facilitators in cleaning the scattered plastic bottles.

**KEYWORDS:** basketball, material recovery facility, plastic bottles

**SUBMISSION ID: R04A-CAVITP-0892**



**Awareness in Advertising Volunteerism and Donations of Non-Profit  
Organization in Batangas City**

Czarina Maureen S. Macabidang, Michaela Liam P. Bawal, Magdalena Ysabel  
C. Melendrez, Rose Marie A. Velasquez, & Vernon Dohn Rowley D. Cantal  
(Adviser: Lander Joseph Ilagan)

**Abstract**

**INTRODUCTION**

Volunteerism and donations are widely used by non-profit organizations (NPOs) for establishing funds to support their advocacy. With varied means of advertising, NPOs use different strategies in promoting their cause. In this study, the researchers intend to assess awareness in advertising volunteerism and donations by non-profit organizations.

**METHODS**

A descriptive study was used. Researcher-made questionnaire validated by a technical expert was administered to directors of NPOs identified through convenience sampling. Analysis of data used descriptive statistics.

**RESULTS**

Results show that NPOs are highly aware of traditional advertising and its effects. NPOs use traditional advertising in soliciting donations and seeking for volunteers. Traditional advertising is regarded as the most credible among forms of advertising.

**DISCUSSIONS**

Results indicate that traditional advertising is more interpersonal in approach. It is effective in raising funds because of its personal appeal. However, NPOs are suggested to utilize non-traditional advertising because of its wide reach and diverse coverage.

**KEYWORDS:** volunteerism, donation, advertising

**SUBMISSION ID: R04A-BATANC-0461**

## **Services of the Municipal Social Welfare and Development Office: An Assessment**

Jessica Crucillo, Department of Education Tabaco City

### **Abstract**

#### **INTRODUCTION**

The study aimed to assess the services of the Municipal Social Welfare and Development Office to its clientele group. It sought to know the level of satisfaction of the respondents on the services rendered by the Municipal Social Welfare and Development Office in terms of educational, safety and security, health and livelihood services.

#### **METHODS**

The study had seventy-five (75) respondents taken from five (5) Barangays of Malinao, wherein each Barangay has fifteen (15) respondents. The study will only focus on the said number of respondents because of the limited time and the far distance of each barangay. The main tool utilized by the researcher to gather and answer the problems was the questionnaire-checklist. The questionnaire was conceptualized and developed by the researcher with the assistance of the research adviser and received approval of the panel members. The study utilized a descriptive method of research to gather reliable data or information.

#### **RESULTS**

The level of satisfaction of the respondents along safety and security was assessed as fair with an average weighted mean of two and thirty-four hundredths (2.34). The level of satisfaction of the respondents along health services was assessed as fair with an average weighted mean of two and forty-nine hundredths (2.49).

On the attitudinal problems of the personnel revealed that having preferences of clients to be served first got the highest frequency of 68 and ranked first. On the quality of services rendered by the Municipal Social Welfare and Development Office revealed that the services were not enough to sustain the needs of the community got the highest frequency of 65 and ranked first.

Safety and security services are very important to secure the lives and properties of the people, wherein it is a means of risk reduction and zero casualties. More focused programs and services on health to create a good environment.

#### **DISCUSSIONS**

It is recommended that the local government and MSWD Office should enhance their services on education. It is a must to develop and enhance more the delivery of services especially in terms of livelihood because of there a lot who do not have a job. They should visit the upland areas and conduct services that are helpful to the residents' daily routine and provide them the basic needs that the residents needed for their survival. It is recommended that the office should improve their services through the grassroots level of planning and enhance their working relationship with the clientele group.

**KEYWORDS:** Assessment, Service Delivery

**SUBMISSION ID: R005-TABACO-0065**

## **Significance of Pantawid Pamilyang Pilipino Program to the Education of Senior High School Students**

Jerald D. Escamillas, San Juan Senior High School  
(Adviser: Galileo Juangco)

### **Abstract**

#### **INTRODUCTION**

The Pantawid Pamilyang Pilipino Program(4P's) is a human development measure of the National Government that provides conditional cash grants to the poorest of the poor, to improve the health, nutrition, and education of the children aged 0-18. This program helps people to sustain their education and ensure their health. However, education is still a big problem for those parents who have no permanent job because they don't have financial assistance to support their children in education. Thus, the 4P's was created to reduce poverty in the Philippines. This study aimed to know the significance of this program to San Juan Senior High School students.

#### **METHODS**

This paper used a qualitative case study that aims to know the effectiveness of 4P's on the education of San Juan Senior High School students. It determined the perceptions of students and educators on the advantages/disadvantages of being a 4P's beneficiary. The data was gathered through an in-depth interview and then it was coded and analyzed.

#### **RESULTS**

The Pantawid Pamilyang Pilipino Program is a good and helpful program, especially in education. It helped the students to have allowances that they will use in buying supplies and paying other expenses in the school. It is really significant in the education of Senior High School students, it evident through the five beneficiaries who were the participants of this study. This program provides the primary needs of students in school. The participants rated the program with an average of 9.5. However, there are times that benefits are delayed, the disadvantages of this program are the unfair treatment on those people who are not really qualified to become a beneficiary of 4Ps. Students used their goal and ambition as a motivation to be more determined in their studies.

#### **DISCUSSIONS**

The effectiveness of Panatawid Pamilyang Pilipino Program can be proven and really visible in all aspects of their life. It is a great help especially for those students who want to pursue their studies. This program of the government is truly effective on student's education. It opens an opportunity for the students to strive hard and continue pursuing their dreams. Students should strive hard on their studies to achieve their goals; it can be attained with the help of their parents who also work hard for them. The government must choose a perfect beneficiary who is really in need of this program. Students, parents, and teachers need to do their parts well in order to have a well-secured future.

**KEYWORDS:** 4Ps, beneficiary, education, conditional cash grants

**SUBMISSION ID: R04A-BATANP-0878**

## **Utilization of Pantawid Pamilya Pilipino Program (4P's) Funds in the Learners' Academic Achievement**

Melita Villanueva

### **Abstract**

#### **INTRODUCTION**

The primary purpose of the research was undertaken to investigate the utilization of the Pantawid Pamilya Pilipino Program (4P's) funds in the learners' academic achievement. This study aimed to determine how the funds of the Pantawid Pamilya Pilipino Program was properly utilized by the learners under this program.

#### **METHODS**

The study made use of chi-square to test and determine how the fund was utilized by the learners under this program. The respondents of the study Pantawid Pamilya Pilipino Program are the beneficiaries from Kinder to Grade VI who were enrolled at Mariano C. Anacay Memorial Elementary School.

#### **RESULTS**

The proponent recommended that the school must implement a project for the awareness of the parents and the members on how the fund is utilized that can help to improve the academic achievement of the beneficiaries.

#### **DISCUSSIONS**

The output/future directions of the proponent were a similar study that may be conducted show that the program is an intervention to utilize the allotted fund given to the members of Pantawid Pamilya Pilipino Program that benefited not only on their everyday living but also for their children academic achievement.

The study focused on the proper utilization of the Pantawid Pamilya Pilipino Program funds. It also aims to inform the respondents their responsibilities on increasing the academic achievement of the beneficiaries.

**KEYWORDS:** Pantawid Pamilya Pilipino Program, Academic Achievement, Funds, Learners, Utilization

**SUBMISSION ID: R04A-CAVITP-1207**

# **SOCIOLOGY AND ANTHROPOLOGY**

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**Girl, Boy Bakla, Tomboy: the Lgbt Community in Cavite National High School – SHS as Perceived by ABM Students**

Salvanera, Adrian  
(Adviser: Dr. Ruel S. Arcon)

**Abstract**

**INTRODUCTION**

Our President Rodrigo R. Duterte says that "I want same-sex marriage. The problem is, we'll have to change the law, but we can change the law." We can see that this statement showed how the President supports the LGBT or homosexual community by supporting the enactment of the law on Same-Sex Marriage. Knowing that there are religious groups that are against this law, researching the different point of view of people about the influence of LGBT in society will benefit not only the community but the society in general. We conducted this research to know how the respondents, the ABM 12 students of Cavite National High School Senior High Department perceived the LGBT community in the school.

**METHODS**

The research is a combination of both qualitative and quantitative research. A Likert-type of the questionnaire, which was validated, was used to gather the necessary data. The administration of the questionnaire was conducted in Cavite National High School Senior High Department last November 2018.

**RESULTS**

The result of the study revealed that on the factors that affect the perception of the respondents about the LGBT Community, they strongly agree on religion as the factor, undecided on family, and disagreement on media are the other factors that influence their perception. The respondents agree that the influences of the LGBT community at the school are all positive.

**DISCUSSIONS**

To further promote equality among sexes we would like to suggest making the implementation and promoting the advocacies of GAD of the Department of Education.

**KEYWORDS:** LGBT, Social Awareness, perception

**SUBMISSION ID: R04A-CAVITC-0021**

## **A Translation and Compilation of Folk Stories of the Igorots (Kan-Kanaey) in Maddel**

Mary Jane G. Cabbigat, Balligui High School/Department of Education  
(Adviser: Alma C. Binwag)

### **Abstract**

#### **INTRODUCTION**

Life and literature are interrelated to each other. Literature is the mirror of life but life is the basis of the mirror. Thus, life and literature are inseparable because what is to be written in any literature is all about life. Cordilleran literature is in the form of epics, poems, myths, legends, folktales, proverbs, and riddles. In addition to, De Villa said (2008) in his book, "Adyenda sa Pananaliksik sa Pagsasalin", to translate is one way of disseminating and enriching regional culture, an essential deep well of national history and culture. This study aims to translate in Filipino what is gathered, reviewed and evaluated folk stories of the Igorots (Kan-kanaey) from Mountain Province at Pedlisan, Maddela, Quirino.

#### **METHODS**

A qualitative method was used in this study particularly the ethnography strategy. It came from the Greek word *ethos* means "the people" and the *graph* means "writing". The different characteristic of the people was considered in sharing their insights and beliefs in order to avoid conflict with regards to their ideas. In this study, it is necessary to live, mingle, and share with them especially with the respondents. The researcher should be very evaluative to avoid theoretical or perspective changes while on the process of immersing with that particular group.

#### **RESULTS**

The folk stories of the Igorots (Kan-kanaey) are full of values and life lessons that can help in molding the youth. These folk stories include messages, themes, and values that can be applied to real life. It depicts great characters from ancestors of the race. In reading their folk stories, it strengthens camaraderie and strong relationship among the individual in the community. With these, it enhanced and enriched good character, behavior, mindset, and beliefs.

#### **DISCUSSIONS**

The result of the information's gathered in this study is factual and it is not just a prediction because the basics are true to life experiences of the people involved. Full respect should be possessed in this kind of study to protect the culture and behavior that is being studied, reviewed and evaluated, and to get rid of hurting one's way of life.

**KEYWORDS:** beliefs, characters, folk stories, and values

**SUBMISSION ID:** R002-QUIRIN-0107

## **Level of Familiarity of Kankana-Ey Students in Tayaw**

Erma V. Marticio, MNHS  
(Adviser: Windell R. Marquez)

### **Abstract**

#### **INTRODUCTION**

Tayaw is a katakana-ey word for "fly" which is common among Igorots. This is associated with the "cañao" [kanyaw] during the celebration of weddings, death anniversaries, curing rituals and other festivities. It is a dance ritual which shows expression of feast, joy or celebration. As civilization, development, Christianity, and immigration were embraced by the Kankana-ey, it is undeniable that it affects their belief system including Tayaw which is known as their major dance. Kankana-ey people who live in the downtowns tend to depart from their culture. Thus, this study was initiated to measure the level of familiarity in Tayaw of the "highly civilized" kankana-ey students who migrated and lived downtown.

#### **METHODS**

A descriptive quantitative design was used. Using purposive sampling, a researcher-made test was administered to the 33 identified Kankana-ey students. It is composed of thirty multiple choice questions wherein the scores of the students were transmuted. The level of familiarity of Kankana-ey students in Tayaw was determined by using the following rating scale of 90-100- Extremely Familiar, 85-89- Moderately Familiar, 80-84-Somewhat Familiar, 75-79-Slightly Familiar, and below 75-Not Familiar.

#### **RESULTS**

Most of the Kankanaey students acquired a moderately familiar level of familiarity (45.45%), there are 24.24% extremely familiar, 15.15% are somewhat familiar, 12.12% slightly familiar, and only .03% are not familiar.

#### **DISCUSSIONS**

The results show that even in the midst of modernization and immigration of Kankana-by the respondents are still familiar with their tradition "Tayaw". As culture entails identification to every group of people even the "highly civilized" Kankana-ey are familiar in Tayaw as a dignified and sacred manner because when rituals are suppressed or systematically banned, the people would also lose their very identity. Tayaw is a dance accompanied by a chant which is believed to be against Christianity. Thus, the Kankana-ey people nourish their cultures along with their Christian faith.

**KEYWORDS:** level of familiarity, Tayaw, Kankana-ey, highly civilized

**SUBMISSION ID: R002-QUIRIN-0080**



## **Qualitative Study on the Reactions of Barangay Social Workers and Experiences of Youths Involved in Teenage Pregnancy**

Jomarie D. Ballesteros, MNHS

(Adviser: Whilmar Villanueva)

### **Abstract**

#### **INTRODUCTION**

Teenagers nowadays are sexually active yet they have limited access to sex education and Adolescent Sexual and Reproductive Health Services. Media, on the other hand, promotes sexuality to the young which may mislead them with wrong information about sex that is why parents play an important role in the lives of their children. Various researchers have been conducted along this line, however, they failed to determine the reaction of social workers and experiences of teenagers who became pregnant at an early age.

#### **METHODS**

A qualitative exploratory design was used to uncover the life experiences of individuals enabling them to interpret and attribute meaning to their experiences. Those identified to have been pregnant at an early age and the social workers from Campamento, Diffun, Quirino were chosen as respondents wherein voluntary participation was highly emphasized. Participant-observation, structured interview and in-depth interview with the respondents were the primary tools utilized. Thematic analysis was used to analyze all gathered data.

#### **RESULTS**

Majority of the respondents indicated that one cause of teenage pregnancy is aggressiveness. Curiosity about sexual activities and lack of self-discipline as well as self-controlled them to get pregnant at an early age. Respondents also revealed that family problems affected them resulting in depression that forced them to seek love and support from the opposite sex. Furthermore, the lack of attention from parents and peer pressures caused them to get involved in early pregnancy. Family planning due to lack of education, disobedience to parents' advice and taking vices influenced by peers were also identified as contributory factors to the high rate of teenage pregnancy in the locale. On the reactions of the social workers, failure to listen to parents' advice prevailed as the leading cause of teenage pregnancy among youths nowadays.

#### **DISCUSSIONS**

The results of the study showed that teenagers should be properly guided not only within the family but also other groups of people that may have a direct influence on them. When misguided, teenagers tend to become aggressive. Parents should make necessary actions and provide the needs of their children to ensure proper upgrading, nurturing and safety. Authorities should provide programs and services for the youths to prevent early teenage pregnancy, emphasizing the awareness on its effects as well as the strengthening of the integration of sex education in the curriculum.

**KEYWORDS:** reactions, social worker, experiences, youths, teenage pregnancy

**SUBMISSION ID: R002-QUIRIN-0079**

## **Relationship of the Level of Ethnocentrism and the Need to Belong of Migrant Students: Determinants of an Inclusive Education Setting**

Robbie Jan Vincent Buelo, Philippines Communication Society, Philippine Association for Media and Information Literacy

(Adviser: N/A)

### **Abstract**

#### **INTRODUCTION**

Inclusive education has been existing for many years now and had been practiced by various countries nowadays (Malaquias, 2017). This concept had been considered broad since there are different notions of these ideas from various places (Loreman, 2017). Ethnocentrism deals with the attitude of humans in biding to their culture as the center of their identity (Olufson, n.d.). Belongingness in an academic institution provides a sense of social acceptance and strong connection (Romero, 2015; Vaz, et. al, 2015). The school builds a greater opportunity for the socialization of the students (Vaz, et. al, 2015) and in reducing stereotyping towards the students who are different (Laldin, 2016).

#### **METHODS**

This study used Descriptive-Correlational method for the execution of the study. Chi-square was used as the statistical treatment for the interpretation of data. The researcher used purposive sampling to obtain the participants of the study. The criterion was set so that only the qualified students would be studied. Among the 1691 students of Dasmariñas Integrated High School - Senior High School (DIHS-SHS) as of August 2018, there were 59 qualified participants. The researcher used standardized instruments of Leary, et. al (2005) for the Need to Belong Scale and of Neuliep and McCroskey (2013) for Ethnocentrism Scale.

#### **RESULTS**

Statistically, the profile of the respondents has no relationship with their perceived need to belong. Moreover, the cross-tabulation of the relationship of the level of ethnocentrism to the need to belong of the respondents, regardless of the intervening variables such as sex and place of origin, has also no relationship to each other. Having the computed p-Value of 0.898 (cross-relationship), 0.9258 (in terms of place of origin), 0.9787 (in terms of sex), under the Degrees of Freedom at the level of significance of .05, all p-Values had resulted to a higher value than 0.05.

#### **DISCUSSIONS**

The results exhibited that ethnocentrism of the migrant students does not have any relationship to their belongingness. Respondents could still easily cope with their new environment regardless of their sex and place of origin. Coping is one of the values of Filipinos which is very evident in interacting with various cultures of people. This would, at least, provide an extension of assurance in creating an inclusive education setting.

**KEYWORDS:** ethnocentrism, belongingness, inclusive education, migration, culture

**SUBMISSION ID: R04A-DASMAR-0035**

## **The Power of Faith Healing: Personal Experiences of the Locals in Poblacion, Amadeo, Cavite**

Aila Vertudez, Ma. Alyssa Nichole Sol, Sealthiel Jireh Doctor, & Ma. Grazielle Panganiban

### **Abstract**

#### **INTRODUCTION**

Faith healing, recourse to divine power to cure mental or physical disabilities, either in conjunction with orthodox medical care or in place, became the focus of pilgrimages for sufferers (Augustyn, et. al., 2018). Hundreds of years ago, our forefathers relied on traditional healing methods to cure maladies, heal wounds and recover from sicknesses (Russell, 2012).

Large cities in the Philippines like Manila and Cebu have up-to-date medical services, but the vast rural areas in provinces suffer from lack of modern medical services. In Cavite Province, faith healers are called Albularyos who cure patients' mental and physical problems and often give herbs, do oracions and massages to treat people (Tangelder, 1982).

The study focused on the personal experiences of the locals in Poblacion, Amadeo, Cavite when they consulted faith healers.

#### **METHODS**

This is qualitative research. Data gathered by conducting an interview with twelve (12) respondents, one from each barangay in Poblacion, Amadeo, Cavite who consulted in faith healers.

#### **RESULTS**

All of the 12 informants stated that faith healing is effective and safe. These informants sought help from faith healers for their illnesses like Bating Nuno which are caused by the dwarves and fairies, bali or sprains, lamig or muscle pain, lagnat or fever, and witchcraft or black magic.

Six informants said that they consulted faith healers because their illness was believed to be caused by Bating Nuno or dwarves and fairies, two of the informants mentioned that they sought help from faith healers because they had bali or sprains, while the other two was caused by lamig or muscle pain. One informant said that she consulted a faith healer because she had an eye problem, but when she went to a medical doctor, she was informed that there was nothing wrong with her eye. The said informant decided to consult a faith healer and was told that her eye problem was caused by witchcraft or black magic. The eye problem was treated and the informant felt relief.

#### **DISCUSSIONS**

Based on the study, 12 respondents from Poblacion, Amadeo, Cavite were healed by the faith healer by doing different rituals and by giving them alternative medicines. These informants sought help from faith healers because of their beliefs and economic status. There must be information dissemination through blogs to share the power of faith healing and to enlighten the perception of other people who do not accept the practice of faith healing.

**KEYWORDS:** faith healing, bating nuno, lamig, bali, black magic

**SUBMISSION ID: R04A-CAVTP-1442**

# SOUTHEAST ASIAN

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## **Teaching Strategies in Contextualizing Asian History and Culture among Grade 7 Students in Batangas National High School**

Dulce De Ocampo, DCBER

### **Abstract**

#### **INTRODUCTION**

This study was intended to generate data on the instructional competence of teachers in relation to the development of students in Batangas National High School. It would shed light on the instructional tasks exercised, which received corresponding support of the principal and department head. The intensity of problems assessed could be related to the instructional performance and that all the groups of respondents' individual perception and how they significantly differed was known.

#### **METHODS**

This study made use of a descriptive-correlational research design for different purposes. Descriptive research was used to describe the level of teaching strategies of Social Studies teachers and the extent of contextualizing Asian history and culture. A correlational study was also used to assess the degree of relationship between the two variables under study. The study answered two variables on the level of teaching strategies and the level of contextualizing Asian history and culture. This study also tested the relationship between the two variables.

#### **RESULTS**

It was found that the respondents agreed on the way Social Studies teachers utilized teaching strategies in teaching Social Studies led by concept mapping (4.26) ranking first, followed by reporting (4.19), film showing (4.18), educational tours (4.03) and research (3.98). The results show that Social Studies Grade 7 teachers primarily focused on the use of different teaching strategies concept mapping while research was not commonly utilized for effective learning. Based on the overall mean score of 4.3, the respondents perceived that Asian History and Asian Culture were contextualized to a high extent. First contextualized was Asian Culture (4.35) and Asian History (4.30) both described to a high extent. The students have a high extent appreciation of Social Studies anchored on the effective discussions of topics on Asian History and Culture in which the students could relate to their present condition as individuals.

#### **DISCUSSIONS**

Grade 7 Social Studies teachers should continue the use of research as a strategy in teaching different topics in the subject, particularly Asian History and Asian Culture. This action research produced plans, program, and activities for the improvement of teaching strategies of Araling Panlipunan Grade 7 teachers in Batangas National High School.

**KEYWORDS:** Teaching Strategies, Contextualization, Asian Culture, Instructional Performance, Instructional tasks

**SUBMISSION ID: R04A-BATANC-0239**

# **THEATRE AND PERFORMANCE STUDIES**

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## **Cultural Adjustment and Academic Performance of Grade 11 Transferees at NAIC National High School**

Yvonne Pangilinan, NAIC NHS

(Adviser: Jeffrey Santos)

### **Abstract**

#### **INTRODUCTION**

Living in a culture that is different from your own can be both an exciting adventure and a challenging process. Naic National High School population was continuously growing and regardless of what school these new students are from, it is common for all students to go through a period of cultural adjustment. In this study, we comb the prevalence on cultural adjustment level and academic performance of Grade-11 transferee students.

#### **METHODS**

The researchers used Descriptive Survey Correlation method for collecting the information about the population of interest using survey questionnaire that modified from the research of Wilson (2004) entitled, "Exploring the Past, Present, and Future of Cultural Competency Research". It utilized the total remuneration of the entire population of Grade 11 senior high school transferees of Naic National High School taught for the school year 2018 - 2019. There was a total of 61 transferees during the time of study and 100% participated and answered the given questionnaires.

#### **RESULTS**

With over 61 respondents the findings of this study: Socio-Cultural Adjustment got the mean of 2.27, 2.22 for academic and work performance, 2.45 for general adjustment and 2.31 for the overall level of cultural adjustment. Grade 11 transferee students had the mean value of 82.69 for their first quarter average with an interpretation of "Approaching Proficient". The computed t-value was 0.39 less than the critical t-value of 2. Therefore, the level of cultural adjustments and academic performance of the Grade 11 transferee are not related to each other. With 0.05 level of significance, computed P-value of 0.5674 and critical P-value of 0.5. This study also shows that there is no significant difference in the academic performance of the respondents if they are grouped according to their level of cultural adjustment.

#### **DISCUSSIONS**

In the light of these findings, it can be concluded that the grade 11 transferee students' cultural adjustment in socio, work and performance, and general adjustments do not have any significant relationship in their academic performance. While students' academic performance that is measured through their first grading average was Approaching Proficient. Also, there is no significant difference in the academic performance of the respondents if they are grouped according to their level of cultural adjustment.

**KEYWORDS:** CULTURAL ADJUSTMENT, TRANSFEE, ACADEMIC ACHIEVEMENT

**SUBMISSION ID: R04A-CAVITP-0047**

# TOURISM AND HOSPITALITY

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**Agritourism: An Alternative Tourist Activity Enhancement of Tourism  
Attraction in Cavite Province: Basis for Agritourism Program**

Katrina Eunice Cenizal, Ternate National High School

**Abstract**

**INTRODUCTION**

Primarily, to persuade the local community to uphold the upland area to be developed as an agri-tourism site and prove that the Province of Cavite is not just rich in historical attractions but also boasts a new alternative attraction. It seeks to determine how agri-tourism can be an alternative tourism activity and assess the impressions of the community in developing Cavite as an Agri-tourism site. To answer specific questions on agri-tourism activities, the research will look at the respondents' impression in agri-tourism activities, perception with regards to agri-tourism activities compare when grouped accordingly, and a comprehensive review to the farm tour site potentials in Cavite.

**METHODS**

The researcher used a descriptive type of research in presenting the data that were gathered from the respondents and survey type with the use of closed-ended questionnaires. A documentation analysis to determine facts and information about the status and existing agritourism activities, identifying farm sites, and other documents. The first part is for the profile of the respondents. The second part measured the respondents' perception of the agri-tourism activities in Cavite. The third part of the questionnaire assessed the respondent's impressions on the farm tour site potential. To make the responses easily understood and to ensure simplicity, the five-point Likert scale was also used.

**RESULTS**

There is no significant difference in how respondents rate the perceptions on agri-tourism activity in Cavite as to their profile and when groupings are considered. The strength of the study shows a great way in farm hosting and homestay program shall be the main focus to be developed and enhanced. The program shall highlight the potentials and existing features of farms and farm products such as flowers, vegetables, and other crops as a form of rural tourism. Tourism activities in this manner shall complement the provincial administrator's concern on agricultural development where alternative employment shall be provided and entrepreneurial skills of people in the countryside will be developed and enhanced.

**DISCUSSIONS**

The result of the study highlights the agri-tourism stakeholders to develop a unique package in the agri-tourism industry. This study will develop a unique packaging and branding Cavite as new alternative tourist activity enhancement of agri-tourism attraction. In conclusion, the findings of the study aim to contribute the proposed Agri-tourism Program Cavite Province, Philippines and make a new direction in agricultural and tourism growth as a business activity.

**KEYWORDS:** Rural and Green Tourism, Alternative Tourism, Farm Tourism

**SUBMISSION ID: R04A-CAVITP-0255**

## **An Assessment of the Kambingan Festival of Tuy, Batangas: Its Impact to the Tourism Industry and Culture of Tuynians**

Alvin Punongbayan, Bilaran National High School

### **Abstract**

#### **INTRODUCTION**

Kambingan Festival is a town festivity celebrated annually on the founding anniversary of Tuy, Batangas. Nowadays, millennials have little knowledge, or sometimes none, about their own culture and tradition. This research aimed to determine the impacts of Kambingan Festival on the Tourism Industry and Culture of Tuynians.

#### **METHODS**

The descriptive method of research was utilized by the researcher in this study. There were 108 respondents composed of the Municipal and Barangay Officials. Data were gathered through questionnaires.

#### **RESULTS**

1. Kambingan Festival is shared and known by Tuynians regardless of age, gender, civil status, and religion.

The respondents agreed that Kambingan Festival was promoted, prepared, participated and implemented successfully.

The respondents perceived that Kambingan Festival had an impact on the Tourism Industry and Culture of Tuynians by promoting Tuy, Batangas as a tourist spot in District I of Batangas and training Tuynians to be more hospitable.

Respondents' perceptions of the impacts of Kambingan Festival to Tourism Industry were connected to their demographics in areas of civil status, gender, and religion, but showed no relationship with regards to age. There were also no relationships on their perceptions to the impacts of Kambingan Festival to Culture.

#### **DISCUSSIONS**

The results call for the review and implementation of the proposed cultural model for the improvement of the implementation of Kambingan Festival.

**KEYWORDS:** Kambingan Festival, Tourism Industry, Culture, Tuynians, Celebration

**SUBMISSION ID: R04A-BATANP-0009**

## **Benchmarking Total Quality Service of Agritourism Sites in Calabarzon Region**

Katrina Eunice Cenizal, Ternate National High School

### **Abstract**

#### **INTRODUCTION**

To equip farm-bound stakeholders and entrepreneurs with the knowledge and expertise in enhancing the quality of experience in their farmlands thru tourism and travel, discovering livelihood opportunities in farm tourism, best practices and success farm sites in CALABARZON. In this study, one model from the local province provided inputs on how they were able to improve the living conditions of their farmers and farm owners using tourism as their benchmark.

#### **METHODS**

A content analysis of the papers was undertaken to learn from best practices in CALABARZON. Structured questions were used to enable the theme editors to reflect on the rationale for the theme issues and questions. The study used the comparative method in presenting the data. The survey was conducted in each agritourism site through a purposive cluster sampling. The respondents of the study were the tourists inside the farms during the administration of the survey. The study used a Likert scale to attain the desired output. Percentage and frequency were used to determine the profile of the respondents while the weighted mean was used in the determination of the perception of the respondents in the uniqueness of products and services of each farm.

#### **RESULTS**

This summary highlights the most significant outcomes in terms of the contributions to knowledge and/or professional practice, and also the implications for management action and applied research aroused from the review of best practices in CALABARZON. Some of the innovative approaches were identified which can be adopted by agritourism from Costales Nature Farm in Majayjay, Laguna. While sites from Teofely Nature Farms in Silang, Cavite, Kahariam Realty Farms in Lipa, Batangas Flor's Farm and Garden in Antipolo, Rizal and Lukong Valley Farm in Dolores, Quezon highlighted factors that have prevented agritourism from flourishing. These include lack of marketing and infrastructure support, capacity building of local government units, and technical vocational training for farm tourism operators and practitioners. There is also inadequate knowledge on manpower needs and sustainable practices, lack of integration of hospitality programs and assistance for farm sanitation and energy management.

#### **DISCUSSIONS**

This study envisioned to close the gap and to guarantee a harmonized approach of development, monitoring, and evaluation across all partner agencies that will make the Philippines benchmark with progressive farm tourism.

Therefore, better implications for management action and applied research arising from the review of best practices in Costales Nature Farm in Laguna a premiere farm tourism sites in the CALABARZON may be adopted.

**KEYWORDS:** Benchmarking, Rural tourism, Quality Service, Sustainable development, Sustainable tourism, Innovations, Responsible tourism

**SUBMISSION ID: R04A-CAVITP-0242**

## **Butanding (Rhincodon Typus): A Key for Progress of the Municipality of Donsol**

Matt Ocharan

(Adviser: Julius Caesar Averilla)

### **Abstract**

#### **INTRODUCTION**

Donsol used to be a sleepy coastal town in the Province of Sorsogon. Today, the relative peace being enjoyed by this town is disturbed by the arrival of the Butanding (Rhincodon typus), which has become the showcase of its incipient tourism industry. The sudden influx of visitors caught the local officials, including the residents, flatfooted. The attraction of the Butanding is not at all surprising because it is rarely found in other parts of the world.

#### **METHODS**

The study administered 25 respondents coming from different resorts, staff, tourism office, and the LGU of Donsol. This study used the descriptive-survey method. The descriptive was used to identify frequencies, average, and other calculation to utilize the gathered data describing, characterizing and providing a picture of the capability, understanding, and knowledge in our nature to preserved and protect the Butanding (Rhincodon typus). The researcher sought the cooperation of the resorts and LGU Donsol in answering the test survey questionnaire that helps the researchers in making a valid conclusion for the study.

#### **RESULTS**

The study further revealed that to enhance the tourism industry of Donsol the Local Government Unit of Donsol must build some infrastructures like museum and food chains/ restaurant. The study found that most of the existing infrastructures are way popular in the tourism industry but were threatened by stiff competition, during the summer seasonn, these infrastructures have a greater opportunity to have higher arrival of tourist, thus, increasing their income. During a typhoon, these infrastructures will threaten their income. The study also revealed that Butanding was one of the endangered species, and considered as a tourist attraction in Donsol. Most of the respondents have expressed fondness as it is a gentle type of fish compared to other big fish. The benefits to the people of Donsol from the presence of butanding imply that jobs will be more stable, while the butanding can be protected and preserved through implementing policies and proper waste disposal.

#### **DISCUSSIONS**

Based on the findings, the Local Government Unit of Donsol shall have a seminar to all resort's owners along with their staff, LGU officers and personnel for the tourism office to give them ideas on how to manage their business and how to protect butanding, the main source of their income.

**KEYWORDS:** Butanding, Progress, tourism

**SUBMISSION ID: R005-SORSOP-0004**

## **Increasing the Rate Tourism in the Municipality of Pilar through Parau Festival**

Raiza Lucido

(Adviser: Zaldy Jazareno)

### **Abstract**

#### **INTRODUCTION**

The Philippines is one of the most visited places in Asia and the government is focusing on attracting people to come to our country as it substantially helps raise the country's economy. Celebrating fiesta is part and bundle of Filipino culture. Pilar celebrates its "Parau" festival, in celebration of the Feast of the Our Lady of the Pillar. In this study, the researcher observed that millennial nowadays have already forgotten the local culture especially in celebrating festivities, hence, this paper was designed to make necessary propaganda and strategies in promoting local culture.

#### **METHODS**

In order to achieve the aim of the study, a descriptive research method was used which includes interview, questionnaires and other documents for gathering the information. The data accomplished from the survey forms were statistically treated by the researchers. The Tourism Officer and the Mayor were interviewed to gather more data with regards to the celebration of the Parau festival. Hence, pamphlets and flyers highlighting the festivities and delicacies of the event were distributed to residents for promotion and awareness.

#### **RESULTS**

With the objective of Parau festival, which is to promote tourism through the celebration of the festival, time will come that Pilar will be well-known in other towns and municipalities. Through our own little ways, the researchers believe that there is a need to conduct the study of the Parau festival as a part of Bicolano culture that needs to be preserved and promoted to boost local tourism. Unfortunately, we have observed that the culture of celebrating fiesta has been forgotten by some and that is why there is a need to revisit and revive the culture again, which is only celebrated once a year. Furthermore, through this problem, we have crafted mini pamphlets and flyers and distributed it to the residents of Pilar for awareness and promotion to our fellow Pilareños.

#### **DISCUSSIONS**

Tourism has become a phenomenon of everyday life for hundreds of millions of people today. Cultural/heritage tourism is one of the fastest growing segments of the tourism industry because there is a trend toward an increased specialization among tourists. Especially, Filipino's interest in traveling to cultural/heritage destinations has increased recently and is expected to continue. The objectives of the Parau festival is to promote the local tourism, hence, it will be known by other towns and other municipalities through the propaganda in promoting the festivities that are part of our lives.

**KEYWORDS:** Parau Festival

**SUBMISSION ID:** R005-SORSOP-0028

## **Millennials' Awareness in Cultural Festivity**

Enrico D. Mendoza, Pulo National High School

### **Abstract**

#### **INTRODUCTION**

With the continuous innovation and changes in our society, students nowadays are getting more inclined to technological trends, and get themselves more exposed to different modernized community-activities. As a result, the culture and traditions of the community gradually deteriorate along with the celebration of local festivities. In this study, the researcher assesses the level of cultural awareness of the students of Pulo National High School in Batingaw Festival.

#### **METHODS**

In this study, the first linking of data happened at the design-level with the used of sequential design, where the results from the first phase of the research were used to build the second stage of the research design. In order to assess the level of cultural awareness, the point of argument and areas of convergence between qualitative and quantitative phase were dissected in the final analysis phase, or an overall understanding developed through the integration of data strands (Teddie, Charles, and Abbas Tashakkori 2008). The sample quotes from the qualitative interviews were compared and contrasted to the result from the statistical analyses of the survey data.

#### **RESULTS**

The respondents evidently showed a lack of knowledge about the local Cultural Festival celebrated in Cabuyao despite its annual celebration. This implies evidence of the weakening the bond between the youth and their local culture. The lack of knowledge about the City's Batingaw Festival can be drawn from a variety of causes. Residency, lack of promotion, and passive community involvement are the common reasons found. Lack of promotion of the said festival was also a root cause since the celebration is not as widespread as other cultural festivities in other localities, which exert an extravagant amount of time and money for the event. Furthermore, other respondents were also found to be disinterested in community involvement which led to their lack of knowledge about the city's Batingaw Festival.

#### **DISCUSSIONS**

The deteriorating bond between the youth and local culture, specifically, the celebration of Batingaw Festival is a product of multiple causes that each needs to be solved in order to strengthen the ties between the culture perpetuators and culture itself. Lack of promotion and passive community involvement needs to be recognized as a major problem. This necessitates the formulation of ideas that will promote the festival to reach the majority of the youth and to raise intrinsic motivation among them.

**KEYWORDS:** Millennial, Cultural Festivity, Awareness, Batingaw Festival

**SUBMISSION ID: R04A-CABUYA-0071**

## **Modes of Reservation in Different Resorts in San Juan, Batangas**

Lanie A. Rivera, Department of Education Laiya National High School  
(Adviser: Rhea Masalunga)

### **Abstract**

#### **INTRODUCTION**

Philippine is composed of more than 7,000 islands which hold various tourist destinations such as beaches, heritage towns, and monuments, mountains, rainforest, islands and diving spots. The country attracted a total of 5,360,682 foreign visitors in 2015 through its successful tourism campaign of "It's More Fun in the Philippines". In 2017, foreign arrivals peaked at 6,602,908. In 2015, the travel and tourism industry contributed 10.6% to the country. Laiya, San Juan, Batangas is one of the top destinations in the Philippines. There are various platforms through which guests reserve accommodation in various resorts. This study aims to know the modes of reservation of guests in various resorts in Laiya, San Juan, Batangas.

#### **METHODS**

The researchers used the descriptive design of quantitative research. Purposive sampling was used to identify the participants. The respondent is guests from the different resort in San Juan, Batangas, such as Acuaverde Beach Resort and Hotel, Calubcub Bay Beach Resort Recreation, Landco Pacific Corporation, Old San Juan Hotel and Restaurant, Paseo Verde Beach Resort, and Sabangan Beach Resort. In all, there were 261 participants in the study. The data were gathered through a survey questionnaire. It was given during the immersion period of learners in the said resorts. Data were analyzed using frequency and graphs.

#### **RESULTS**

Most of the guests from the participating resorts agreed that the website is the most frequently visited platform for reservation of accommodation in Laiya, San Juan, Batangas. In Acuaverde Beach Resort, Landco Pacific Corporation, Old San Juan Hotel and Restaurant, Paseo Verde Beach Resort, and Sabangan Beach Resort, a website ranked first. In Calubcub Bay Beach Resort and Recreation, Facebook ranked first. Based on the result of the study, 86 guests responded to the website as the mode of reservation. This was followed by Facebook which has 51 respondents. Travel agency/sites ranked third with a total of 20 responses. Advertisements got no response.

#### **DISCUSSIONS**

The researchers recommend that every resort in San Juan, Batangas must have their own website in their resort. In that way, every guest who wants information about them will easily find about the resorts. It is also recommended for tourist to look at the website of their chosen resort as it was found to be the best mode of reservation. And for teachers, they must teach their learners how to accept reservation through the website. More so, they must teach learners how to handle online reservations.

**KEYWORDS:** modes of reservation, Laiya, resorts

**SUBMISSION ID: R04A-BATANP-1244**

## **Project Media: T-Shirt Design Promoting Padre Garcia's Tourism**

Cecile De Chavez, Padre Garcia National High School Batangas Province

### **Abstract**

#### **INTRODUCTION**

Located between Lipa City which is known for its rich history and San Juan which is known for its beaches, Padre Garcia, Batangas has been left behind in the tourism sector though it has been popular among cattle traders with its largest livestock auction market in the Philippines. With the lack of tourism strategies for the town, the researcher chose to promote tourism in Padre Garcia through T-shirt designing.

#### **METHODS**

The researcher used quantitative research to determine the most preferred T-shirt design of the local officials, students, and teachers. Five approved designs by the Department of Tourism of Padre Garcia were produced to represent the tourism industry of Padre Garcia. Using descriptive-survey through a written questionnaire, it determined the quality of the design, image of Padre Garcia, and the most preferred T-shirt design by the respondents.

#### **RESULTS**

The findings show that Padre Garcia municipal employees and Grade-12 students have the same preferred design which is "Kabakahan Shirt" while Padre Garcia National High School teachers preferred "Garcianos' Church".

#### **DISCUSSIONS**

The T-shirt designs will enhance the image of Padre Garcia, Batangas.

**KEYWORDS:** Challenges in Tourism; T-shirt Designs; Destination Image; Survey; Philippines, Asia

**SUBMISSION ID: R04A-BATANP-0203**



## **Strengthening the Sense of Tourism and Promoting the Development of Malagaslas Spring at Paliparan, Laurel, Batangas**

Pauline Maristela

### **Abstract**

#### **INTRODUCTION**

Throughout the world, tourism is one of the most significant considerations that every country, city or town must be proud of. In the Municipality of Laurel, there is a great potential for its tourism to become a pathway in generating jobs and income creation. The natural beauty of nature is given but there might be a lack of development and promotion. Malagaslas spring is just one of the tourist spots that can be found in Laurel and is considered as a major tourist destination. In this study, it assessed the different activities conducted by the Local Government Unit and the people in strengthening the sense of tourism in Laurel, Batangas.

#### **METHODS**

Descriptive Quantitative design of Research was utilized in this study and with the used Quota Sampling Method, the researcher used 50 residents of Barangay San Gabriel and another 50 from Paliparan, Laurel, Batangas as the research respondents.

#### **RESULTS**

The researcher found that the number of tourists who visited Malagaslas Spring was not consistent from the year 2015 up to the year 2017. For the past three years, there was a decreasing number of tourists. Meanwhile, through hospitality, the people of Laurel managed to build a good image of tourist destination among tourists, showing that hospitality is truly a great trait of Filipinos. Marketing of tourist destinations is a great help in strengthening the sense of tourism that should be compiled by the Local Government Unit and making the town accessible through developing transportation system networks and infrastructure development program.

#### **DISCUSSIONS**

The results demonstrate the need in disseminating the results to the Local Government Unit and the people to let them be informed about the current status of tourism of Laurel and the activities that need to be strengthened as well. Tourism may be a great contributor in generating jobs and creation of income, but without proper support from the LGU and the people, it would be a great loss. Thus, strengthening the sense of tourism, starting with the major tourist destination of a place, must be at work.

**KEYWORDS:** Strengthen, Tourism, Promote, Malagaslas Spring

**SUBMISSION ID: R04A-BATANP-0655**

## **The Micro Cuisine Industry in Region III**

Juan A. Asuncion, Jr., PUP

### **Abstract**

#### **INTRODUCTION**

The micro cuisine industry in Region III focuses on the culinary business challenges and copes with the new trends. The study provides solution to the different challenges including the need to improve the gastronomic offer at a medium end, globally create and position a brand image of products, set up a chain of restaurants where foreigners and locals can participate not only as distribution channels but also as country image channels; and become a reference in education and training of innovative creators in the culinary world.

#### **METHODS**

A researcher-made questionnaire was employed to gather the necessary data to support the study. Frequency and Percentage Distribution, Weighted Mean and ANOVA were utilized as statistical tools.

#### **RESULTS**

The culinary business opportunities of the tourism industry in terms of financial aspects are strongly agreed by the respondents based on the group of business organization, except capitalization which is only agreed. In terms of market, product, investments and regulatory aspects, the respondents agreed on all of the business organization. For the business rivalry, market, ease of entry, customer's bargaining force and competition aspects, the respondents agreed on all of the business organization. Moreover, in terms of culinary business threats of the tourism industry for supplier/customer, the respondents strongly agreed upon the business organization, number of years of operation, number of employees and number of branches, whereas only capitalization and type of business operation were agreed.

#### **DISCUSSIONS**

This study aimed to know the micro cuisine industry in Region III. The business owners were randomly selected from the mentioned locale. The local government may want to revisit the necessary documents that micro cuisine businesses need to comply and submit; they may shorten the processor should not be too strict in the application process. They may also review the required documents and just ask the owners the most important papers. The micro cuisine industry may want to create a video that highlights the authentic local foods of the region that will entice travelers and visitors to visit their place. The industry must make sure that they provide "quality" food experience through the food offerings that they serve.

**KEYWORDS:** opportunities, threats, culinary business, micro cuisine industry

**SUBMISSION ID: NCR1-MANILA-0005**

# URBAN PLANNING

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**King of the Road's Royal Transformation: A Descriptive Analysis of the Jeepney Modernization Program on the Lens of Public Utility Jeepney Drivers in Laurel, Batangas**

Niña Shane Cantero

**Abstract**

**INTRODUCTION**

Jeepneys are the most common and national mode of transportation in the Philippines. The undeniable dependency of Filipinos to the said kind of transportation has unquestionably contributed to the problems we are facing today such as air pollution. Hence, the Department of Transportation came up with implementing the Jeepney Modernization Program that aims to meet safety, energy efficiency and emission standards by revamping jeepneys. As much as the environment and the passengers will be benefited by the said program, the drivers who are making a living through their jeepneys will surely be as affected. In this study, we recognized the insights of jeepney drivers on the Jeepney Modernization Program that may pave the way on finding solutions to the problems encountered by the government, passengers and especially Jeepney drivers throughout the implementation of the said program.

**METHODS**

A descriptive qualitative method of research was used where an interview with Public Utility Jeepney (PUJ) drivers in Laurel, Batangas was used as the data collection method. Through purposive sampling, 3 PUJ drivers answered researcher-made questions and served as the primary source of information. The qualitative approach of analyzing the data gathered focused on identifying and describing the Jeepney Modernization Program as perceived by jeepney drivers.

**RESULTS**

The jeepney drivers who participated in this study perceived the Jeepney Modernization Program as the transformation of jeepney units that will help in resolving jeepney-related problems. Despite their awareness, they expressed their disagreement on modernizing jeepneys because of financial reasons like a large amount of money is needed, it is unaffordable for most of the jeepney drivers and will most likely lead them to have additional expenses. The PUJ drivers chose to keep on using the accustomed jeepney structure and just have jeepney repair and maintenance instead of fully-transforming public utility jeepneys. Amidst all of this, jeepney drivers are hoping for assistance from the government throughout the implementation of the Jeepney Modernization Program.

**DISCUSSIONS**

The results demonstrate the need to review the Jeepney Modernization Program to be able to implement it successfully and have the jeepney drivers cooperate in the said program. The government shall hear the doubts and worries of jeepney drivers who will be directly affected by the Jeepney Modernization Program. Hence, all the problems regarding its implementation will be erased.

**KEYWORDS:** Jeepney, Jeepney Modernization Program, Transformation, Descriptive

**SUBMISSION ID: R04A-BATANP-1729**

## **The Profile and Awareness Level of Grade 7 Student Dengvaxia Recipient**

Deby Dela Cruz, NAIC NHS  
(Adviser: Loida Arce)

### **Abstract**

#### **INTRODUCTION**

The DOH-Epidemiology Bureau showed that January 1 to November 17, 2018, (179 540) dengue fever cases were recorded and reported nationwide more than 135,166 cases in the first 11 months of 2017. A dengue virus vaccine was developed not only to prevent first infections but to avoid severe disease that may occur upon second and third infections. This research is important to know the profile and level of awareness of Dengvaxia Recipients in Naic National High School.

#### **METHODS**

A multiple methods design was used. Using a dichotomous and open-ended type of question, the researchers gained the profile and awareness level of dengvaxia recipients in Naic National High School. The selected subject for the study was the Grade 7 students that are total of 658, but only 546 recipients participated.

#### **RESULTS**

This research found that Dengvaxia Recipients of Grade 7 in NNHS are 658. Five hundred forty-six (546) which is 82.98% are the total number of respondents with 275 males, which is 50.37%, and 271 females which is 49.63%. Most of Grade 7 students Dengvaxia Recipients in Naic National High School have low awareness level. Three hundred six or 56.04% of respondents were influenced by the people around them to take Dengvaxia, and two hundred forty (240) or 43.96% of the respondents were not. In 546 respondents, 36 or 6.57% of them experienced dengue, and 510 or 93.07% of them haven't.

#### **DISCUSSIONS**

The results demonstrate that the Grade 7 Dengvaxia recipient in Naic National High School has low awareness level. The study found that there are 79 students that are not listed on the official list of dengvaxia recipients in the school. More than half of the respondents were influenced by the people around them to take dengvaxia. Lack of awareness may lead a person or students in danger. Students, parents, and school should be apprehensive before they offer and accept something especially medicines and vaccines.

**KEYWORDS:** DENG VAXIA, AWARENESS LEVEL, PROFILE

**SUBMISSION ID:** R04A-CAVITP-0045

# **WATER ENGINEERING**

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## **"Gravity and Dual Porosity Hydro-Purifying System"**

Coleen Moira O. Sarmiento, Tagaytay City Science National High School  
(Adviser: Mark Anthony Rellores)

### **Abstract**

#### **INTRODUCTION**

Every kind of community has its own genuine needs that require specific resolutions. Living in highlands associates a different kind of problems with the needs of society like the source of water. Tagaytay is also experiencing this kind of difficulty where the water is not enough to supply all the major establishments and households in the vicinity. This project will provide more sufficient and safe drinking water for everyday consumptions. As there is an increasing number of infrastructures in Tagaytay, it comes with the great demand for water supply. It is evident that Tagaytay does not have a natural water source and is only depending on neighboring towns and provinces. Using rainwater as a supporting source of potable water is a reliable solution for various water problems. Rather than allowing rainwater to run off, accumulation and storage of rainwater may be reused on-site. Cleaning and cooking can also be at ease with much sustenance of clean water.

#### **METHODS**

The project will be useful to Tagaytay City Science National High School. The "Gravity and Dual Porosity Hydro-Purifying System" uses rainwater as its source that will give the school its own water supply. The system also alkalizes the water which makes it safe to drink and beneficial to the health of the students and school personnel that will use the drinking faucet. Imitating nature's own processes to filter water. The system requires no chemicals and low energy to clean the water. The whole process only needs power for the pumps to collect the treated water in a storage tank and lift the water to the drinking faucet.

#### **RESULTS**

After the water quality analysis, the results showed that rainwater was purified and can be used for drinking water. Through the use of the calcium carbonate of layers of eggshells and stones to increase the alkalinity level, it showed a good result.

#### **DISCUSSIONS**

The study showed a favorable result due to the ability of the eggshell to purify rainwater and turn it into a portable one. Eggshell, as the innovation of this study and as the alternative for calcite stones, proved that it can remove harmful substances from the water. Also, the study showed that water has a higher alkalinity level that is beneficial to a person's health.

**KEYWORDS:** calcium carbonate, eggshell, gravity, water quality, alkalinity

**SUBMISSION ID: R04A-CAVITP-0354**

## **Automatic Moisture-Sensing Plant Watering Device**

Kyla Mae N. Baldoza, Bula National High School  
(Adviser: Jean J. Pesimo)

### **Abstract**

#### **INTRODUCTION**

People should exert effort and time to maintain a green environment. In this case, offices and indoor decoration use more plastic plants to avoid hassle and interruption in their work and daily activities. With this, the researchers developed an Automatic Moisture- Sensing Plant Waterer to lessen people's effort in watering indoor ornamental plant.

#### **METHODS**

The study used the developmental method of research. The device developed was validated by experts and had undergone proper dry run. The instruments used in this study are the Automatic Moisture-Sensing Plant Waterer and survey questionnaires that contain question about the acceptability and effectiveness of the device

#### **RESULTS**

The device has simple features and was user-friendly. This was effective and was highly accepted by the respondents. Thus, Automatic Moisture- Sensing Plant Waterer is a very useful device in maintaining the ornamental plant alive.

#### **DISCUSSIONS**

Automatic Moisture-Sensing Plant Waterer was found effective by the respondents because of its simple features that make it pleasing to the eyes. Also, it replaces plastic plants as decoration which makes it eco-friendly. It is also hassled free to its users because of its automatic sensor that prevents water to spill in its surroundings

**KEYWORDS:** Automatic Moisture-Sensor, Plant Watering Device

**SUBMISSION ID: R005-CAMSUR-0084**



## **The Use of Pineapple Leaf Fibers in the Removal of Total Suspended Solids on Sample River Water**

Early Ann Anglo, Nicolene Anglo, & Jean Pearl Arco, Bucal National High School

### **Abstract**

#### **INTRODUCTION**

Water is one of the precious natural resources present on Earth. Due to various human activities, some water became polluted that no one can use it anymore and to the point that it can also harm human's health. Normally, polluted water contains Total Suspended Solids that can cause disease to marine life, can be the cause of their death and can cause to their extinction. Total Suspended Solid include anything drifting or floating in the water, from sediment, microplastics, silt, and sand to plankton and algae. Since pineapple leaf fibers can filter arsenic, the researchers thought that it can also filter Total Suspended Solids and decided to create a device that can filter it.

#### **METHODS**

The organic filtering device was constructed following an approved design with 100 g of Pineapple leaf fibers as the main subject for filtering Total Suspended Solids. It was tested for functionality and efficiency by measuring and noting down the amount of Total Suspended Solids in the sample liquid before and after filtration using the device. The researchers tried to find out whether there exists a significant difference in the amount of Total Suspended Solids before and after filtration.

#### **RESULTS**

Results reveal that before filtration, the amount of total suspended solids in a 200 ml water sample is 25.7 grams. On the other hand, the amount of total suspended solids after filtration is 5.1 grams. This results in a difference of 20.6 grams before and after filtration.

#### **DISCUSSIONS**

Results show that there is an 80.16% percent reduction in the amount of total suspended solids in the water sample. This means that the water filter used is effective in filtering total suspended solids in water samples.

**KEYWORDS:** Pineapple leaf fibers, Total Suspended Solids

**SUBMISSION ID: R04A-CAVTP-1549**

# **WOMEN'S AND GENDER STUDIES**

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## **Early Pregnancy Intervention Module**

Shiela D. Gloria, Department of Education - Sarangani

### **Abstract**

#### **INTRODUCTION**

Early engagement in sexual activities is a huge problem nowadays that place the learners at high risk for a negative response towards their studies. The case study was conducted to showcase the determining factors of the early engagement of Junior High School learners in sexual activities, to learn about its hindrance to the learner's achievement and to bring out how effective the school's intervention in addressing the problem.

#### **METHODS**

The data gathering will be done by identifying the first student's qualification as an informant of the study. An unstructured interview will be done next as a tool for identifying the cause of the problem. Afterward, the researcher will analyze the data, in the form of field notes and interview transcripts, and formulate presumptions as an output of the study.

#### **RESULTS**

Tackling about Engagement of Junior High School in Teenage Sex requires the schools to provide an intervention to change the students and parents approach on how to manage this phenomenon. Factors at school-level play an important role in the causes that lead the student engagement to teenage sex. All the aspects that lead them to these situations should be prevented through some activities that planned throughout the school year. It was then recommended that parenting seminar should be conducted to the parent and a symposium of "True Love Waits" and also sports activities should be conducted to all the learners of Malandag National High School, and that future studies conducted covering behaviors of learners towards their achievement of goals.

#### **DISCUSSIONS**

Results revealed that family background, social media, peer influence, and social environment were factors of Junior High School Students in Malandag National High School in engaging of teenage sex. On the same hand, engagement of such experience is one of the factors that is hindering in their studies.

**KEYWORDS:** teenage sex;

**SUBMISSION ID: R012-SARANG-0194**

## **Degree of Consciousness in Gender and Development in Relation to Social Interaction of the Senior High School in Santa Cruz, Laguna**

Ramirez, Reziel S., Gov. Felicisimo T. Sanluis Integrated Senior High School

### **Abstract**

#### **INTRODUCTION**

This study determined the consciousness in gender and development issues in relation to the social interaction of senior high school students in Santa Cruz, Laguna. Specifically, it countered the degree of consciousness of students in gender and development issues in terms of gender equality; gender rights; gender role and gender participation. Also, the status of school gender establishment in terms of school management and structure and school environment and gender responsive instruction. In addition, the degree of social interactions of the senior high school (SHS) students in terms of school, household, peers, and community and church. The degree of consciousness of students in gender and development issues was analyzed to understand if it is significantly related to the social interactions of senior high school students.

#### **METHODS**

Descriptive method of research was utilized as this design fits the nature of the study. It uses the description, recording, analyzing and interpreting of conditions that exist at the time of the study. Preparation of the researcher-made questionnaire was followed in order to obtain the necessary data. Face validation of the contents of the questionnaire was done by the adviser of the researcher and other persons with specialization in the field was considered in this study, such as registered guidance counselors in Santa Cruz, Laguna. Afterward, a set of questionnaires was administered.

#### **RESULTS**

The status of school gender establishment in terms of school management and structure, school environment and gender responsive instruction resulted in very highly adequate as perceived by the SHS students. The degree of social interactions of the senior high school student at school, household, peers, community and church resulted to very high degree. The degree of consciousness in gender and development issue has no significant relationship in the social interaction of the SHS students. However, in terms of gender rights has significant relationship in the social interaction of the senior high school students at household and church interaction.

#### **DISCUSSIONS**

The main social institution for the development of the minds of the youth may create an equal opportunity towards the whole development of students in terms of personality, acquisitions of life skills, critical thinking skills, social awareness and becoming responsible citizen. Integration to evaluate opportunities for social interactions with others in the curriculum is very important for the development for all the students. It should pose a call to the curriculum planners to strengthen the value of equality in the curriculum by including a subject which teaches real-life application of equality among Filipinos. Future researchers are advised to conduct in-depth study on gender empowerment, gender equality and gender roles in different places and settings, considering further variables not considered by the present study due to limited time among others.

**KEYWORDS:** Degree of Consciousness, Gender and Development, Social Interaction, Senior High School Students.

**SUBMISSION ID: R04A-LAGUNA-0442**

## **Women's Participation in the Conservation of Marine Protected Areas (MPAS) in San Juan, Batangas**

Jhimson V. Cabral, MAED, Buhaynasapa National High School

### **Abstract**

#### **INTRODUCTION**

The topography of San Juan, Batangas made it obtained the highest number of Marine Protected Areas (MPAs) in the province. Last 2013, the municipality was awarded for having the Best MPA Initiative by the BRAVO MPAs. It indicates that the municipality is empowering the communities to help in conserving its MPAs. However, it is imperative that this initiative should be inclusive and participatory among its constituents, especially women. As such, this study aimed at determining the extent of involvement of women in conserving the MPAs of San Juan, Batangas.

#### **METHODS**

This study used the descriptive-correlational method with the questionnaire as a research instrument. The respondents were 287 women of San Juan, Batangas residing near the declared MPAs of the municipality; obtained through purposive sampling. The researcher sought the approval of the authorities before personally administering the research instrument used.

#### **RESULTS**

As revealed in the study, there are 13 MPAs in San Juan, Batangas divided into three categories; marine sanctuary (507 hectares), marine reserves (209 hectares), and mangrove forest conservation area (262 hectares). It also revealed that 43% of the women-respondents are in age ranging from 21 to 40; 63.07% are married; 52.96 are high school graduates; 51.22% are unemployed, and 33.45% are not members of any civic-related organization. On the other hand, the respondents have enough knowledge about MPAs based on the generated composite mean of 2.92. However, they are not aware that there are 13 MPAs in the municipality. Women in San Juan, Batangas are also slightly participating in initiatives relative to protecting and preserving its MPAs as evident on the generated average composite mean of 2.22. Joining local MPA-related organizations is the least participated. Using paired sample t-Test, this study revealed that there are significant differences in the women's participation in protecting the MPAs when grouped according to their profile. It is evident on the obtained p-values lower than 0.05 level of significance.

#### **DISCUSSIONS**

The study revealed that most of the respondents are in age ranging from 21 to 40, married, high school graduates, unemployed, and are not members of the civic-related organization. They have enough knowledge about MPAs; however, they must be educated more about the MPAs in their municipality. They are also slightly participating in initiatives relative to conserving it. As such, joining local MPA-related organizations must be emphasized among women.

**KEYWORDS:** women, marine protected areas, MPAs, participation, San Juan, Batangas

**SUBMISSION ID: R04A-BATANP-1356**

## **Raising Awareness of Gender Sensitivity in San Fernando Elementary School Teachers**

Josephine Malabuyoc, Teacher I

### **Abstract**

#### **INTRODUCTION**

San Fernando Elementary School is an advocate of Gender Sensitivity to which respect the different sexuality of all the pupils. As an institution of learning, teachers must be fully equipped in dealing every pupils with different sexual preferences. . The study was to raise the awareness of San Fernando Elementary School Teachers in gender sensitivity. It determines teachers' gender sensitivity awareness based on attitudes, teachers' gender sensitive inside the classroom, and their general perception of what is gender sensitivity. This is to support the Department of Education Commitment to Gender and Development related provision in the local, laws, policies agreements, memoranda, orders and circulars, and other responsive interventions initiated by the department and by other government and non government entities.

#### **METHODS**

The qualitative method of research was used in this study with the questionnaire as the main data gathering instrument. There were 9 teachers who serves as respondents of the study. One method to collect data is to use interview.

#### **RESULTS**

The interviews revealed that the San Fernando Elementary School teachers have thought of the theme covered. Everyone was open with their backgrounds, opinions, and experiences. Most of the interviewees agreed on the topic covered even though some variations between the answer were found too.

#### **DISCUSSIONS**

This study was designed to increase gender sensitivity awareness in elementary school teachers with respect to students using professional development methods with a group of teachers, the researchers attempted to help them become more aware of gender sensitivity in technology instruction. An analysis of the data revealed that teachers who were exposed to gender sensitivity professional development training sessions were more likely to exhibit gender sensitive teaching behaviors that they did prior to sessions. The data also indicated that the teachers provided more equitable assistance to their classroom students after being presented with gender sensitivity interventions.

**KEYWORDS:** gender sensitivity, gender and development, responsive intervention

**SUBMISSION ID: R04A-BATANP-2158**

## **Perceptions on Gender Differences and Sensitivity of the Students in San Luis Senior High School**

Reann Cae O. Ilagan, Department Of Education Batangas: San Luis Senior High School

(Adviser: Jenny Lou Guansing)

### **Abstract**

#### **INTRODUCTION**

Gender influences people's roles, relations, interests, sense of well-being, as well as with the career decisions. This paper considers the perceptions on gender differences and sensitivity of the students because the researcher noticed that this matter is one of the most common issues that fails to be prioritized and developed in the society. Furthermore, the pursuance of this research paper is due to the current situation and personalities of the students in our school.

#### **METHODS**

The mixed method of research was employed in this study with 100 students and 10 teachers as the respondents. The descriptive quantitative method of research was utilized in determining the extent of the students' perceptions on gender differences and sensitivity as well as ascertaining if there is a significant difference between the assessments of the students and teachers. The qualitative method of research through interview was used in revealing how gender differences influence the learning behavior of the students.

#### **RESULTS**

It was revealed that the students' perceptions on gender differences and sensitivity was to a great extent, as assessed by the students and teachers with the average weighted mean of 3.94 and 4.10 respectively. There was no significant difference between the assessments of the two groups of respondents as supported by the computed  $t$  - value of 2.1583. Hence, the null hypothesis was accepted. Furthermore, based on the interviews conducted, it was disclosed that there were differences between the extent on how students gain knowledge and learn about their lectures in class. According to the two groups of respondents, female students were more motivated and attentive than male students.

#### **DISCUSSIONS**

The researcher proposed to have an intensified gender and development program in the school so as to widen the awareness and strengthen the gender sensitivity of the students. This can be done through learners' engagement in different developmental and innovational processes that will empower their gender identity. Teachers should also prioritize the integration of topics related to gender development. School administrators should introduce mechanisms to promote gender equality towards a greater representation of both men and women, as well as improving gender sensitivity of the students to ensure and build a more gender-friendly and gender-sensitive society.

**KEYWORDS:** Gender difference, gender sensitivity, learning behavior, perceptions

**SUBMISSION ID: R04A-BATANP-1307**

**Needs Assessment of Lesbian, Gay, and Bisexual (Lgb) Students of Cardona Senior High School, Cardona, Rizal, Sy 2018-2019: Basis for Lgb Students Development Program**

Christine Villaran, Cardona Senior High School, Cardona, Rizal

**Abstract**

**INTRODUCTION**

The Philippines "Education for All" (EFA) Program of the Department of Education intend to realize the needs of learners by the year 2015. Its goal number 5 declared: "Achieve gender parity by 2005 and gender equality by 2015." As such, the school as a partner of the community is mandated to offer quality education, implant appropriate values and virtues, promote respect of rights, and meet the learning needs of every student even lesbians, gays, and bisexuals (LGB). This study steered to uncover the needs of LGB students and established concrete basis for a comprehensive LGB Students Development Program. Such program is the first of its kind as no school in the entire Philippines has this kind of program yet. Hence, the study conducted is irrefutably significant.

**METHODS**

The study utilized descriptive-quantitative research designs. Purposive sampling was employed to get 30 LGB respondents or 100% of its total population. The study confined itself with LGB students who are open and proud of their gender orientation. The researcher-made questionnaire, which was content validated by research experts, was used as an instrument to gather necessary data. The study was conducted at Cardona Senior High School during SY 2018-2019. This study is anchored on Maslow's' Hierarchy of Needs. Delimited itself on the first six categories of needs only such as physiological, safety, belongingness, cognitive, esteem and aesthetic. The last category, which is self- actualization, was not included as it is not applicable to the respondents.

**RESULTS**

The respondents were classified according to Gender-Orientation, Grade level, General-Weighted Average and Academic Strand. Bulk of the respondents are bisexuals, grade 12, has GWA of 85-95, and from TVL-Cookery strand. The respondents most prevailing need is love and belongingness, followed by physiological need, next is esteem need, then cognitive need, succeeding is safety and security need, and the least is the aesthetic need.

**DISCUSSIONS**

The results indicated a need for a comprehensive LGB Students Development Program to cater the needs of the respondents. Simple as it may seem, but the research piloted is unquestionably vital, as it gave birth to the Cardona Senior High School (CSHS) LGB Students Affairs Office, which implemented the LGB Students Development Program and other projects that touched the hearts, minds, and lives of the respondents making them even more productive and empowered partners in nation-building.

**KEYWORDS:** Lesbian/Gay/Bisexual/Development/LGB Needs/LGB Program

**SUBMISSION ID: R04A-RIZALP-0379**



## **Implementation of Gender and Development Program in Public Secondary Schools**

Hadji Luna

### **Abstract**

#### **INTRODUCTION**

This research determined how school heads implemented the Gender and Development (GAD) program in the public secondary schools of Surigao del Sur, Bislig City and Tandag City Divisions in terms of governance and operation, personnel development, program/activities and projects, curriculum, instruction, assessment and instructional materials; the significant relationship between the profile of schools and the level of implementation of the GAD program; the significant difference in the implementation of GAD in three (3) divisions and the problems met in the implementation of GAD program.

#### **METHODS**

The study used a quantitative-qualitative research design to assess and establish implementation of gender and development program in public secondary schools. The method was patterned from Creswel (2009) which explained that mixed methods is a research design or methodology in which the researchers collects, analyzes, and mixes both quantitative and qualitative data in a single study. Focused Group Discussion (FGD) was also employed in the study.

#### **RESULTS**

Results revealed that most of the respondents were not holders of masters and doctoral degrees, but all of them have taken the Gender and Development Program. On the level of implementation of the GAD Program, it revealed that governance and operation, personnel development, curriculum, instruction, assessment and instructional materials were implemented variedly; however, the implementation of GAD program, activities and projects (PAP's) were fairly implemented. Likewise, there was a significant relationship between the profile of the respondents and the level of implementation of GAD program but there was no significant relationship between the enrolment, number of teachers, highest educational attainment of respondents and the level of implementation of the GAD program.

#### **DISCUSSIONS**

Majority of the school heads, supervisors, and teachers were less competent in the implementation of the existing gender and development program. Regardless of gender, teachers and school heads may pursue graduate and post graduate studies and attend more seminars appropriate for their promotion, personal and professional growth, and development to increase competence in implementing a responsive GAD program. GAD implementers should also give due attention to balance implementation to the different indicators for effective implementation of the GAD program.

KEYWORDS: gender

**SUBMISSION ID: R013-SURSUR-0135**

## **Deconstructive Feminism in Selected Fiction**

Chona Andal, Department Of Education

### **Abstract**

#### **INTRODUCTION**

The continuing quest for identity and difference has become the foundation of how women must be viewed as exemplified by more and more modern philosophers and literary critics. There are varying ideals on feminist contexts from the different waves of feminism; a fact that is evident in the different intentions that each period propagates. From recognition of women's rights, to feminism of equality, to feminism of difference of the modern times; it is essential to note that analyzing literary texts embedded in this pursuit may provide further illumination on this seemingly endless probe about the nature of women.

#### **METHODS**

The study utilized qualitative method that focused on textual analysis where specific approaches such as deconstructive, sociological and feminist lenses to literary criticism served as fundamental tools in analyzing the selected texts. The studied fiction include two novels such as Doris Lessing's *The Golden Notebook* (1962) and Margaret Atwood's *The Handmaid's Tale* (1985); two short stories by Kerima Polotan-Tuvera namely *The Virgin* and *The Sounds of Sunday*, and two films specifically *May Concio's Everything About Her* (2016) and *Erin Brockovich* (2000).

#### **RESULTS**

The analysis of the specific fiction delivered various qualities of the women characters (Anna Wulf, Molly Jacobs, Offred, Aunt Lydia, Miss Mijares, Emma Gorrez, Dr. Vivian S. Rabaya, Jaica Domingo, and Erin Brockovich) such as audacity, rationality, creativity, devotion, genuineness, humility, and social involvement in terms of their strengths; and pride, sentimentalism, submissiveness, discontentment, estrangement, and cruelty as to their weaknesses. Likewise, tracing textual contradictions in the context of the sociological lens as inclined to feminist, cultural, economic, and political perspectives was deemed essential in deconstructing the women characters. The thematic connections gleaned from the studied texts embedded on deconstructive feminism provided platforms for a deeper understanding of the nature of women.

#### **DISCUSSIONS**

The identified women characters of the selected fiction depict strong characteristics such as audacity, rationality, creativity, devotion, genuineness, humility and social involvement. Invariably, these women characters likewise mirror weak attributes that include pride, sentimentalism, submissiveness, discontentment, estrangement and cruelty.

**KEYWORDS:** Deconstructive Feminism, Fiction

**SUBMISSION ID:** R04A-BATANC-0069

## **"I'm Coming Out!" an Emotional Experiences, Gender Dysphoria and Social Transitioning of Transgenders**

Josephine P. Manapsal., RPsy Ph.D., Francisco Osorio National High School

### **Abstract**

#### **INTRODUCTION**

This study described how the transgender experience gender dysphoria and their Hormonal Replacement Therapy (HRT). It also explored the physical and emotional changes happening during the process of social transitioning. There is no sufficient evidence as to how transgenderism and gender dysphoria exactly developed. It can be both genetic and environmental. However, Brody (2016) reported that "being transgender simply happens, possibly during brain development in the womb." There are many reported transgenderisms in the Philippines, however, only a few studies were conducted.

#### **METHODS**

This study utilized a narrative analysis designed to explore the experiences of seven (7) transmen and two (2) transwomen to trace the development gender dysphoria, discrimination experiences towards social transitioning or cross hormonal treatment to sexual reassignment surgery. The researcher developed, administered, a scored and interpreted the Gender Dysphoria Scale to measure the degree of gender dysphoria and the emotional profile. Then, it was confirmed through an individual semi-structured, face-to-face audio-recorded interview.

#### **RESULTS**

Severe signs of gender dysphoria are the main underlying reasons for undergoing Hormonal Replacement Therapy. Gender dysphoria is described by the respondents as the feeling an of incongruence to their mind and body connection. The only way to fight gender dysphoria is to undergo hormone replacement therapy. Through this transitioning, it is the attainment of their "real self" if not "ideal self"; for the transmen to become a real "man" and for the transwomen, to become a real "woman."

The effects of hormonal replacement very differently across ages, genetic makeup and environmental factors. During hormonal transitioning, both transmen and transwomen experience mood swings due to hormonal replacement therapy. Emotional profile varies greatly depending upon the moods and social factors.

#### **DISCUSSIONS**

The experiences of Filipino transgender are not far different from other transgender in other parts of the globe. The study suggests that gender dysphoria experience may result in further investigation of genetic composition, prenatal or congenital development and other predisposing factors. There could be other possibilities to further advance the studies on gender which can also invite a multidisciplinary approach in investigating the phenomena such as religious, cultural, sociological, anthropological, philosophical, historical and psychological aspect.

**KEYWORDS:** transgenderism, queer, LGBTQA, gender expression, sexual orientation

**SUBMISSION ID:** R04A-CAVITP-0012/R04A-CAVITP-0017

## **"True Color": Level of Acceptability the Grade 12 Students of the Lgbt Community at Taytay SHS**

Jefferson Felices, Taytay Senior High School

### **Abstract**

#### **INTRODUCTION**

Students who are gay, lesbian, bisexual, and transgender (LGBT) are more likely to suffer from different abuse and violence inside the school and even in their own home. Inside the schools, nothing is more significant than making the institution safer and secure. This means guaranteeing their right to participate and be involved in different school activities. Although we have a law that is strongly written on the paper, like the Child Protection Policy and Anti-Bullying Act of 2013, with implementing policies that state that sexual orientation and gender identity is not a ground for bullying and harassments, still, it is inadequately enforced. Hence, this study sought to surface the acceptability level of the G-12 students at Taytay Senior High School.

#### **METHODS**

The researchers used descriptive statistics, frequency table to take a broad view of the finding or study. Quantitative is a research type wherein the findings can be generalized as long as it is based on a sufficient sized random sample. This study uses a survey questionnaire to be specific on a Likert scale. The respondents of this study are grade-12 students of Taytay Senior High School. This study used a non-probability sampling, wherein the probability of each element is unknown (purposive and convenient). Out of 30 respondents, 23 are females with a percentage of 76.67%, 2 are males with a percentage of 6.67%, 3 are gays with a percentage of 10% and only 1 bisexual with a percentage of 3.33%.

#### **RESULTS**

The majority of the respondents clearly agreed with the statement that everyone has the right to express individual identities and speak-out issues regard sexual orientation that is free from fear of discrimination, violence, intimidation, and prosecution. The level of acceptability of Grade 12 Students at Taytay Senior High School toward LGBT and its issues are high. The students are aware of the uniqueness of the individual. Students are tolerant of their relationship together with the LGBT community. In addition, this study concludes that religion and religious beliefs are related to how the individual accepts the LGBT people. Lastly, this study finds out that religion influence a lot of people that causes them to have fair treatment and biases among LGBT.

#### **DISCUSSIONS**

The community that promotes and fights for the rights of LGBT makes the youth become aware and make some effort to create and implement a project that centered on the welfare of the LGBT students in order for the community to accept them.

**KEYWORDS:** LGBT, acceptance, Senior High School students, Taytay Senior High School

**SUBMISSION ID:** R04A-RIZALP-0044

## **A Qualitative Study on the Impression of Grade Eleven Learners of the Integrated School of Lawa on Romantic Relationship at a Young Age**

Mark Jay Caritativo, Integrated School of Lawa

### **Abstract**

#### **INTRODUCTION**

For many high school students, having a partner is near the top of their priority list, and some individuals feel left out or even feel like a failure if they're not dated someone by the end of high school. While in the short-term having a boyfriend or girlfriend can make a high schooler happy or feel that they fit in, such a relationship can have other consequences for the individual which may not prove as positive. Sometimes having a relationship is the cause of breaking a friendship, because when the student gets into a relationship with the guy or girl, that person's friends may complain that the student isn't spending enough time with them anymore.

#### **METHODS**

This research study determined the impression of Grade Eleven learners of the Integrated School of Lawa on the romantic relationship at a young age. This study employed a phenomenological approach. The researcher wanted to know the personal experiences of the selected respondents towards the topic as we know that early mutual relationship is more popular now in our society today.

#### **RESULTS**

The respondents of this study strongly gave their impression towards romantic relationship at a young age. The romantic relationship was the product of strong connection of two opposite sex, the main reason why they want to engage in a mutual or romantic relationship was to have inspiration and to be happy as a person. Moreover, the romantic relationship should be handled by the students who engaged in this relationship responsibly. They need to manage their time and make the study as their priority than this, make the relationship an inspiration not a distraction.

#### **DISCUSSIONS**

Based on the result of this study, there should be an increase of the number of the respondents with the same age or even younger age bracket for an early romantic relationship to provide more information for the future researchers. Pattern the study to the present state of the society to produce a more helpful outcome. Also, take other respondents in another school that might have this kind of problem/issue to increase the significance of the study. The study should tackle not only the possible variables but also the complex demographic background that may have a significant relationship or connection with a romantic relationship at a young age.

**KEYWORDS:** romance, romantic relationship, boyfriend, girlfriend, young age

**SUBMISSION ID: R04A-CALAMB-0087**

## **Best Practices in the Implementation of Gender and Development in the District of San Luis**

Lemie Onda

### **Abstract**

#### **INTRODUCTION**

Gender and Development are about removing gender biases within organizations, programs, projects and activities for development. Thus, schools in San Luis District is committed under the Gender-Responsive Basic Education Policy of the Department of Education. This research aims to determine the best practices in the implementation of Gender and Development in the schools of San Luis and to use the data gathered in making a plan of action to enhance its accomplishment.

#### **METHODS**

This is descriptive qualitative research which aims to identify the best practices in implementing Gender and Development by five schools in the district of San Luis. Gender Mainstreaming Evaluation Framework organizational assessment questionnaire was used to track the progress of an organization in integrating GAD in their plans and policies, people, enabling mechanisms and programs and projects. This questionnaire was used to collect the data on the level of implementation and to determine the different and specific practices done in the school to increase the awareness of the clientele in Gender and Development.

#### **RESULTS**

The schools included in this research increased the awareness of integrating Gender and Development in their activities. The data gathered shows that the level of progress in gender mainstreaming in San Luis has one school in the Foundation Formation level and four schools are in the level of Installation of the Strategic Mechanism. In this stage, they showed their different best practices. These are some of the practices:

Establishment of GAD focal point/committee/organization in the school.

Providing “children's desk” to attend on matters regarding the rights of the children

Conducting seminars/training/capacity building for pupils, teachers, and parents on GAD.

#### **DISCUSSIONS**

The result shows that the best practices done by the school in the implementation of Gender and Development must be sustained and improve to enhance the effect on the community.

**KEYWORDS:** implementation/integration/ assessment/ enhancement/ best practices

**SUBMISSION ID: R04A-BATANP-2146**

## **Breaking Gender Stereotype: A Phenomenological Study of the Lived Experiences of Female Civil Engineers in Construction Field**

Daphne Chloe Romea

### **Abstract**

#### **INTRODUCTION**

Currently, women's obligations in the field of industry in the Philippines has been rising unlike before. Universities and Colleges Admissions Service (UCAS) found that there is a large increase in the number of women who are taking civil engineering for the last ten years. However, engineering said to be a male-dominated profession, making it hard for a woman to enter this profession. Thus, this phenomenological study aims to determine the lived experiences of female civil engineers who are working in the construction field.

#### **METHODS**

This study is qualitative research. Particularly, a phenomenological research design was used to examine and understand the views of the participants. The populations of this study were females who had finished a civil engineering course from the locality of Cavite who has at least two years of working experience in the construction site. The data were gathered through a semi-structured interview that is composed of questions formulated through a review of related literature and studies. Thematic Analysis was used to analyze the data gathered.

#### **RESULTS**

Based on the data gathered, being a woman, decision making, catcalling, use of language and women are taken, as males create the issues and barriers encountered by women in their workplace. The statement “being a woman” is divided into two themes which are monthly period and pregnancy, which are only experienced by women. On the other hand, the themes formulated for adjustments made by women engineers to cope with those issues and barriers are ignoring the situation, keeping themselves strong, and going with the flow. Moreover, four themes were formulated based on the data gathered from the participants when they were asked on what are their advantages in the field. Based on the themes, one of the advantages of being a woman in construction is that they are easy to talk to. Second is that they know how to communicate properly which is according to the participant when men are talking, it seems to be bossy compared to them. The third is about being a multitasker.

#### **DISCUSSIONS**

The results of the study revealed that females encounter many issues and barriers in the workplace. Some literature and studies have matched with the findings of this study. The researcher also concluded that female civil engineers are admirable since they have shown that they deserve a spot in the male-dominated profession—engineering—and do not allow those issues and barriers to defeat them.

**KEYWORDS:** Women engineers, Women civil engineers' experiences

**SUBMISSION ID: R04A-CAVTP-0799**

## **Bullying Experience and Self-Perceived Gender Dysphoria among Filipino Teenage Gays and Lesbians**

Josephine P. Manapsal., RPsy, Ph.D., Francisco Osorio National High School

### **Abstract**

#### **INTRODUCTION**

The study determined the relationship of bullying experiences and the self-perceived gender dysphoria of Filipino teenage gays and lesbians. They express a strong cross-sex identification and oftentimes insist on living in discrimination, being trapped in the wrong body, thus, they make a major decision to undergo hormonal treatment or sex surgery. Failure to do is causing them distress, depression, and low self-esteem. There is no study that supports the mild experience of bullying that may not lead them to experience gender dysphoria.

#### **METHODS**

Descriptive-correlational research design using quota snowball sampling technique was utilized to select the participants (N=150). The Multidimensional Peer- Victimization Scale has an internal consistency of 0.85 for physical victimization, 0.75 for verbal and 0.77 for social victimization; while the Gender Dysphoria Propensity Scale has a Cronbach Alpha of 0.98.

#### **RESULTS**

Majority of teenage gays and lesbians are less bullied though there is a minimal difference, verbal bullying remains the most common type of bullying, followed by social bullying, physical bullying, and attack on property. The less bullied are those who have less meaning in their life but are not upset or less affected; they also experienced lesser times of assaults. Averagely bullied are those who experience discrimination and violence in school; they are either frequently bullied or easily upset, but not both. On the other hand, highly bullied are the ones who experience loneliness and often have the lowest self-esteem because of violence experienced in the school. They are the ones who frequently accept unwanted actions.

There is a significant direct correlation between bullying experience and their self-perceived gender dysphoria. Since the majority of gays and lesbians are less bullied, the level of gender dysphoria is only mild. They are mildly disturbed with the incongruence of their mind-body connection.

#### **DISCUSSIONS**

Gender dysphoria manifests among children, adolescents, and adults (DSM- 5, 2013). Gender dysphoria is usually accompanied by depressed mood, anxiety, and behavior problems, all of which can considerably heighten the level of distress. When a gay or a lesbian experience distressing bullying, the level of gender dysphoria is heightened and they may opt to undergo cross hormonal treatment.

**KEYWORDS:** social bullying, gender, incongruence, LGBT, penectomy, vaginoplasty, mastectomy or phalloplasty

**SUBMISSION ID: R04A-CAVTP-0015**



## **Consequence and Danger Overarching Motherhood: Intertwining a Proposed Academic Sustainability and Continuity**

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Department of Education

### **Abstract**

#### **INTRODUCTION**

Typical school-age mothers and working parents with babies/children to nourish find it very difficult to study or to work without a trusted and reliable childcare. Oftentimes, school-age mothers have to be absent from classes to attend to childcare things. Corollary, this happens also to working mothers who occasionally have to be absent in order to attend to their babies/infants' childcare. It is proposed that childcare for school-age mothers and working parents in the Philippines is provided by the government in the actual school premise or workplaces without added financial constraints. Services and supplies have to be given from childcare to the continued education of school-age mothers and hassle-free working for parents with infants to care.

#### **METHODS**

The qualitative approach was used to bring a rich, complex understanding of the meanings derived from the lived experiences of school-age mothers. Snowball sampling was utilized and according to Dudovskiy (2019), this is used when characteristics to be possessed by samples are rare and difficult to find. This is deemed applicable since the sample investigated is quite small, enabling the researchers to answer the research questions. Information was gathered from 8 key informants using a guide question ensured to be valid & reliable. Also, researchers asked permission from the school head and students' parents.

#### **RESULTS**

Paramount to any discussion on school-age motherhood are themes like emotional crisis, depression & struggles. Teen mothers face a host of obstacles including issues about pregnancy and revealing this to their parents, the stigma associated with pregnancy, internal struggles, being judged immediately, and the likes. Each of the school-age mothers talked about the massive amounts of obstacles they faced like an emotional crisis, depression, etc.

#### **DISCUSSIONS**

Key informants experienced unimaginable struggles about teenage pregnancy. Most of them had openness in their way of thinking; they opted to accept its repercussion and responsibility. They admitted that the number of problems they were dealing with prompted them to try premarital sex. School-age mothers must be tough enough to surpass these thru intervention programs and provision of services like flexibility with attendance, and alternative pathways to graduation. Increased support or funding to childcare services has to be available along with schools' and districts' appointing a coordinator to advocate for academic sustainability & continuity.

**KEYWORDS:** teenage pregnancy; school-age motherhood; inclusive education, Gender & Development

**SUBMISSION ID: R04A-BATANP-1461**

**Crafting Lives: Corn Husks Craft Making as Potential Livelihood  
Project of Kalipunan Ng Liping Pilipina (Kalipi)**

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(Adviser: Susan D. Ignacio / Lalaine Borja)

**Abstract**

**INTRODUCTION**

Wastes assume different forms. In Pantay Matanda, Tanauan City, agricultural waste is very prevalent. Among the common agricultural wastes perceived by its residents are the corn husks. They keep on throwing these corn husks anywhere without realizing the value of what may seem to be a by-product after corn harvest. Given this problem in the community, the researchers explored the potential of corn husks as a profitable livelihood among housewives. The corn husk craft making aimed at promoting locally-made products, reducing agricultural wastes, and providing an income-generating activity for housewives of Pantay Matanda, Tanauan City.

**METHODS**

This descriptive study was conducted in three phases utilizing both qualitative and quantitative approaches among mothers who are members of Kalipunan ng Liping Pilipina (KALIPI). Phase 1 included a feasibility study on the potential of corn husks as a profitable venture. From the results of the feasibility study, a business plan was crafted in Phase 2 to ensure the marketability, profitability, and sustainability of corn husks crafts. Lastly, a presentation of a business plan, orientation, and workshop were conducted among the members of KALIPI during the last phase.

**RESULTS**

Results revealed that corn husk craft making could generate livelihood opportunities to members of KALIPI. The results also showed that after having realized the viability of corn husks as a possible business venture, members of KALIPI are willing to produce similar products and venture into related livelihood endeavors. Moreover, corn husk craft making contributed to lessening the community's agricultural wastes.

**DISCUSSIONS**

The study recommends the need to explore ways on how agricultural wastes can be used for productive and profitable ventures among housewives of Pantay, Matanda who have the potential of contributing much to their family income and to the community's growing interest in social enterprise.

**KEYWORDS:** Woman Empowerment, Craft making, Livelihood Project

**SUBMISSION ID: R04A-TANAUA-0113**

## **Gender-Friendliness of Schools in the Municipality of Magallanes**

Leoniza Varias & Anacleto B. Incognito Ed.D., Department of Education

### **Abstract**

#### **INTRODUCTION**

Equality among man and woman is the primary concern of the Philippine society today. This must be practiced in society, no matter how urbanized or rural the place is. Additionally, the process of having gender equality and gender responsive must not only be practice during adulthood. It must start at a young age. In support of this, the Department of Education has different programs on Gender and Development in support for the development of of-of gender-responsive and gender friendliness of the school. Gender issues need to be discussed at the municipal level to eliminate gender biases among schools, hence, this triggers the researcher to study on the gender-responsive and gender friendliness of the schools in the District of Magallanes for the researcher believes that exploring these issues on gender will help to improve educational access, equity, and participation of all learners.

#### **METHODS**

This research study utilized mixed-methods of both qualitative and quantitative research. It utilized the Gender in Education Network in Asia-Pacific (GENIA) Toolkit that was rated by the respondents by tickling YES or NO and providing Means of Verification (MOV) and remarks. Descriptive method of research was used to answer the questions concerning the status of the subject of the study. Frequency count and percentage were used to analyze the data given.

#### **RESULTS**

The following conclusions and recommendations are made based on the result of this study  
Schools in the Municipality of Magallanes are gender-friendly in terms of health and security issues.  
Schools in the Municipality of Magallanes are gender-friendly in terms of school and classroom facilities.  
Schools in the Municipality of Magallanes are gender-friendly in terms of students' participation and decision making except for deciding on the school rules and regulations.  
Schools in the Municipality of Magallanes are gender-friendly in terms of guidance and counseling services.  
Schools in the Municipality of Magallanes are gender-friendly in terms of community members and parents.

#### **DISCUSSIONS**

Public Elementary and secondary schools in the municipality of Magallanes are public elementary and secondary schools in the Municipality of Magallanes, Cavite is gender- friendly in terms of security and health programs are given to the learners, school and classroom facilities, students' participation in decision-making, guidance and counseling, and community member and parents.

**KEYWORDS:** gender-friendliness

**SUBMISSION ID: R04A-CAVITP-1601**

**Increasing the Level of Lgbt Students' Engagements on School Activities of Marcial B. Villanueva National High School through Project Suhre (School Uniform and Hair - Length Restrictions).**

Ricky P. Manga, Department of Education & Loradel B. Romano, Principal 1

**Abstract**

**INTRODUCTION**

The researchers have noticed some cases of discrimination against the LGBT students at Marcial B. Villanueva National High School and even at the nearby private schools of San Francisco, Quezon province. Some of them just stopped schooling because they do not want to conform to school rules and regulations. The researchers push through a research study to investigate the prevailing issues and ended up the gendered school uniform and hair - length restrictions for the LGBT students at Marcial B. Villanueva National High School. The main objective of the reform is to increase the LGBT students' level of engagements on school activities at Marcial B. Villanueva National High School upon the implementation of the Project SUHRe.

**METHODS**

This research study used quantitative and qualitative methods of research. Baracerros (2016) defines quantitative research as, "A way of making any phenomenon or any sensory experience clearer or more meaningful by gathering and examining facts and information about such a person, thing, place, or event appealing to your senses." However, the qualitative method of research is defined as "a subjective approach of research to be employed by means of verbal language" (Baracerros, 2016).

Specifically, it utilized quasi-experimental design in the completion of this study. The quasi-experimental design was used because the respondents are identified as members of the LGBT community.

**RESULTS**

After the implementation of Project SUHRe, the study revealed that LGBT respondents attended classes regularly. Project SUHRe indeed helps increase the school attendance of the respondents. The respondents submitted their projects to the subject teachers on time. The study further revealed that the respondents complied classroom requirements on time. On extra-curricular activities, the respondents participated in extracurricular activities of the school. However, on major examination, the study revealed the respondents can only give their best in studying their lessons, especially during major examinations.

**DISCUSSIONS**

After the implementation of Project SUHRe, the respondents became free and liberated as they happily confessed the truth to the researchers. They come and go to school with a happy face. Project SUHRe encourages them to attend classes regularly and start dreaming once more about their future.

**KEYWORDS:** LGBT, School Activities, School Uniform, Hair - Length Restriction

**SUBMISSION ID: R04A-QUEZON-0018**

## **Perception of High School Learners on the Factors Leading to Early Pregnancy**

Twinkle Nunezca, Integrated School of Lawa

### **Abstract**

#### **INTRODUCTION**

Early pregnancy is a situation which involves female adolescents. A teenage female can be pregnant as early as the age of twelve or thirteen, although it is usually fourteen and older. The fact that teenagers become pregnant is related to many factors. It has been a worldwide issue that needs to be addressed to lessen the problems of motherly adolescent childbearing. This is a serious issue that may seriously impact the future of a young woman. Any teen pregnancy will be a huge task as teens lack skills needed to handle a pregnancy and motherhood.

#### **METHODS**

This research study determined the Perception of High School Learners of the Integrated School of Lawa on the Factors Leading to Early Pregnancy. According to Orodho (2012), the descriptive survey design allows the researcher to gather information, summarize and interpret data for purposes of clarification. The descriptive survey design is useful in collecting information about people's attitudes, opinions, habits or perceptions about issues under investigation.

#### **RESULTS**

Based on the findings, the factors leading to early pregnancy as perceived by the participants were as follow (1) curiosity, (2) lack of parental guidance and presence, (3) drugs and intoxicating drinks, (4) X-rated movies, and (5) insufficient sex education. Out of the five factors that were mentioned, curiosity topped the other four as the major reason why girls get pregnant at their young age

#### **DISCUSSIONS**

As curiosity was the leading factor in why teens get pregnant early, the need for moral recovery was very much evident. Moral and spiritual formations should be a must as part of the school program. As for the other reasons, both parents and teachers could monitor and give positive intervention to the learners so as to help the teenagers avoid early pregnancy.

**KEYWORDS:** early pregnancy, teens, curiosity, parental guidance, moral recovery

**SUBMISSION ID: R04A-CALAMB-0095**

**Sex Differences in Intelligence Quotient (IQ) of Selected Grade 12  
Students of Dimasalang National High School**

Lemuel Abu A. Cleofe, Marianne Louise M. Sambere, & Marian R. Badillos

**Abstract**

**INTRODUCTION**

There has been increasing social debate in recent times about men's and women's general intelligence. The previous researchers assume that it is the female sample which shows a tendency to underestimate however, the possibility also exists that males may be overestimating their scores. It is anticipated that the current study will go a little way towards resolving this issue. Research in this area is important because it demonstrates that despite an academic understanding that there are no sex differences in intelligence, sex differences in predictions of IQ scores suggest the message is not getting through.

**METHODS**

This study provided new knowledge through an ethnographic exploration. An ethnographic approach and purposeful sampling were used to build in-depth knowledge from the selected participants who had potential in giving answers to the general problem. The triangulation method involved an interview, observation, and analysis was the primary tool in the study. Survey questionnaires were also used as one of the data gathering methods to have a dry run to measure the baseline data knowledge of the respondents that will be included in the study. IQ test composed of tricky and logical questions were also used as an instrument to know the performance level of the participants in a certain subject.

**RESULTS**

In this study, the g-factor (general factor) represents a basis taken from the results of the study. This analysis used to examine some mental and verbal aptitude tests concluded that scores on these test (IQ test) from both sexes were similar. It is the primary contention of this research that current approaches to research in this area have severely limited our ability to gain an informed understanding among men and women identity. The major findings revolved around the complexity within the differences of both sexes include the higher advantage on males in terms of logical and numerical aspects wherein there are contradictions with the results of the IQ test conducted by the researchers.

**DISCUSSIONS**

Of all these incongruities, this research exhibits the ethnographical study of "too hot to handle" arguments of sex differences in intelligence quotient that shows general intelligence cannot be measured and varies situationally. Rate of comparison among males' and females' IQ distribution varies momentarily depending on the capacity, ability, and interest of an individual on a certain field.

**KEYWORDS:** Sex Differences, Intelligence Quotient, Grade 12 Students

**SUBMISSION ID: R005-MASBAP-0023**

## **Women as Economic Leaders and Entrepreneurs: A Mixed Method Inquiry**

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### **Abstract**

#### **INTRODUCTION**

Women empowerment, one of the most debatable issues at this time. Tons of information on the impact of women as economic leaders and entrepreneurs; women-owned businesses made on a macro scale. Feminist Theory shines a light on social problems, trends, and issues that are overlooked by the historically dominant male perspective within social theory. This study intends to compare the views of men and women; on women as economic leaders and entrepreneurs. This study will further prove that women can be great partners an integral member of the society in the stability of business and economy.

#### **METHODS**

Quantitative descriptive survey and Qualitative Comparative Analysis are utilized to analyze and interpret the gathered data of which twenty female entrepreneurs and twenty male entrepreneurs who own and sell were purposely selected as respondents who answered the survey and interview questions. Data were analyzed through descriptive statistical treatment such as frequency, mean, standard deviation; and analysis of variance to determine the significant difference of means of groups at one time. Thematic analysis was used to surface what causes the difference between the views of female and male entrepreneurs.

#### **RESULTS**

Quantitative and qualitatively, result shown that 63% of females are great competitors in businesses in Taytay, 86% of female entrepreneurs are even better than men in marketing strategy, women can do better than men when it comes in handling a business, and lastly, female entrepreneurs have potentials and good strategies to entertain and satisfy their customers. Hence, the number of female entrepreneurs here in Taytay Tiangge is increasing progressively and females are becoming open-minded individual to be a successful economic leader.

#### **DISCUSSIONS**

As of the findings of this study, women entrepreneurs nowadays are increasing, this can be true because of the dominance of female entrepreneurs in leading businesses in Taytay such as RTW, garments, sash, etc. Being competitive plays a major role in being a potential leader and effective entrepreneurs. Hence, the plausibility that female entrepreneurs contribute more than male in the economic growth in Taytay, are likely to be true. The dominance of female as effective entrepreneurs only characterized the role of women in society nowadays. On the other side, this study does not neglect to note that men are the leaders in many various fora in their own rights.

**KEYWORDS:** Women entrepreneurs, qualitative causal analysis, feminism, Taytay Senior High School

**SUBMISSION ID:** R04A-RIZALP-0207

# **WOMEN'S AND CHILDREN'S HEALTH**

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## **Cases of Pregnant Students in Bulan NHS: Basis for the Identification of the Best Mode of Schooling**

Mercy Gamba

### **Abstract**

#### **INTRODUCTION**

Schools are not spared from the challenges of teenage pregnancy. It is a fact that with the growing number of teenagers getting pregnant in recent years, a number of them are coming from high school-aged youth, usually ranging from 15-19 years of age, who actually attend in secondary schools.

At Bulan National High school, there had been cases of students who got pregnant at their tender ages, despite the school's serious campaign and information dissemination along with the effects of engaging in premarital sex and teenage pregnancy among our students.

#### **METHODS**

There are 11 identified pregnant students in the school from Grade 7 to Grade 12. The statistical measures and tools used in this study are the frequency count, weighted mean, and correlation. There are 33 respondent teachers consists of Teachers III, Master Teachers, and Head Teachers. Purposively the researchers chose them based on their length in services because they are considered as seasoned and experienced teachers, regardless of their specialization.

#### **RESULTS**

The results showed that out of 33 teacher respondents, there are 25 teachers who chose the modular type of mode schooling, two chose inclusively and six chose to mainstream. Out of 11 pregnant students, seven of them chose modular, three for inclusive and one for mainstreaming. Others suggested digital learning resources and ALS (Alternative Learning System). The problems encountered in implementing the said mode of schooling. For Modular approach: poor participation of parents and students, lack of materials and modules, additional work for the concerned subject teachers, and development of modular material. For Inclusive type: it is considered a burden to the assigned teacher due to their schedule and additional works. For mainstreaming: the creation of a separate program for pregnant women because of a possibility that these students will be coming from different grade levels, preparation of different lesson according to their year level and different approaches and expect poor attendance because of their condition, time of giving birth will affect their performance in school. The students may find it uncomfortable coming to school knowing their condition and difficult to manage pregnant students of different year levels in one class.

#### **DISCUSSIONS**

Among the different mode of schooling, students utilized modular was able to finish their schooling and the rest are not. The success of the said undertaking is the collaborated efforts of parents, students, administrators, and other stakeholders.

**KEYWORDS:** eldest son

**SUBMISSION ID: R005-SORSOP-0036**

**Knowledge Attitudes and Best Practices on the Nutrition Program of  
Public Elementary School Teachers in the District of Pililla**

Nelde Catangui

**Abstract**

**INTRODUCTION**

The right to education is one of the social rights enshrined in the Philippine Constitution. However, given the prevalence of poverty in the communities across the country, the learning process in school tends to be negatively influenced by factors such as malnutrition and hunger. Nutrition is known as a basic human right, essential to the survival, growth, and development of children. It is one of the vital needs of life. A healthy, well- the prepared brain is one of the first fundamentals for learning anything. Child health and nutrition are strongly connected with educational achievement.

**METHODS**

The main purpose of the study is to determine the knowledge, attitudes and best practices on the Nutrition Program of the Teachers in the District of Pililla during the School Year 2012- 2013 to build up a faculty development program. The respondents of the study are the total population of teachers in the said district consisting of 182 teachers.

**RESULTS**

The study found that most of the teacher respondents are females with ages 30 years old and above. The majority has not earned units in the Master's degree and most of them have Teacher I position. Most of them have been in the service for 16 years & above and have attended seminars/training at the school level. The perceptions of the teacher-respondents on the nutrition program in a school in terms of their profile sex, educational attainment and position are not significant on the perception of the respondents on nutrition programs while age, length of service and seminar training are significant on teachers' perception towards nutrition program.

**DISCUSSIONS**

Based on the findings of the study it was concluded that teachers' knowledge, attitudes, and practices on nutrition program differ significantly. When they are grouped according to sex, educational attainment and position, their perception did not differ significantly.

**KEYWORDS:** NUTRITION; KNOWLEDGE; ATTITUDES; BEST PRACTICES; TEACHERS

**SUBMISSION ID: R04A-RIZALP-0076**

## **Knowledge, Attitude and Practices on Food Safety of Indigenous Mothers of Kabacan, Cotabato**

Jubailyn Garcia, Department of Education

### **Abstract**

#### **INTRODUCTION**

Mothers fed their children according to what they know what's best for them and what's available in the society. Mothers should know how to prepare food for their children at home. Mothers must ensure that children's foods are safe, for children are incapable of identifying the foods that are safe for them. At the moment, there is limited information on knowledge, attitude, and practices on food safety of indigenous mothers. In this study, it aimed to investigate the knowledge, attitude, and practices on food safety of indigenous mothers at Kabacan, Cotabato.

#### **METHODS**

One hundred randomly selected indigenous mothers were involved in this study. The data were collected from different barangays in the municipality of Kabacan, Cotabato. The questionnaire was adapted from the study of Naina et al. (2016) to collect data on knowledge and practices, while questionnaire on attitude and practices on food safety was adapted from the study of Abdul-Mutalib et al. (2012). Regression analysis test was used to determine the influence of the independent variables.

#### **RESULTS**

Findings revealed that half of the respondents have an acceptable knowledge, the majority (75%) of them have an excellent attitude and good practices (96%) on levels of food safety. Additionally, the socio-demographic characteristics of the respondents do not significantly influence the level of their knowledge, attitude, and practices on food safety. The availability of the kitchen facilities and supplies of the respondents were significantly influenced by their level of knowledge but it does not significantly influence the level of their attitude and practices on food safety. Only the food shows/cooking shows is found the best significant predictor of the level of knowledge on food safety. But in general, sources of information do not significantly influence their level of the knowledge level of attitude and level of practices.

#### **DISCUSSIONS**

The respondents have acceptable knowledge, excellent attitude and good practices on levels of food safety but, still, indigenous mothers need additional knowledge in keeping food safe.

**KEYWORDS:** Food safety, indigenous mothers, KAP Study

**SUBMISSION ID: R012-KIDAPA-0001**