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*"Research Development:
Making Change Happen"*



The EARIST Research Journal seeks to further the discussion, advancement, and dissemination of research, planning, development and production concerns and knowledge along professional, scientific, technological, technical and vocational instruction and training in trades, business, arts, sciences and technology.

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FOREWORD

The Eulogio “Amang” Rodriguez Institute of Science and Technology takes pride in publishing Volume XX, No. 28, July – December 2020 of the EARIST Research Journal as it contributes to the attainment of EARIST’s Mission, Vision, Goals, and Objectives through scholarly publications.

This volume is the output of researches conducted by EARIST faculty during the Academic Year 2020. This volume highlighted Nineteen (19) distinct researches in different fields, but most noteworthy, each individual research achievement.

The topics vary as shown in every page, but each is full of diverse stories confirming happenings in every college of the Institute. The office of research hopes to mirror the activities of our educators in assuming their task as researchers.

There are more challenges left in the various fields waiting for further scrutiny. We continue the never ending cycle of the quest for new knowledge and further understanding of the issues at hand. The work remains unsolved. But unless we produce our own solutions to existing problems, the challenges will never be met.

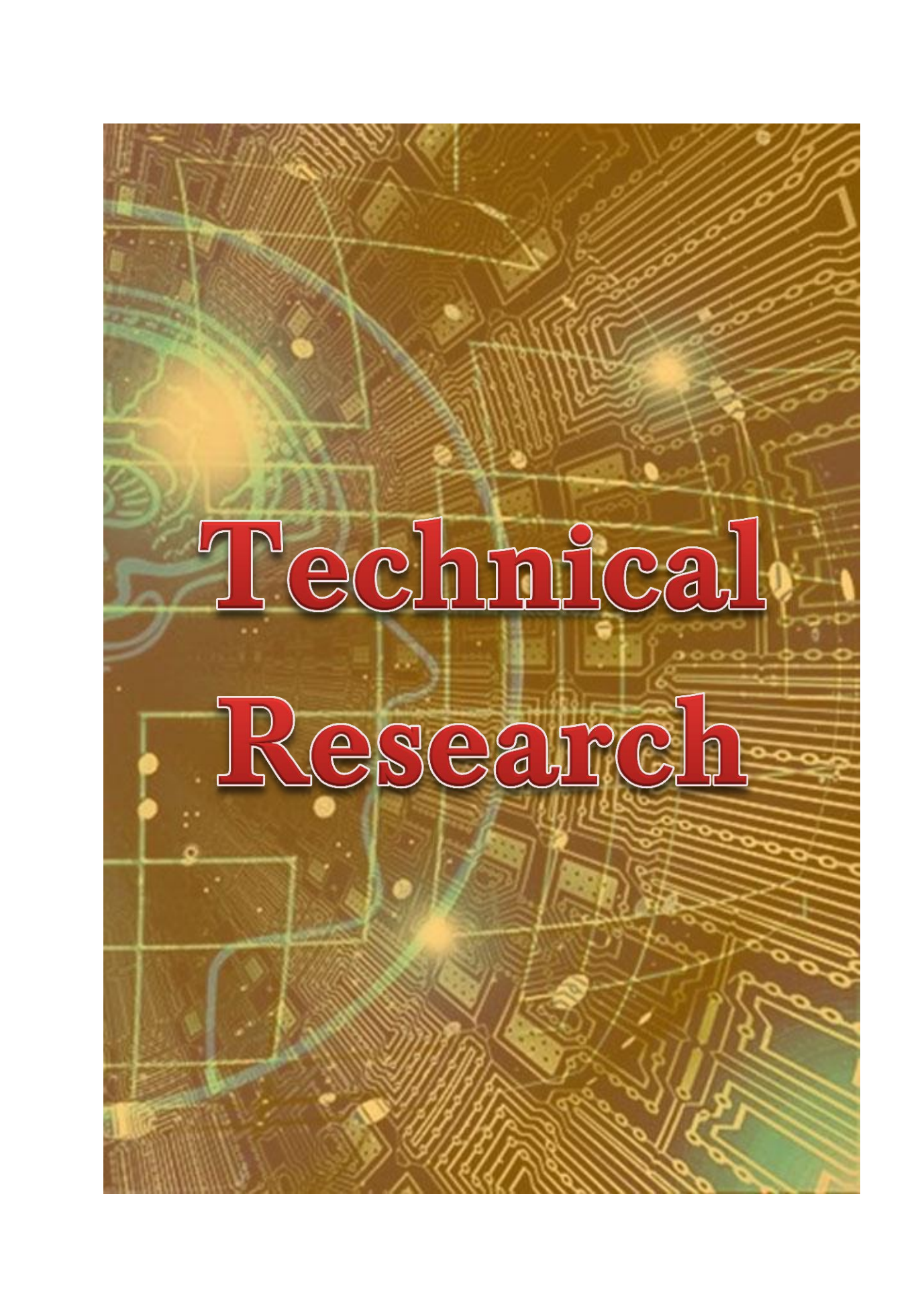
The research work undertaken by faculty members and staff are included with the hope that these will contribute to the advancement of research activities of the institute and will serve as medium in the dissemination of research outputs to the community.

Engr. Rogelio T. Mamaradlo
Director, Research Services

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The background of the slide is a complex, abstract image. It features a dense network of golden-yellow lines and patterns that resemble a circuit board or a data network. Overlaid on this are several glowing green and blue lines that form a grid and intersect with the golden patterns. There are also several bright, glowing yellow and orange spots scattered throughout the image, giving it a sense of energy and activity. The overall color palette is dominated by warm tones like gold, brown, and orange, with cooler accents of green and blue.

Technical Research

MARGOSA PRECIOUS LEAVES: A LESSON'S LEARNED

*Anna Buenaseda
Florinda Bautista*

INTRODUCTION

Nowadays, many illnesses such as viral, bacterial, and protozoan are caused by mosquitoes because they act as carriers. In terms of public health interest, and disease transmission, mosquitoes are considered as very common group of insects that tends to become vector.

Population of mosquito's increases rapidly that causes major problem for many countries because they are vectors of different diseases. Like dengue, filarial, Japanese encephalitis, Lyme disease, Yellow fever, Encephalitis, Malaria, Chikungunya, and Epidemic poly-arthritis. In tropical and subtropical countries mosquito borne diseases are seriously a main problem. World Health Organizations (WHO, stipulated that mosquitoes have approximately 3500 species and commonly present in tropical and subtropical regions. Public health organizations throughout the world educate people to practice mosquito control program as preventions on their rapid increasing population.

Some of anti - mosquito measures are source reduction, bio control, oil dripping, larviciding, adulticiding, the use of DDT (banned from most country) and Mosquito Traps. And lately one of the latest proposals to eradicate mosquitoes is the deliberate extinction of certain mosquito species thru specicide. Many plants/tree have been identified as having insect-repellent effects from their extracts. There has been increasing research in the last decade proving that plant-based insect repellents are just as, if not more effective than DEET. Few of these plants are Citronella, Marigolds, Catnip, Lemon balm, and Basil. With the help of additional extract from other plants such as vanillin, thyme and lavender, effectiveness of the discovered plant has been boosted. Some works as masking chemicals from your body that attracts mosquitoes or simply acts as an irritant to the mosquito when detected. On this study the researchers will use a tall, greeny tree which typically grown in the Philippines named as Neem tree to develop a mosquito repellent solution.

The Neem tree, known as Margosa tree is the main ingredient that the researcher utilized to perform the study wherein the common ingredients are to be added in order to achieve the needs of making an effective repellent for insects especially the to the mosquitoes.

The study aims to develop and formulate a Mosquito Repellent Solution from margosa leaves.

Specifically it sought to answer the following questions:

1. What are the tools/materials, apparatuses and procedure in the preparation of a mosquito repellent solution?
2. How do the respondents assess the product in terms of:
 - 2.1 Appearance;
 - 2.2 Scent; and
 - 2.3 Texture?

3. Is there a significant difference on the assessment of the students and the residents of Legarda Sampaloc Manila on the aforementioned variables?

4. What is the level of acceptability of Mosquito Repellent Solution out of Margosa leaves in terms of:

- 4.1 Marketability, and
- 4.2 Availability?

HYPOTHESIS

The researchers formulated hypothesis that there is no significant difference on the respondent assessment in terms of appearance, scents and texture of the produced Mosquito Repellent Solution from Margosa leaves. The paradigm of the study as illustrated below:

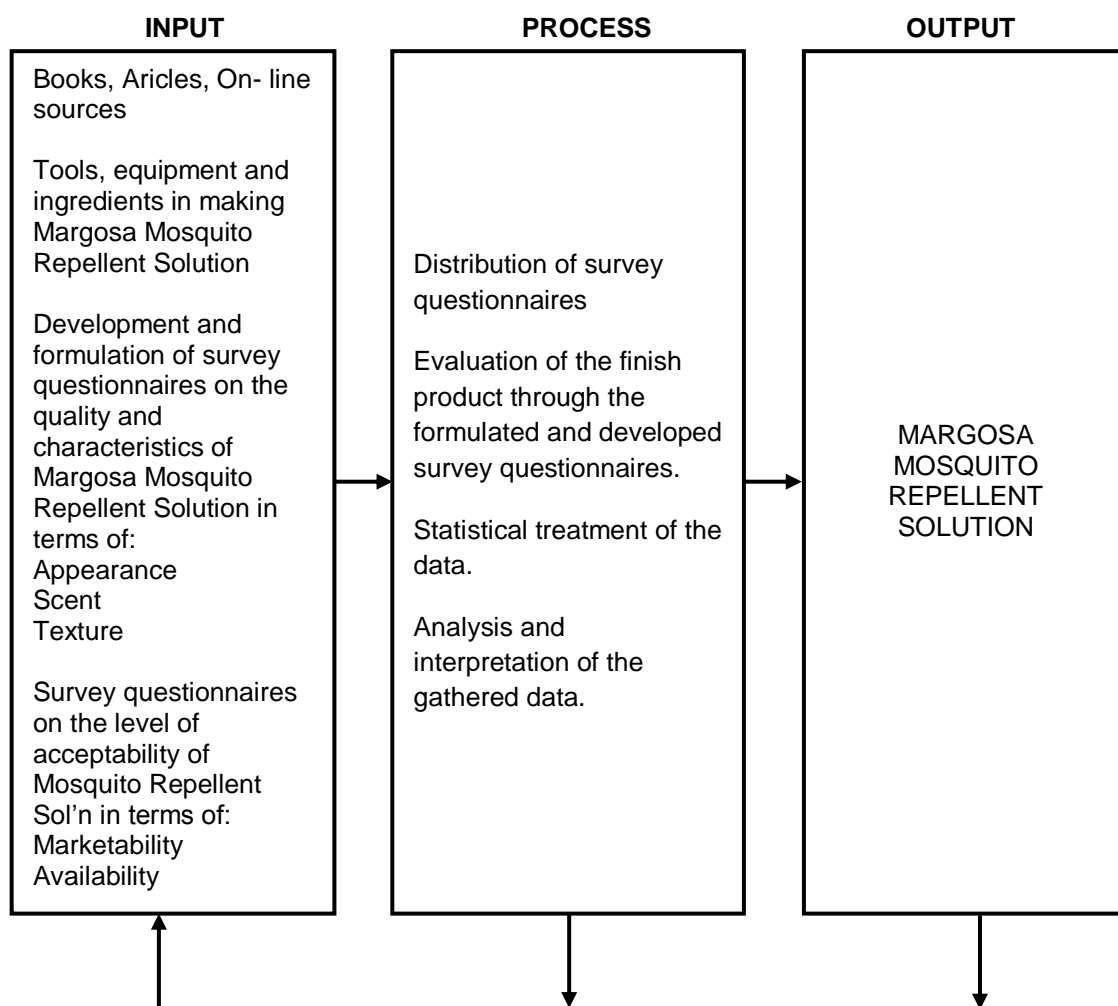


Figure 1. Research Paradigm
Conceptual Framework

The **Input** consists of books, articles and online sources as reference. Tools, equipment and ingredients in the production of margosa mosquito repellent solution. Development and formulation of survey questionnaires on the quality and characteristics of developed and formulated margosa mosquito repellent solution in terms of the following criteria in quality and characteristics. Conceptualization of survey questionnaires on the level of acceptability of MMRS in terms of marketability and its availability.

The **Process** includes distribution of survey questionnaire, evaluation of the finish product through the formulated and developed survey questionnaires. The statistical treatment of the data and lastly analysis and interpretation of the gathered data.

The **Output** Margosa Mosquito Repellent Solution.

This study may serve as contribution to the field of education. Furthermore, it is more important to the following:

Home Makers may have materials at home and formulate a repellent solution necessary to repel mosquitoes and avoid mosquito bites.

Consumer another variety of mosquito repellent products that will fit to consumer's choice in the market.

Community it offers a low cost repellent solution that will safeguards the health of the people especially on the mosquito borne diseases.

Entrepreneur another income generating for household in the community.

Government Agencies mosquito repellent from margosa leaves will help and give an idea to have a program very vital in combatting problems cause by mosquito through utilization of plants available in the community.

Future Researchers serve as a good reference for the future researchers to enhance the same repellent utilizing different materials.

REVIEW OF RELATED LITERATURE AND STUDIES

Lasco MD (2015), Said that neem tree is known for its use a mosquito repellent. It is tall with broad branches and leaves with a stitch on the edge. The flowers are small, white, and fragrant. Common plants in India, Indonesia and Myanmar, but also seen in the Philippines.

Diglasan, (2013) narrated that a cream which is made of extract of paraiso leaves is effective in preventing dengue. Some of the barangay health in Sta. Barbara in Iloilo said that the strong smell of margosa leaves can make the mosquito hate it.

DepEd and DOH (2015) anti-dengue campaign in public schools, conducted a study that looks into the feasibility of producing a natural alternative solution from neem tree (*Azadirachta indica*) leaves as larvicide against mosquitoes through the process of fermentation. Serial dilution method was conducted in diluting the neem leaves extract to find the LC50 of the concentration for varied time periods of the treatments.

It was found that the longer the time period the higher the percentage mortality of mosquito larvae and shorter time period resulted to a lesser percentage mortality. Therefore, high concentration of neem leaves extract is needed in order to increase the percentage mortality at the shortest period of time. It was also identified that there is a significant difference in the percentage mortality of mosquito.

National Epidemiology Center, DOH (2016) stated that Philippines, Dengue disease is a tropical and subtropical mosquito-borne viral illness and is a major health concern in the Philippines. To determine the dengue disease burden in the Philippines and identify gaps and future research needs, we conducted a literature analysis and review to describe the epidemiology of dengue disease. We used well-defined methods to search and identify relevant research conducted between 2000 and 2011. This long-term review highlights an increase in the reported incidence of dengue disease in the Philippines.

Kumar et.al (2016) Neem leaves are considered safe to be taken internally on a regular basis. Neem is one of the most powerful blood cleanses and detoxifiers in the Ayurvedic system of medicine. Neem leaves relieve the symptoms associated with viral infections, including common cold, herpes, influenza and chickenpox. Eating neem leaves reduces fever associated with viral infection.

Roychoudhury, in Ecofriendly Pest Management for Food Security (2016), stated that neem is recognized worldwide as a tree native to India and wonder tree for its unique pest control properties. The active constituents are the tetranortriterpenoids and several other chemical compounds isolated from the seeds, kernels, oil, and leaves. The expert pronounced behavioral and physiological effects on insect pest of 15 orders.

Rutledge et al. (2014) said that repellents make humans unattractive to a mosquito so that it will avoid areas of the body that have been treated with the product. Repellents do not kill mosquito but repellents will provide protection from bites for a long period of time from just one application. The University of Florida mosquito researchers test and evaluate the effectiveness of mosquito repellents based on the amount of time the product will continue to repel mosquitoes after one application to the skin. This is known as Complete Protection Time (CPT).

The related literature and studies were found to be relevant to the present studies because they are all similar to the present. The researchers hope that with these reviewed literature and studies, their piece of work on neem tree as a mosquito repellent solution will be soon realized. All studies and literature reviewed have similarities with the present study, they all deal with the topic of repellent. They also gave insights to the researcher on different interpretation of repellent that was used in this study.

MATERIALS AND METHODS

The descriptive research design was used in this study. It is designed to test the hypothesis or to answer queries about the potential of Margosa leaves as mosquito repellent. This involved the use of survey questionnaires, the collection, presentation, and characterization of a set of data in order to describe the various features of the set of data. It is concerned strictly with the result of the gathered data.

Eulogio "Amang" Rodriguez Institute of Science and Technology college of education is composed of more or less 1500 total population of students and the nearby community household in Legarda Sampaloc Manila is more or less 500 families. In order to measure the validity of the study, the purposive random sampling technique in choosing at least 100

respondents were used since the total population of the college and the community in Legarda Sampaloc Manila is too large to manage by the researchers.

Table 1
Respondents of the Study

Respondents	Frequency	Percentage
Students	72	71.3
Parent/Household	29	28.7
Total	101	100

As presented in the data, there are 72 or 71.3 percent are students and 29 or 28.7 percent are parents who are belong to household with a total of 101 respondents who are used as the subject of the study.

Table 2
As to Gender

Gender	F	%
Male	35	34.7
Female	66	65.3
Total	101	100

It shows the distribution of the type of respondents as to gender. It shows that 35 or 34.7% of the respondents are males and the other 66 or 65.3% are female.

Table 3
As to Type of Respondents

Respondents	Male		Female		Total
	F	%	F	%	
Students	23	65.71	49	74.24	72
Household	12	34.29	17	25.76	29
Total	35	100	66	100	101

It shows in the table that as to the type of respondents among the students 23 or 65.71% are male and 49 or 74.24% are female with a total of 72 students. The remaining type of respondents is a household which comprises of 12 or 34.29% are male and 17 or 25.76 are female with a total number of respondents of 29.

Table 4
As to Civil Status

Civil Status	Male		Female		Total
	F	%	F	%	
Single	13	37.14	32	48.48	45
Married	15	42.86	25	37.88	40
Widow	7	20.00	6	9.09	13
Legally Separated	0	2.86	3	4.54	3
Total	35		66		101

It shows in the table as to the civil status, among of the single respondents, there are 13 or 37.14% are male and 32 or 48.48% are female in a total of 45 respondents. For the married respondents, there are 15 42.86% are males and 25 or 37.88% are female. There were widow among the respondents with a total of 13 wherein 7 or 20.00% are male and 6 or 9.09% are female. And lastly, the respondents who were legally separated got the lowest frequency of 3 in which all are female.

RESULTS AND DISCUSSIONS

1. What are the tools/materials, apparatuses and procedure in the preparation of Margosa Mosquito Repellent Solution?

Table 5
Tools apparatuses used in the preparation of Margosa Mosquito Repellent Solution

Quantity	Unit	Specification
1	Piece	Blender
2	Pieces	Plastic Spoon
2	Pieces	Syringe
1	Piece	Mixing Bowl
3	Pieces	Container
1	Piece	Cup

Table 5 showed that there are different tools and equipment used in the preparation of Margosa Mosquito Repellent Solution the following is a piece of blender, two pieces of plastic spoon, two pieces of syringes, 1 piece of mixing bowl, three pieces of containers, and a piece of measuring cup.

Table 6

Shows the materials used in production of Margosa Mosquito Repellent solution

Quantity	Unit	Specification	Cost/Unit	Total Cost
1	Kilo	Neem leaves	Free	Free
3	Drops	Oil	P20	P20
3	Tbsp.	Alcohol	P35	P35
1	Drop	Eucalyptus	P30	P30
5	Pieces	Calamansi	P10	P10
1/2	Cup	Water	Provided	Provided
TOTAL				P95

Procedure:

1. Assemble all the materials to be use in the preparation of Margosa Mosquito Repellent Solution by preparing the neem leaves.
2. After washing the neem leaves the next procedure is to get the neem extract by using a blender.
3. For the next procedure mix the all the left ingredients in the neem extract.
4. After mixing the neem extract with the other ingredients set aside for two days to process the mixture and then put in the container.

2. How do the respondents assess the product as to : aroma; viscosity; and appearance?

The assessment of respondents on the quality and characteristics of the (MMRS) Margosa Mosquito Repellent Solution is presented in Table 7.

2.1 Quality as to Aroma

Table 7
Extent of Quality Characteristics as to Aroma

Criteria	Students		Household		CWM		Rank
	WM	VI	WM	VI	WM	VI	
1. It releases a soothing fragrance.	3.69	E	3.76	E	3.71	E	2
2. It has a lasting fragrance.	4.31	HE	4.21	HE	4.28	HE	1
Composite Weighted Mean	4.0	E	3.99	E	4.0	E	

As a summary, item no. 2 is in rank 1 with an obtained weighted mean value of 4.28 which is verbally interpreted as Highly Evident; and lastly the item no. 1 is in rank 2 with an obtained weighted mean value of 3.71 and verbally interpreted as Evident.

Generally, the produced Margosa Mosquito Repellent Solution in terms of its quality as to Aroma for the respondents it is Evident.

2.2 Quality as to Viscosity. The assessment of respondents on the quality and characteristics of the (MMRS) Margosa Mosquito Repellent Solution is presented in Table 8.

Table 8
Extent of Quality Characteristics as to Viscosity

Criteria	Students		Household		CWM		Rank
	WM	VI	WM	VI	WM	VI	
1. It is sticky when applied to the area.	4.07	E	3.88	E	3.98	E	2
2. Not too sticky when sprayed on the area.	4.24	HE	3.90	E	4.07	E	1
Composite Weighted Mean	4.16	E	3.89	E	4.03	E	

As a summary, item no. 2 is in rank 1 with an obtained weighted mean value of 4.07 which is verbally interpreted as Evident; and lastly the item no. 1 is in rank 2 with an obtained weighted mean value of 3.98 and verbally interpreted as Evident.

Generally, the produced Margosa Mosquito Repellent Solution in terms of its quality as to Viscosity for the respondents is Evident.

2.3 Quality as to Appearance. The assessment of respondents on the quality and characteristics of the (MMRS) Margosa Mosquito Repellent Solution is presented in Table 9.

Table 9
Extent of Quality Characteristics as to Appearance

Criteria	Students		Household		CWM		Rank
	WM	VI	WM	VI	WM	VI	
1. It Emits an attractive Color.	3.94	E	4.07	E	4.01	E	2
2. It is clear and emits no color.	4.21	HE	4.00	E	4.11	E	1
Composite Weighted Mean	4.08	E	4.04	E	4.06	E	

As a summary, item no. 2 is in rank 1 with an obtained weighted mean value of 4.11 which is verbally interpreted as Evident; and lastly the item no. 1 is in rank 2 with an obtained weighted mean value of 4.01 and verbally interpreted as Evident.

Generally, the produced Margosa Mosquito Repellent Solution in terms of its quality as to Appearance for the respondents is Evident.

Table 10
Summary on the Quality and Characteristics of the Margosa Mosquito Repellent Solution

Criteria	Students		Household		CWM		Rank
	WM	VI	WM	VI	WM	VI	
1. Aroma	4.00	E	3.99	E	4.00	E	2
2. Viscosity	3.79	E	4.16	E	3.98	E	3
3. Appearance	4.08	E	4.04	E	4.06	E	1
Composite Weighted Mean	3.96	E	4.06	E	4.01	E	

Among the three quality and characteristics evaluated by the respondents, appearance is in rank 1 with a weighted mean value obtained of 4.06 and verbally interpreted as evident; followed by aroma which obtained a weighted mean value of 4.00 and verbally interpreted as evident; and lastly, the viscosity with an obtained weighted mean value of 3.98 and verbally interpreted as evident.

Generally, both students and the household evaluated that the quality and characteristics of the produced (MMRS) Margosa Mosquito Repellent Solution is evident in terms of aroma, viscosity and appearance supported by the obtained weighted mean value of 4.01.

3. Is there a significant difference on the assessment of the students and the residents of Legarda Sampaloc Manila as to the aforementioned variables?

Table 11
Difference on the Assessment of the Respondents

Respondents	Mean	SD	t - ratio			
			Computed t - value	Critical value of t at 0.05	Decision	VI
Students	3.95	0.363	1.949	0.056	Reject Ho	Significant
Household	3.80	0.337				
df = 55.5						

It can be gleaned by the data in table 10 that the students obtained a weighted mean value of 3.95 and a standard deviation of 0.363 while household obtained a weighted of 3.80 and a standard deviation of 0.337. When this obtained value subject to t – Test, it obtained a t computed value of 1.949 which found to be greater than the critical value of 0.056 at 0.05 level of significance with 55.5 degrees of freedom, thus the null hypothesis is not accepted and it is interpreted as significant. This implies that there is a significant difference between the assessment of the students and the residents/household along Legarda Sampaloc Manila on the quality and characteristics of the produced (MMRS) Margosa Mosquito Repellent Solution in terms of their aroma, viscosity and appearance.

4. What is the level of acceptability of Margosa Mosquito Repellent Solution as to Marketability and Availability: The assessment of respondents on the acceptability of the (MMRS) Margosa Mosquito Repellent Solution is presented in Table 12.

Table 12
Acceptability as to Marketability

Criteria	Students			Household			CWM	
	N	WM	VI	N	WM	VI	WM	VI
Marketability	72	4.21	HA	29	4.38	HA	4.30	HA

As a summary on the products' acceptability in terms of its marketability among the students it obtained a weighted mean of 4.21 as verbally interpreted as Highly acceptable and so with the household it obtained a weighted mean of 4.38 as verbally interpreted as Highly Acceptable.

In general, both the students and household obtained a weighted mean of 4.30 which is verbally interpreted as highly acceptable.

4.3 Availability

Table 13
Acceptability as to Availability

Criteria	Students			Household			CWM	
	N	WM	VI	N	WM	VI	WM	VI
Availability	72	3.78	A	29	3.72	A	3.75	A

As a summary on the products' acceptability in terms of its availability among the students it obtained a weighted mean of 3.78 as verbally interpreted as Acceptable and so with the household it obtained a weighted mean of 3.72 as verbally interpreted as Acceptable.

In general, both the students and household obtained a weighted mean of 3.75 which is verbally interpreted as acceptable.

Table 14
Summary on the Acceptability of Respondents on the Produced Margosa Mosquito Repellent Solution

Criteria	Students		Household		CWM		Rank
	WM	VI	WM	VI	WM	VI	
Marketability	4.21	HA	4.21	HA	4.21	HA	1
Availability	3.78	A	3.72	A	3.75	A	2
Composite Weighted Mean	4.00	A	3.97	A	4.09	A	

Among the two factors on the acceptability evaluated by the respondents, marketability is in rank 1 with a weighted mean value obtained of 4.21 and verbally interpreted as Highly Acceptable; and followed by availability which obtained a weighted mean value of 3.75 and verbally interpreted as Acceptable.

Generally, both students and the household evaluated on the acceptability of the produced (MMRS) Margosa Mosquito Repellent Solution is acceptable in terms of marketability and availability supported by the obtained weighted mean value of 4.09.

5. What are the problems encountered by the researcher in the production of Margosa Mosquito Repellent Solution (MMRS)?

Table 14
Problems encountered by the researcher in the Production of Margosa Mosquito Repellent Solution (MMRS)

Problems Encountered	Rank According to Mean	VI	Rank
1. Cost of Material	4.04	E	3.5
2. Availability of Margosa	4.22	HE	1
3. Cost of production	4.12	E	2
4. Method of Preparation	4.04	E	3.5
5. Time allotment while doing	4.04	E	3.5
Composite Weighted Mean	4.09	E	

With regards to the problems encountered by the researchers, there are five (5) problems manifested during the production of "MMRS" Margosa Mosquito Repellent Solution. As shown in the table, item no. 2 is in rank 1 which obtained a mean value of 4.22 which is verbally interpreted as Highly Encountered; it followed by the item no. 3 which obtained a mean value of 4.12 which is verbally interpreted as Encountered; it followed by item no. 1, 4 and 5 which obtained the same mean value of 4.04 which is verbally interpreted as Encountered. Generally, the researchers during the production of Margosa Mosquito Repellent Solution, they encountered all the five items listed in the table which they obtained a mean value of 4.09 which is verbally interpreted as Encountered.

CONCLUSIONS

Based on the findings of the study, the following conclusions are drawn:

1. There are different tools and apparatus necessary in the production of Margosa Mosquito Repellent Solution. The materials needed are available in the community environment which is a low cost mosquito repellent.
2. The produced MMRS or Margosa Mosquito Repellent Solution showed an evident quality and characteristics as evaluated by the respondents.
3. There is a significant difference between the assessment of the students and the household along Legarda Sampaloc Manila on the quality and characteristics of the MMRS or Margosa Mosquito Repellent Solution in terms of aroma, viscosity and appearance.
4. The produced MMRS is acceptable to the selected students of EARIST and household along Legarda Sampaloc Manila in terms of its marketability and availability.

5. There are five towering problems encountered by the researcher in the production of MMRS or Margosa Mosquito Repellent Solution.

RECOMMENDATION

In the light of the findings of the study, the following are highly recommended:

1. Should revisit their technology training in TLE pre – service teacher education program.
2. Should support the TLE pre – service teachers' technology training with more experiential, hands- on, authentic and constructivist activities.
3. Provide advance hands – on skills courses through preparation of TLE more modernized instructional materials.
4. More in - service trainings and seminar workshop on a TESDA related activity for a TLE pre – service teachers program.
5. May employ technology support task force for both technical and instructional purposes.
6. Should prepare on-going technology plan.
7. Replicate the study using different variables and in different setting.

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TRIKETORIDE

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INTRODUCTION

In these vast changing times, Technological advancement and innovation offers a wide service and resources in helping human. People never lose ideas in improving old ways through the utilization of technology. In the past few years, many things are easily invented and new designs are being developed. Some people are encouraged to use the modern technology for the sake of giving them the most convenient way in their daily lives.

Accessibility is one of the most important part of technology in the world. Technologies are growing from time to time and invade our world nowadays not only in terms of gadgets, social medias, and businesses but also in transportation and it is one of the very important parts of daily life. The transportation system innovates faster by creating some gadgets, systems and applications to help commuters lessen the hassle of traveling and get a vehicle as fast as they want. Some developers created applications like Grab and Angkas that will become one of the new features in the future.

With the different application that is now readily available and accessible in the market, we have decided come up with a new features that is more convenient and less expensive through this mobile application called TrikeToRide.

METHODOLOGY

A descriptive-developmental method was used as the research design on the development of the system. The purpose of this design is to describe the nature of a conditions and present practices as they exist at the time of research. Quota sampling technique of the non-random sampling method used by the researcher. These comprised of a total of Eighty Four (84) respondents composed of BSCS, BSCT, IT Experts, and End Users in evaluating the system. Also, Fifty (50) respondents in evaluating the most common mode of public transportation in General Mariano Alvarez, Cavite. The researcher utilized data gathering instruments such as interviews, reading of related literature and questionnaire as the main instrument used. The instrument was validated by two IT experts from Industry Practitioner and two IT professors from the Computer Department.

Data were analyzed, tabulated and presented through tables. The study applied the statistical measures deemed appropriate in the presentation and interpretation of the data generated from the study. Descriptive statistics like percentage and weighted mean where sets of criteria were adopted to determine the respondents' perception on the degree of acceptability of the system.

RESULTS AND DISCUSSION

Subproblem No. 1: What are the common modes of public transportation in G.M.A., Cavite?

- 1.1 Tricycle;
- 1.2 Jeepney; and
- 1.3 Pedicab?

Table 1
Common mode of public transportation in General Mariano Alvarez, Cavite

	Frequency(f)	Percentage (%)
Tricycle	32	64%
Jeepney	15	30%
Pedicab	3	6%
Total	50	100%

As shown in the table 1, the mode of transportation in G.M.A., Cavite is tricycle with the highest percentage of 64%, followed by jeepney with 30% and the least mode of transportation is pedicab with 6%. The findings show that the common mode of transportation utilized by the respondents is tricycle.

Subproblem No. 2. What are the Features of developed TrikeToRide mobile application?

The features of the developed TrikeToRide mobile application are the following: Login Form, Home View and Reserve Form.



Figure 1. Login Form

Figure 1 shows the Login Form of the application.

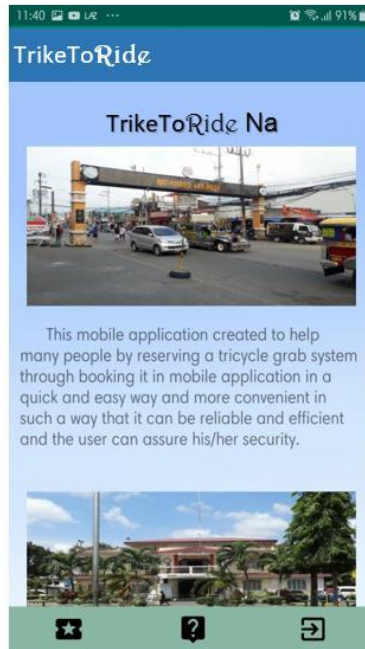


Figure 2. Home View

Figure 2 shows the home view of the application and the navigation toolbar including the activity image button, help image button and the logout image button.

The screenshot shows the reserve form of the TrikeToRidz mobile application. The form is set against a light blue background. At the top, there is a blue header with the app's name 'TrikeToRidz'. Below the header, the text 'Service Number:' is followed by a text input field containing the number '09067588628'. Below this, the text 'Client:' is followed by a text input field. Below that, the text 'From:' is followed by a text input field. Below that, the text 'Destination:' is followed by a text input field. At the bottom of the form, there is a dark blue button with the text 'RESERVE' in white capital letters.

Figure 3. Reserve Form

Figure 3 shows the activity of reserving/ booking of a tricycle.

Subproblem No. 3: What is the respondent's level of acceptance in the developed TrikeToRide Mobile Application in terms of the following:

3.1 Performance Effectiveness

Table 2
Level of Acceptance of the TrikeToRide Mobile App in Terms of Performance Effectiveness

Performance Effectiveness	End-User	IT	Students	Weighted Mean	Verbal Interpretation	Ranking
1. Able to perform all required task.	4.45	3.25	4.56	4.09	Very Acceptable	2
2. Able to perform a task that may be designed in the future.	4.43	3.00	4.30	3.91	Very Acceptable	3
3. Well design and appropriateness of display screens.	4.47	2.50	4.44	3.81	Very Acceptable	4
4. Adequate capacity to perform the required task.	4.40	3.50	4.44	4.11	Very Acceptable	1
Composite Mean	4.44	3.06	4.44	3.98	Very Acceptable	

Table 2 exhibit the evaluation of respondents as to Performance Effectiveness of the system. Able to perform all required task got 4.09; Able to perform a tasks that may be designed in the future got 3.91; Well design and appropriateness of display screens got 3.81; Adequate capacity to perform the required task got 4.11 with verbal interpretation of very acceptable. The findings signify that the respondents evaluated the system with a Very Acceptable verbal interpretation having a composite mean of 3.98.

3.2 Performance Efficiency

Table 3
Level of Acceptance of the TrikeToRide Mobile App in terms of Performance Efficiency

Performance Efficiency	End-User	IT	Students	Weighted Mean	Verbal Interpretation	Ranking
1. Fast response time	4.28	3.50	4.48	4.09	Very Acceptable	1
2. Efficient Input	4.15	3.50	4.52	4.06	Very Acceptable	2
3. Efficient Output	4.15	2.75	4.37	3.76	Very Acceptable	3
4. Efficient Backup	4.25	2.50	4.52	3.75	Very Acceptable	4
Composite Mean	4.21	3.06	4.47	3.91	Very Acceptable	

Table 3 presents the Performance Efficiency of the system as evaluated by the respondents. All of the criteria had a verbal interpretation of Very Acceptable. Fast response time obtained the highest mean of 4.09. This is followed Efficient Input with a weighted mean of 4.06; Next Efficient Output with a weighted mean of 4.37; while Efficient Backup attained the lowest weighted mean of 3.75. The overall mean is 3.91, verbally interpreted as Very Acceptable.

3.3 User Interface Design

Table 4
Level of Acceptance of the TrikeToRide Mobile App of User Interface Design

User Interface Design	End-User	IT	Students	Weighted Mean	Verbal Interpretation	Ranking
1. Focus on basic Objectives	4.43	2.75	4.33	3.84	Very Acceptable	5
2. Build an interface that is easy to learn	4.53	3.00	4.37	3.97	Very Acceptable	2
3. Provides features that is easy to learn and use	4.40	3.25	4.19	3.94	Very Acceptable	3
4. Make it easy for users to obtain help or correct errors	4.36	3.25	4.19	3.93	Very Acceptable	4
5. Minimize input problems	4.26	2.75	4.44	3.81	Very Acceptable	6
6. Provide feedback to users	4.40	3.50	4.30	4.06	Very Acceptable	1
7. Attractive layout and design	4.38	3.00	4.33	3.90	Very Acceptable	7
Composite Mean	4.39	3.07	4.31	3.92	Very Acceptable	

Table 4 displays the User Interface Design of the system as evaluated by the respondents. Based on the computed values Provide feedback to users got the highest mean of 4.06, verbal interpretation of very acceptable. Attractive layout and design with the lowest weighted mean of 3.90 with verbal interpretation of Verbal Acceptable. Based on the findings the respondents evaluated the system with composite mean of 3.91 with verbal interpretation of Very Acceptable.

3.4 Flexibility

Table 5
Level of Acceptance of the TrikeToRide Mobile App in terms of Flexibility

Flexibility	End-User	IT	Students	Weighted Mean	Verbal Interpretation	Ranking
1. Option for input	4.40	2.75	4.44	3.86	Very Acceptable	3
2. Option for Output	4.40	2.50	4.48	3.79	Very Acceptable	4
3. Attain the purpose of the output	4.47	3.00	4.37	3.95	Very Acceptable	2
4. Indicates the needed information	4.51	3.00	4.37	3.96	Very Acceptable	1
5. Usability with other environment	4.47	2.50	4.26	3.74	Very Acceptable	5
Composite Mean	4.45	2.75	4.24	3.81	Very Acceptable	

Table 5 represents the computed data for Flexibility of the system is very acceptable based on the composite mean of 3.81. Furthermore, the system Options for input got 3.86 weighted mean, Options for output got 3.79 weighted mean, Attain the purpose of the output got 3.95 weighted mean, Indicates the needed information got 3.96 weighted mean, Usability with other environment got 3.74 weighted mean with verbal interpretation of very acceptable.

3.5 Accuracy

Table 6
Level of Acceptance of the TrikeToRide Mobile App in terms of Accuracy

Accuracy	End-User	IT	Students	Weighted Mean	Verbal Interpretation	Ranking
1. Can provide the right information	4.57	3.00	4.41	3.99	Very Acceptable	2
2. Able to perform the right necessity	4.53	3.50	4.33	4.12	Very Acceptable	1
3. Provide accurate dialog box and response accordingly to the application	4.53	3.00	4.37	3.97	Very Acceptable	3
Composite Mean	4.54	3.17	4.37	4.03	Very Acceptable	

As shown in Table 6, the evaluation of respondents as to level of acceptance in terms of accuracy of the system is very acceptable based on the Composite Mean of 4.03. Also, Able to perform the right necessity is very acceptable with weighted mean of 4.12, Can provide the right information is very acceptable with 3.99 weighted mean, and lastly, Provide accurate dialog box and response accordingly to the application got very acceptable with 3.97 weighted mean.

3.6 Security

Table 7
Level of Acceptance of the TrikeToRide Mobile App in terms of Security

Security	End-User	IT	Students	Weighted Mean	Verbal Interpretation	Ranking
1. Provide security options for accessing the application	4.51	3.25	4.70	4.15	Very Acceptable	2
2. Requires a username and password authentication before user can login	4.57	4.00	4.59	4.39	Strongly Acceptable	1
Composite Mean	4.51	3.25	4.70	4.15	Very Acceptable	2

Table 7 displays the Security of the system as evaluated by the respondents with a strongly acceptable based on the composite mean 4.27 results. Provides security options for accessing the application is very acceptable with weighted mean of 4.15, and requires a username and password authentication before user can login got strongly acceptable with a weighted mean of 4.39.

3.7 Help Option

Table 8
Level of Acceptance of the TrikeToRide Mobile App in terms of Help Option

Help Option	End-User	IT	Students	Weighted Mean	Verbal Interpretation	Ranking
1. Provide help options for accessing the system.	4.64	3.75	4.26	4.22	Strongly Acceptable	1
2. Able to give appropriate information	4.53	3.50	4.33	4.12	Very Acceptable	3
3. Able to give information of frequently ask question	4.64	3.50	4.44	4.20	Strongly Acceptable	2
Composite Mean	4.60	3.58	4.35	4.18	Very Acceptable	

Table 8 displays the Help Option of the system as evaluated by the respondents. Based on the evaluation of the respondents, two out of three criteria had a verbal interpretation of Strongly Acceptable and the remaining question is Very Acceptable. Provide help options for accessing the system got the highest rank with an weighed mean of 4.22, Able to give information of frequently ask question with an weighted mean of 4.20. Lastly, Able to give appropriate information got 4.12 weighted mean with verbal interpretation of very acceptable. The findings signify that the respondents evaluated the system with a Very Acceptable verbal interpretation having an composite mean of 4.18.

Table 9
Summary on the Level of Acceptance of the TrikeToRide Mobile App

Criteria	End-User	IT	Students	Weighted Mean	Verbal Interpretation	Ranking
1. Performance Effectiveness	4.44	3.06	4.44	3.98	Very Acceptable	4
2. Performance Efficiency	4.21	3.06	4.47	3.91	Very Acceptable	6
3. User Interface Design	4.39	3.07	4.31	3.92	Very Acceptable	5
4. Flexibility	4.45	2.75	4.24	3.81	Very Acceptable	7
5. Accuracy	4.54	3.17	4.37	4.03	Very Acceptable	3
6. Security	4.56	3.63	4.65	4.27	Very Acceptable	1
7. Help Option	4.60	3.58	4.35	4.18	Very Acceptable	2
Grand Mean	4.46	3.19	4.40	4.01	Very Acceptable	

Table 9 presents the summary of evaluation of respondents on the level of acceptance entertainment and educational Android game. The Security got the highest rating of 4.27. Help Option got 4.18, Accuracy got 4.03, Performance Effectiveness got 3.98, User Interface Design got 3.92, Performance Efficiency got 3.91 and Flexibility got 3.81. All interpreted as Very Acceptable. Findings show that the system is Very Acceptable with a 4.01 grand mean.

CONCLUSIONS AND RECOMMENDATIONS

From the findings of the study, the following are the conclusions:

1. The majority of the respondents utilized tricycle as the mode of transportation.
2. The salient features of TrikeToRide are user-friendly, accessible and cost-effective.
3. The developed TrikeToRide is very acceptable and could be utilized as a new mobile application.

Based on the findings of the study, the following are the recommendations:

1. The TrikeToRide can be used and improved by the programmers and researchers.
2. The TrikeToRide can be partnered with the local government unit such as DICT.
3. The TrikeToRide can be used as an extension program from institute to the tricycle associations.
4. The researchers recommend financial support for intellectual property purposes.

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CIRCUIT CRAFT: AN ANDROID GAME

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INTRODUCTION

As people conquer new things in present generation, modern technology is essential in people's everyday living. Today, society is different to the ones that existed not so many years ago that constantly changing. Modern technology becomes people satisfaction as years passed by. There are new ideas transformed in a useful application that people and society found it educational and entertaining. Through people's intelligence they create more efficient and effective application that makes different activities accomplished easily. People are now much dependent on different applications, as it has a great contribution to the society.

People use technology on a daily basis to accomplish specific tasks or interests and some people seek for different application that will entertain their self and motivate their skills with different aspects of logic design. Engaging to an educational application that encourage students to challenge themselves and improve logical thinking ability, results to creation on an application, offers an opportunity to practice, overcome a problem without a supervision of a teacher through learning activities and lecture part. The proponents proposed application entitled Circuit Craft.

Circuit Craft is an educational and entertainment provided a lecture type application that discuss, the seven basic Integrated Circuit and its truth table, basic components consist of resistors, LED's (Light Emitting Diode), breadboard and logic switch. This will help them to broaden up their mind in varied application of logic.

MATERIALS AND METHODS

The researchers chose Descriptive-Developmental Design. Developmental research, as opposed to simple instructional development, it has been defined as the systematic study of designing, developing, and evaluating instructional programs, processes, and products that must meet criteria needed for internal consistency and effectiveness. Developmental research is particularly important in the field of instructional technology.

The researchers used Quota Sampling for this study and gather information through samples that are given to several third year and fourth year students of Bachelor of Science in Computer Technology and Bachelor of Science in Computer Science. For the end user, the researchers chose several students from first year to fourth year students from Industrial Technology Major in Electronics and Industrial Technology Major in Electrical of Eulogio "Amang" Rodriguez Institute of Science and Technology with the IT experts. Due to small amount of number of the IT Experts, the researchers used Purposive Sampling from each of these sections for they are obliged to answer the evaluation. The sample size will be chosen proportionally regardless of their gender.

The main tool used in the study is through the use of Survey Questionnaire/Evaluation Form. Evaluation Form consists of Profile of Evaluator were the respondents indicated information including name, age, gender, profession, computer literacy and, a questionnaire table about how the respondents see and rate the study according to its performance

effectiveness, performance efficiency, user design interface, flexibility, security, help options and accuracy.

Data Gathering Procedures

The data of the study were checked, classified, tabulated, analyzed, and compiled using a survey questionnaire. The survey was created using applicable questions adapted from some related research and individual questions assembled by the researchers and they will also ask permission to their instructor to conduct the survey in Eulogio “Amang” Rodriguez Institute of Science and Technology.

A table will be presented in the evaluation form, the evaluator will check on the rating that they want to give to the proponents based on what do they think about the android application entitled “Circuit Craft” that is written in the columns that produced adjectival meaning and described the quality of the Application presented.

Statistical Treatment of Data

Breaking down data into statistics is one way of getting the information organized and to have a general view of a whole survey of the study. A frequency distribution table shows a summarized grouping of data divided into mutually exclusive classes and the number of occurrences in a class.

The data collected will be analyzed and tabulated. The responses were based on the respondents. The ranges of the survey are shown in the table. This is the following method that the researchers will use;

1. **Weighted Mean** – it is used to determine the equal average of the students according to the respondents concerns.

Formula:

$$\text{Mean} = \frac{W_1 + \dots + W_n}{X}$$

Where:

W = the weights

X = the value

2. **Ranking** – it is used to organize the criteria in order of ranges from highest to lowest.

Formula: Ranking = F/V

Where:

F = position of an entity from highest to lowest

V = quantity of an object in position

Rating	Scale	Adjectival Meaning
5	4.20 – 5.0	Highly Acceptable
4	3.40 – 4.19	Very Acceptable
3	2.60 – 3.39	Acceptable

2	1.80 – 2.59	Less Acceptable
1	1.00 – 1.79	Not Acceptable

3. **Percentage** – concludes on how many respondents look into the system.

Formula:

$$\text{Percentage} = \frac{F * 100}{N}$$

Where:

F = frequency
N = sample size
100 constant factor

4. **Frequency** – it is used to conclude on how many respondents look into the system by Name, Gender, Age, and Professions.

RESULT AND DISCUSSION

Significant Difference on the Assessments of the Respondents as to Performance Effectiveness

PERFORMANCE EFFECTIVENESS	P-value	Conclusion	Interpretation
END USER VS IT EXPERTS	0.558	Reject Ho	NS
IT STUDENTS VS IT EXPERTS	0.165	Reject Ho	NS
END USER VS IT STUDENTS	0.320	Reject Ho	NS

Table above revealed that the p-value ($p=.558$) on the assessment of the end-user and IT experts as to performance effectiveness is greater than .05 thus the respondents has no significant difference. The IT students and IT experts assessments also showed that the p-value ($p=.165$) is greater than .05 therefore there has no significant difference on their assessments. Moreover, the end-user and IT students assessments based on the p-value of .320 showed that it is greater than .05 which means that their assessments has no significant difference.

Table 15
Significant Difference on the Assessments of the Respondents as to Performance Efficiency

PERFORMANCE EFFICIENCY	P-value	Conclusion	Interpretation
END USER VS IT EXPERTS	0.498	Reject Ho	NS
IT STUDENTS VS IT EXPERTS	0.012	Accept Ho	S
END USER VS IT STUDENTS	0.609	Reject Ho	NS

Table above revealed that the p-value ($p=.498$) on the assessment of the end-user and IT experts as to performance efficiency is greater than .05 thus the respondents has no significant difference. The IT students and IT experts assessments also showed that the p-

value ($p=.012$) is lesser than $.05$ therefore there is significant difference on their assessments. Moreover, the end-user and IT students assessments based on the p -value of $.609$ showed that it is greater than $.05$ which means that their assessments has no significant difference.

Table 16
Significant Difference on the Assessments of the Respondents as to User Interface

USER INTERFACE	P-value	Conclusion	Interpretation
END USER VS IT EXPERTS	0.098	Reject Ho	NS
IT STUDENTS VS IT EXPERTS	0.192	Reject Ho	NS
END USER VS IT STUDENTS	0.445	Reject Ho	NS

Table above revealed that the p -value ($p=.098$) on the assessment of the end-user and IT experts as to user interface is greater than $.05$ thus the respondents has no significant difference. The IT students and IT experts assessments also showed that the p -value ($p=.192$) is greater than $.05$ therefore there is no significant difference on their assessments. Moreover, the end-user and IT students assessments based on the p -value of $.445$ showed that it is greater than $.05$ which means that their assessments has no significant difference.

Table 17
Significant Difference on the Assessments of the Respondents as to Accuracy

ACCURACY	P-value	Conclusion	Interpretation
END USER VS IT EXPERTS	0.086	Reject Ho	NS
IT STUDENTS VS IT EXPERTS	0.405	Reject Ho	NS
END USER VS IT STUDENTS	0.204	Reject Ho	NS

Table above revealed that the p -value ($p=.086$) on the assessment of the end-user and IT experts as to accuracy is greater than $.05$ thus the respondents has no significant difference. The IT students and IT experts assessments also showed that the p -value ($p=.405$) is greater than $.05$ therefore there is no significant difference on their assessments. Moreover, the end-user and IT students assessments based on the p -value of $.204$ showed that it is greater than $.05$ which means that their assessments has no significant difference.

Table 18
Significant Difference on the Assessments of the Respondents as to Flexibility

FLEXIBILITY	P-value	Conclusion	Interpretation
END USER VS IT EXPERTS	0.585	Reject Ho	NS
IT STUDENTS VS IT EXPERTS	0.502	Reject Ho	NS
END USER VS IT STUDENTS	0.837	Reject Ho	NS

Table above revealed that the p -value ($p=.585$) on the assessment of the end-user and IT experts as to flexibility is greater than $.05$ thus the respondents has no significant difference. The IT students and IT experts assessments also showed that the p -value ($p=.502$) is greater than $.05$ therefore there is no significant difference on their assessments. Moreover, the end-

user and IT students assessments based on the p-value of .837 showed that it is greater than .05 which means that their assessments has no significant difference.

Table 19
Significant Difference on the Assessments of the Respondents as to Security Option

SECURITY OPTION	P-value	Conclusion	Interpretation
END USER VS IT EXPERTS	0.944	Reject Ho	NS
IT STUDENTS VS IT EXPERTS	0.903	Reject Ho	NS
END USER VS IT STUDENTS	0.768	Reject Ho	NS

Table above revealed that the p-value ($p=.944$) on the assessment of the end-user and IT experts as to security option is greater than .05 thus the respondents has no significant difference. The IT students and IT experts assessments also showed that the p-value ($p=.903$) is greater than .05 therefore there is no significant difference on their assessments. Moreover, the end-user and IT students assessments based on the p-value of .768 showed that it is greater than .05 which means that their assessments has no significant difference.

Table 20
Significant Difference on the Assessments of the Respondents as to Help Option

HELP OPTION	P-value	Conclusion	Interpretation
END USER VS IT EXPERTS	0.282	Reject Ho	NS
IT STUDENTS VS IT EXPERTS	0.175	Reject Ho	NS
END USER VS IT STUDENTS	0.696	Reject Ho	NS

Table above revealed that the p-value ($p=.282$) on the assessment of the end-user and IT experts as to help option is greater than .05 thus the respondents has no significant difference. The IT students and IT experts assessments also showed that the p-value ($p=.175$) is greater than .05 therefore there is no significant difference on their assessments. Moreover, the end-user and IT students assessments based on the p-value of .696 showed that it is greater than .05 which means that their assessments has no significant difference.

CONCLUSION

After evaluating the researchers conclude that:

1. The result of Evaluation of the system is "Acceptable" for each question in both students and end users. The IT Experts shows "Very Acceptable" in Performance Effectiveness and Accuracy and gives the result of "Acceptable" in the remaining criteria.
2. The lowest rank that the System get is the "Help Option" so the researcher must develop the way on how the researchers deliver the instructions provided by the system.

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EMERGENCY COMMUNICATION SYSTEM

Engr. Rene Gene R. Repique

INTRODUCTION

Telecommunication is already integrated in our everyday lives, from ordering food, meetings, online studies, etc. Telecommunications can also be used as a way of disseminating knowledge about the imminent danger, enabling individuals to take the required measures to minimize the effect of these hazards. (Fakhruddin, 2007)

The greatest technological obstacle after a tragedy is the quick deployment of communications systems for first responders and emergency recovery workers. This applies irrespective of whether the communications network (electricity, telephone and/or network access infrastructure) has been entirely lost or as in the case of some remote geographic areas, the infrastructure has historically been non-existent. (Manoj and Baker, 2007)

Disaster and emergency preparedness have recently reached the consciousness of the government and the general public. However, there are still remote areas that have weak telecommunication signals. Hence, this research attempted to develop an emergency communication system for use in emergency / disaster events.

STATEMENT OF THE PROBLEM

The study specifically seeks to develop an emergency communication system, and identify the assessment of the three groups of respondents namely, Students and Professors from the engineering field, and Practitioners from engineering and disaster management field in terms of its Functionality, Usability, Reliability, Efficiency, and Maintainability.

HYPOTHESIS

There is no significant difference between the assessment of the three groups of respondents in terms of its Functionality, Usability, Reliability, Efficiency, and Maintainability.

METHODOLOGY

The research used the developmental type of research which has been defined as the systematic study of designing, developing, and evaluating instructional programs, processes, and products that must meet criteria of internal consistency and effectiveness.

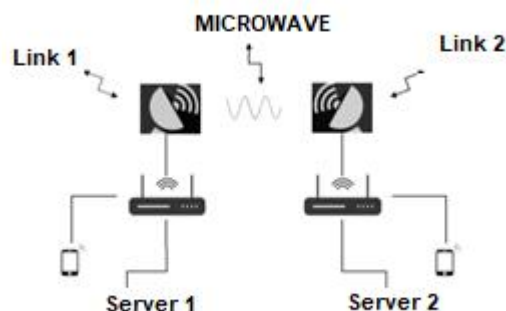


Figure 1. Schematic Diagram of the Emergency Communication System

Figure 1, shows the schematic diagram of the Emergency Communication System which implements a microwave link for communication between two servers which is also equipped with a WIFI network to enable the use of WIFI enable device as a medium for communication.

1. FUNCTIONALITY	5	4	3	2	1
1.1 Functional Completeness. Degree to which the set of function covers all the specified tasks and user objectives.					
1.2 Functional Correctness. Degree to which the System provides the correctness of results with the needed degree of precision					
1.3 Functional appropriateness. Degree to which the functions facilitate the accomplishment of specified tasks and objectives					
2. USABILITY	5	4	3	2	1
2.1 Operability. Degree to which the system has attributes that make it easy to operate and control.					
2.2 Accessibility. Degree to which the system can be used by people with widest range of characteristics and capabilities to achieve a specified context of use.					
2.3 User interface aesthetics. Degree to which a user interface enables pleasing and satisfying interaction for the user.					
3. RELIABILITY	5	4	3	2	1
3.1 Maturity. Degree to which the system meets needs for reliability under normal operation.					
3.2 Availability. Degree to which the system is operational and accessible when required for use					
3.3 Fault Tolerance. Degree to which a system, product or component operates as intended despite the presence of hardware or software faults.					
4. EFFICIENCY	5	4	3	2	1
4.1 Time Behavior. Degree to which the response and processing time and throughput rates of system, when performing its functions, meet requirements.					
4.2 Resource utilization. Degree to which the amount and types of resources used by the system, when performing its functions, meet requirements.					
4.3 Capacity. Degree to which the maximum limits of the system parameter meets requirements.					
5. MAINTAINABILITY	5	4	3	2	1
5.1 Modularity. Degree to which the system is composed of discrete components such that a change to one component has minimal impact on other components.					
5.2 Reusability. Degree to which an asset can be used in more than one system, or in building other assets.					
5.3 Modifiability. Degree to which the system can be effectively and efficiency modified without introducing defects or degrading existing system quality.					

Figure 2. Questionnaire Used by the Respondents to Assess the Emergency Communication System

Fig. 2, shows the questionnaire used by the respondents to assess the Emergency Communication System in terms of its, functionality, usability, reliability, efficiency and maintainability.

FINDINGS

Figure 3, shows the summary of assessment of the respondents.

Indicators	Students		Professors		Practitioners		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	WM	VI	
Functionality	4.73	E	4.60	E	4.70	E	4.68	E	1
Usability	4.55	E	4.63	E	4.57	E	4.58	E	4
Reliability	4.62	E	4.73	E	4.67	E	4.67	E	2.5
Efficiency	4.52	E	4.57	E	4.53	E	4.54	E	5
Maintainability	4.72	E	4.67	E	4.63	E	4.67	E	2.5
Overall Weighted Mean	4.63	E	4.64	E	4.62	E	4.63	E	

Figure 3. Summary of Assessment of the Respondents

This shows that the group of respondents rated all the indicators as excellent: rank 1, functionality with a composite weighted mean of 4.56; rank 2, usability with a composite weighted mean of 4.29; rank 3, efficiency with a composite weighted mean of 4.26; rank 4, reliability with a composite weighted mean of 4.26; and rank 5, maintainability with a composite weighted mean of 4.22 with an overall composite weighted mean of 4.32 verbally interpreted as excellent.

Figure 4, shows the summary on the significant difference on the respondents.

Source of Variation	SS	df	MS	F	CV	VI	Decision
Functionality							
Between Groups	0.19	2	0.097	6.12	5.14	S	Reject
Within Groups	0.09	6	0.016				
Usability							
Between Groups	0.24	2.00	0.12	5.27	5.14	S	Reject
Within Groups	0.14	6.00	0.02				
Reliability							
Between Groups	0.01	2.00	0.01	0.05	5.14	NS	Failed to Reject
Within Groups	0.85	6.00	0.14				
Efficiency							
Between Groups	0.30	2.00	0.15	4.12	5.14	NS	Failed to Reject
Within Groups	0.22	6.00	0.04				
Maintainability							
Between Groups	0.14	2.00	0.07	2.80	5.14	NS	Failed to Reject
Within Groups	0.15	6.00	0.02				

Figure 4. Summary on the Significant Difference on the Respondents

Comparing the assessments of the three groups of respondents yielded F computed of 6.12 for Functionality, 5.27 for Usability, 0.05 for Reliability, 4.12 for Efficiency, and 2.80 for Maintainability.

CONCLUSIONS

From the salient findings, the following conclusions were derived:

1. The Emergency Communication System in terms functionality accomplishes all specified tasks and user objectives with the needed degree of precision.
2. In terms of usability it has attributes that make it easy to operate and control while enabling pleasing and satisfying interaction for the user with wide range of characteristics and capabilities to achieve specified context of use.
3. It meets the needs for reliability under normal operation and that the system is functioning and accessible when required to be used and with a degree of tolerance to faults.
4. It has excellent processing time using the maximum limits of the system, and resources when performing functions to meet requirements making it efficient.
5. It is modifiable, achieves modularity, and is reusable in other systems.
6. The students and Professors and Practitioners have similar assessment on the Emergency Communication System as to its functionality, efficiency and maintainability but have different valuation as to its usability and reliability.

As a whole the Emergency Communication System is functionally reliable, is efficient, with a degree of usability and maintainability.

RECOMMENDATIONS

In the light of the conclusions drawn, the researcher recommends that further assessment may be used to ensure the usability and reliability of the emergency communication system before implementation.

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TRIAPPS*Edgardo R. Sison***INTRODUCTION**

Tricycles are the second most popular means of transportation here in the Philippines. Based on the statistics from the year 2013, the number of registered Tricycle in the Philippines is 3.58 million. These vehicles have been around for quite some time that banning them is really impossible. Tricycle or sometimes called as "trike" is a three-wheeled public utility vehicle consisting of a motorcycle and an attached passenger's side car. These trikes can be found everywhere in the country except on major or main roads. (Huerta, 2015) The tricycle is a Philippine transportation vehicle that is so useful in many ways. It is adaptable, able to change or be changed in order to fit or work better in some situation or for some purpose in rural and urban places. Motorized tricycle transportation business can be a profitable business venture due to the large number of people relying on this means of transportation. Based on the study of Huerta (2015) normally, a tricycle can accommodate three to five passengers and luggage can be placed on the roof. Three people can fit inside the side car and usually one or two passengers can ride behind the driver, if safety measures are considered. The reasons why tricycle are much better is because of the fair, it is easy on the pocket, if you have a car you will pay for parking fee and fuel. Second, tricycle is everywhere no needs to use any application to find where to ride. Third it is easy to maintain and operate, next, no special skills necessary to operate. Also, if you have a car and still riding in a tricycle it can contribute to the prolonging life of your car. Korothe, reveals that satisfaction is one of the most widely studied, it builds in business relationships which fosters a greater commitment to the drivers and passengers (2014). Therefore, satisfaction is regarded as one important indicator of relationship quality between the one who do business and the most important in the whole life of the business (Bronnenmayer et.al 2016). The main reason why passengers keep riding tricycle is their satisfaction. Money is not a big deal when your need meets your satisfaction. Drivers must have specialized licenses, regular routes, and not too expensive fixed fares. According to the "A Tricycle ride in the Philippines" fare starts from Php 8.00 and up, depending on the locality and the distance to be ridden. They are always available, cheap and fast. If you want to pay the lowest fare, you will wait until the tricycle is filled up with passengers. But if you want the tricycle alone, just tell the driver you want a "special" ride. Then after that, it will bring you to every desired place. The tricycle drivers carry their passengers to their desired destination for a small fee, but having that such work is a risk to a driver's life because it can cause a lot of diseases caused by air pollution and other factors that can affect the life of a driver. Every driver wants to sustain and provide the needs of their families but they do not know what are the technique and solution they need to surpass all the challenges in their everyday life. Some of the tricycle drivers chose this profession due of their poverty and not able to finish their studies. The tricycle is a Philippine transportation vehicle that rules inner roads and narrow streets. The "tricycle" that has been known in Philippines was composed of the excess body parts left after the conversions. The assembled sidecars attached to motorcycles. It is one of the most remarkable, descent and cheap means of transportation, also one of the major sources of livelihood for low-income earners and unemployed people. The drivers are faced with many problems including educational level, incentive alignment with the owners, accessibility to information and high level of needing money (Sietchiping et.al 2012). Tricycle, are the small version of jeepney, because of their number that crowd the streets every day, blocking people's way and also creates traffic. Being a tricycle driver is difficult to experience because you should be strong and healthy. They are always on the road so probably their health can be affected because of polluted air and changes in weather. According to Merriam Webster (2019), health is the condition of being well or free from disease. Tricycle drivers are exposed to polluted environment that can cause a number of concerns

towards health. They are prone on acquiring non communicable diseases such as cough, pulmonary diseases and respiratory diseases. Sudden change in weather can also affect the health of the tricycle drivers. They are also prone to having discomforts and body pains since they spend an average of at least ten hours on the road. They are subjected to improper or awkward positions for a long period and vehicle measurements do not suit their needs. The absence of street lights and lack of sleep while driving can be a factor of many accidents in the road. Due to several health practices of tricycle drivers, it can lead them to road accidents. There are several factors that can weaken your health one of these can be your work. In the Philippines, tricycle drivers are Filipino who work long days and endure a lot of difficulties to provide the needs for their daily living or source of family income. Usually the father is the one who drives a tricycle as source of income, but nowadays being practical of Filipinos some drivers are women to sustain financial income. The purpose of this research is to develop a tricycle application that will cater the passengers both for public transportation and as an emergency response. Also, this study will give tricycle drivers a chance to have an additional income once they are a fully registered driver if this research will be properly implemented of the chosen tricycle Toda. In the other hand, this study aims to know what are the effect of traffic congestion once the driver has been booked for emergency response, to discover new ideas and convinced people out there that every downs, there are ups it depends on how you will handle things proportionally.

SCOPE AND DELIMITATION

Scope

The scope of the project covered the design and development of a tricycle application that can cater a booking transaction for both normal booking and as an emergency response transaction. This project focused on providing an application for tricycle toda.

The researchers focused on the availability of the mode of transportation in the vicinity wherein the streets are too narrow for bigger mode of transportation. The scope of the study also focused on development of web base of application of the said project.

Delimitation

The delimitation had set its delimitation; it should be only tricycle toda within the area near Eulogio "Amang" Rodriguez Institute of Science and Technology. The researchers also delimit toda to maximum of two tricycle toda namely; (1) Valencia Toda and (2) Hi-Toda.

SIGNIFICANCE OF STUDY

The research would be beneficial to the following:

The Tricycle Toda

This research would be able to upgrade the current situation of the tricycle toda specifically to manage and monitor their drivers who are official member of the toda.

The Tricycle Driver

This research will help the driver additional income as long as they are an official member of their toda.

The Future Researcher

This will serve as a guide for the future study and innovation of the project.

DEFINITION OF TERMS

The following terms are defined contextually or operationally.

Application. A program or piece of software designed and written to fulfill a particular purpose of the user.

Cellphone. A phone with access to a cellular radio system so it can be used over a wide area, without a physical connection to a network; a mobile phone.

Database. A structured set of data held in a computer, especially one that is accessible in various ways.

Driver. A person who drives a vehicle.

Login. An act of logging in to a computer, database, or system.

Mobile Application. A mobile application, also referred to as a mobile app or simply an app, is a computer program or software application designed to run on a mobile device such as a phone, tablet, or watch.

Passenger. A traveler on a public or private conveyance other than the driver, pilot, or crew.

Registration. The action or process of registering or of being registered.

Router. A device which forwards data packets to the appropriate parts of a computer network.

Tricycle. A 3-wheeled vehicle propelled by pedals or a motor.

Web Application. A web application or web app is a client–server computer program that the client runs in a web browser.

EVALUATION

The project was evaluated on the following criteria namely:

- Functionality
- Usability
- Reliability
- Efficiency
- Maintainability

DATA GATHERING PROCEDURE

1. Deciding the title of the thesis, “TriApps (Tricycle Application).”
2. Gathering data through research.
3. Presentation of the proposed title.
4. Developing the project’s architecture and interfaces.
5. Deciding on where the researchers will develop their project.
6. Gathering concepts on how to start and implement the project.
7. Testing and trial of the output.
8. Writing the final report of the thesis.
9. Final defense of the study.
10. Final checking of the output.
11. Submission of the final report.

SUMMARY OF FINDINGS

This chapter shows the findings resulting from this study.

SOP 1. Who will be beneficial of the project?

People from specific barangays are the number one benefactor of this research project where ambulatory transportation is still a major problem. Commuters will also benefit because tricycles are the main transportation in narrow streets and roads in some areas in Metro Manila.

SOP 2. What is the difference of this project to its prior arts?

TRIAPPS is designed for passengers immediately in need of tricycles. This platform offers an experience of trustworthy drivers available online. With the growing population, the demand for tricycles as the most commonly used mode of transportation among barangays in the Philippines had surged as not all people have cars of their own and majority still option to commute daily. It’s a web-based app that can be operated easily by users. The web page has a user’s friendly interface that can easily be understood.

SOP 3. What is the assessment of the three groups of respondents? namely; Professor, Students and Practitioners in terms of the following criteria? Is there any significant difference?

- a. Functionality;
- b. Usability;
- c. Reliability;
- d. Efficiency; and
- e. Maintainability.

A. *Assessment on Functionality*

As shown in Table 6, on the assessment of functionality Students and Professors rated all of the indicators as “Excellent”, but the practitioners rated all of the indicators as “Very Good” with an overall weighted mean value of 4.65, 4.43, and 4.43 respectively.

Table 6
Assessment on Functionality

Indicators	Students		Professors		Practitioners		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	WM	VI	
1.1 Functional Completeness. Degree to which the set of function covers all the specified tasks and user objectives.	4.60	E	4.60	E	3.90	VG	4.37	E	1
1.2 Functional Correctness. Degree to which the System provides the correctness of results with the needed degree of precision	4.60	E	4.30	E	3.90	VG	4.27	E	3
1.3 Functional appropriateness. Degree to which the functions facilitate the accomplishment of specified tasks and objectives	4.75	E	4.40	E	3.80	VG	4.32	E	2
Overall Weighted Mean	4.65	E	4.43	E	3.87	VG	4.32	E	

Legend:

Excellent	(E)	4.20 – 5.00
Highly Extent	(HE)	3.40 – 4.19
Good	(G)	2.60 – 3.39
Fair	(F)	1.80 – 2.59
Poor	(P)	1.00 – 1.79

They ranked these indicators as follows: rank 1, “Functional Completeness. Degree to which the set of function covers all the specified tasks and user objectives” with a composite weighted mean of 4.37; rank 2, “Functional appropriateness. Degree to which the functions facilitate the accomplishment of specified tasks and objectives” with a composite weighted mean of 4.32; and rank 3, “Functional Correctness. Degree to which the System provides the correctness of results with the needed degree of precision” with a composite weighted mean of 4.27.

It is implied that the TRIAPPS in terms functionality accomplishes all specified tasks and objectives with the needed degree of precision.

B. Assessment of Usability

On the assessment of usability, Students and Professors rated all of their indicators as “Excellent”, but the Practitioners on their assessment rated all of the indicators as “Very Good” having overall weighted mean values of 4.48, 4.40, and 3.73 respectively.

They ranked these indicators as follows: rank 1, “Operability. Degree to which the system has attributes that make it easy to operate and control.” with a composite weighted mean of 4.25 with a verbal interpretation of “Excellent”; rank 2, “User interface aesthetics. Degree to which a user interface enables pleasing and satisfying interaction for the user.” with a composite weighted mean of 4.22 with a verbal interpretation of “Excellent”; and rank 3, “Accessibility. Degree to which the system can be used by people with widest range of characteristics and capabilities to achieve a specified context of use.” with a composite weighted mean of 4.15 with a verbal interpretation of “Very Good”.

Table 7
Assessment of Usability

Indicators	Students		Professors		Practitioners		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	WM	VI	
2.1 Operability. Degree to which the system has attributes that make it easy to operate and control.	4.45	E	4.50	E	3.80	VG	4.25	E	1
2.2 Accessibility. Degree to which the system can be used by people with widest range of characteristics and capabilities to achieve a specified context of use.	4.55	E	4.30	E	3.60	VG	4.15	VG	3
2.3 User interface aesthetics. Degree to which a user interface enables pleasing and satisfying interaction for the user.	4.45	E	4.40	E	3.80	VG	4.22	E	2
Overall Weighted Mean	4.48	E	4.40	E	3.73	VG	4.21	E	

This implies that the TRIAPPS in terms of usability make it easy to operate and control while enabling pleasing and satisfying interaction for the user with wide range of characteristics and capabilities to achieve specified context of use.

C. Assessment of Reliability

On the assessment of reliability, Students and Professors rated all of their indicators as “Excellent”, but the Practitioners on their assessment rated all of the indicators as “Very Good” having overall weighted mean values of 4.42, 4.33, and 3.93 respectively.

Table 8
Assessment of Reliability

Indicators	Students		Professors		Practitioners		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	WM	VI	
3.1 Maturity. Degree to which the system meets needs for reliability under normal operation.	4.45	E	4.50	E	4.00	VG	4.32	E	1
3.2 Availability. Degree to which the system is operational and accessible when required for use.	4.40	E	4.20	E	4.10	VG	4.23	E	2
3.3 Fault Tolerance. Degree to which a system, product or component operates as intended despite the presence of hardware or software faults.	4.40	E	4.30	E	3.70	VG	4.13	VG	3
Overall Weighted Mean	4.42	E	4.33	E	3.93	VG	4.23	E	

They ranked these indicators as follows: rank 1, “Maturity. Degree to which the system meets needs for reliability under normal operation” with a composite weighted mean of 4.28 with a verbal interpretation of “Excellent”; rank 2, “Availability. Degree to which the system is operational and accessible when required for use” with a composite weighted mean of 4.23 with a verbal interpretation of “Excellent”; and rank 3, “Fault Tolerance. Degree to which a system, product or component operates as intended despite the presence of hardware or software faults” with a composite weighted mean of 4.13 with a verbal interpretation of “Very Good”.

This infers that the reliability of the TRIAPPS meets the needs for reliability under normal operation and that the system is operational and accessible when required to be used and is fault tolerant.

D. Assessment of Efficiency

On the assessment of Efficiency, Students and Professors rated all of their indicators as “Excellent”, but the Practitioners on their assessment rated all of the indicators as “Very Good” having overall weighted mean values of 4.48, 4.33, and 4.07 respectively.

Table 9
Assessment of Efficiency

Indicators	Students		Professors		Practitioners		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	WM	VI	
4.1 Time Behavior. Degree to which the response and processing time and throughput rates of system, when performing its functions, meet requirements.	4.20	E	4.40	E	4.10	VG	4.23	E	3
4.2 Resource utilization. Degree to which the amount and types of resources used by the system, when performing its functions, meet requirements.	4.60	E	4.30	E	4.00	VG	4.30	E	2
4.3 Capacity. Degree to which the maximum limits of the system parameter meets requirements.	4.65	E	4.30	E	4.10	VG	4.35	E	1
Overall Weighted Mean	4.48	E	4.33	E	4.07	VG	4.29	E	

They ranked these indicators all with verbal interpretation of “Excellent” as follows: rank 1, “Capacity. Degree to which the maximum limits of the system parameter meets requirements” with a composite weighted mean of 4.35; rank 2, “Resource utilization. Degree to which the amount and types of resources used by the system, when performing its functions, meet requirements” with a composite weighted mean of 4.30; and rank 3, “Time Behavior. Degree to which the response and processing time and throughput rates of system, when performing its functions, meet requirements” with a composite weighted mean of 4.22.

It is understood that the efficiency of the TRIAPPS utilizes resources to its capacity with excellent processing time when performing its functions.

E. Assessment of Maintainability

On the assessment of maintainability, Students and Professors rated all of their indicators as “Excellent”, but the Practitioners on their assessment rated all of the indicators as “Very Good” having overall weighted mean values of 4.48, 4.37, and 4.00 respectively.

Table 10
Assessment of Maintainability

Indicators	Students		Professors		Practitioners		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	WM	VI	
5.1 Modularity. Degree to which the system is composed of discrete components such that a change to one component has minimal impact on other components.	4.40	E	4.30	E	4.00	VG	4.23	E	3
5.2 Reusability. Degree to which an asset can be used in more than one system, or in building other assets.	4.50	E	4.30	E	4.00	VG	4.27	E	2
5.3 Modifiability. Degree to which the system can be effectively and efficiency modified without introducing defects or degrading existing system quality.	4.55	E	4.50	E	4.00	VG	4.35	E	1
Overall Weighted Mean	4.48	E	4.37	E	4.00	VG	4.28	E	

They ranked these indicators all with verbal interpretation of “Excellent” as follows: rank 1, “Modifiability. Degree to which the system can be effectively and efficiency modified without introducing defects or degrading existing system quality” with a composite weighted mean of 4.35; rank 2, “Reusability. Degree to which an asset can be used in more than one system, or in building other assets” with a composite weighted mean of 4.27; and rank 3, “Modularity. Degree to which the system is composed of discrete components such that a change to one component has minimal impact on other components” with a composite weighted mean of 4.23.

This shows that the maintainability of the TRIAPPS can be used in other systems because of its modularity and modifiability without degrading its existing system.

SOP 4. What claims can be derived from the developed invention or innovation project?

TRIAPP can work in different types of platforms with the only requirement of a web browser. A mobile website is instantly accessible to users via a browser across a range of devices. It is Internet-enabled, and users don't have to download them to access it. Users are not required to install or download them to use them. Also, they are very responsive just like a mobile app.

Statistical Computation

To find the significant difference among the evaluations made by the students, professors and practitioners who uses the “TRIAPP” as to Functionality, Usability, Reliability, Efficiency and Maintainability.

Looking at the summary table, it could be inferred that the respondents rated most indicators as excellent with a composite mean value of 4.32 for functionality on rank 1; 4.29 for efficiency on rank 2; 4.28 for maintainability on rank 3; 4.23 for reliability on rank 4; and 4.21 for usability on rank 5, with an overall composite weighted mean of 4.27 verbally interpreted as excellent.

Table 11
Summary of Assessments on the TRIAPPS

Indicators	Students		Professors		Practitioners		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	WM	VI	
Functionality	4.65	E	4.43	E	3.87	VG	4.32	E	1
Usability	4.48	E	4.40	E	3.73	VG	4.21	E	5
Reliability	4.42	E	4.33	E	3.93	VG	4.23	E	4
Efficiency	4.48	E	4.33	E	4.07	VG	4.29	E	2
Maintainability	4.48	E	4.37	E	4.00	VG	4.28	E	3
Overall Weighted Mean	4.50	E	4.37	E	3.92	VG	4.27	E	

The data shows that the TRIAPPS in terms of its functionality, usability, reliability, efficiency and maintainability is viewed as an excellent device by the group of Students and Professors, but is viewed as “Very Good” by the group of Practitioners.

Table 12
Summary on the Significant Difference on the Respondent’s Assessment

Source of Variation	SS	df	MS	F	CV	VI	Decision
Functionality							
Between Groups	0.98	2	0.491	43.10	5.14	S	Reject
Within Groups	0.07	6	0.011				
Usability							
Between Groups	1.01	2.00	0.51	57.03	5.14	S	Reject
Within Groups	0.05	6.00	0.01				
Reliability							
Between Groups	0.40	2.00	0.20	8.90	5.14	S	Reject
Within Groups	0.14	6.00	0.02				
Efficiency							
Between Groups	0.27	2.00	0.13	5.94	5.14	S	Reject
Within Groups	0.14	6.00	0.02				
Maintainability							
Between Groups	0.38	2.00	0.19	29.87	5.14	S	Reject
Within Groups	0.04	6.00	0.01				

Comparing the assessments of the three groups of respondents yielded F computed of 43.10 for Functionality, 57.03 for Usability, 8.90 for Reliability, 5.94 for Efficiency, and 29.87 for Maintainability.

All of the indicators exceeded its critical F value of 5.14 at five percent level of significance and is verbally interpreted as significant. These value lead in rejecting the null hypothesis that there is no significant difference on the assessment of the three groups of respondents on the TRIAPPS.

This means that the Students, Professors, and Practitioners have different views on the TRIAPPS as to all its indicators.

CLAIMS AND CONCLUSION

This chapter presents the claims and conclusions based on data analyzed in the summary of findings.

This paper has discussed the design implementation of a Tricycle Application. It is created to ease the lives of the passengers and people who need an emergency response.

CLAIMS

1. A TRIAPPS tricycle application comprising:

- a register interface to create an account for passenger and drivers;
- a log-in interface to sign-in the created account;
- a booking button for passengers who wants to ride a tricycle;
- an emergency button for emergency purposes and acts as a first responder;
- a chat interface to communicate with the passengers;

2. A TRIAPPS as in claim 1, wherein said a tricycle application that will act as an online booking for passengers who wants to go to a certain place in area where the drivers can go while the emergency button is that the driver acts as a first responder.

CONCLUSION

Based on the findings of the study, the following conclusions are drawn:

A. According to the evaluation result of the functionality of the system, the degree to which the sets functional completeness, correctness, and appropriateness were interpreted as "Excellent or Very Good" by the respondents, which means that the functionality of TRIAPPS provided the specific tasks and user objectives, correctness of results with the needed degree of precision, and facilitated the accomplishments of specified tasks and objectives.

B. According to the evaluation result of the usability of the system, the degree to which the sets operability and accessibility were interpreted as "Excellent or Very Good" by the respondents. This implies that the TRIAPPS in terms of usability make it easy to operate and control while enabling pleasing and satisfying interaction for the user with wide range of characteristics and capabilities to achieve specified context of use.

C. According to the evaluation result of the reliability of the system, the degree to which the sets maturity and availability were interpreted as "Excellent or Highly Accepted" by then correspondents. This infers that the reliability of the TRIAPPS meets the needs for reliability under normal operation and that the system is operational and accessible when required to be used and is fault tolerant.

D. According to the evaluation result of the efficiency of the system, the degree to which the sets time behavior, resource utilization and capacity were interpreted as “Excellent or Highly Accepted” by the respondents. It is understood that the efficiency of the TRIAPPS utilizes resources to its capacity with excellent processing time when performing its functions.

E. According to the evaluation result of the maintainability of the system, the degree to which the sets modularity, reusability and modifiability were interpreted as “Excellent or Highly Accepted” by the respondents. This shows that the maintainability of the TRIAPPS can be used in other systems because of its modularity and modifiability without degrading its existing system.

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Behavioral Research

EFFECTS OF INTERNSHIP ON THE JOB PERFORMANCE OF GRADUATES OF BACHELOR OF SCIENCE IN OFFICE ADMINISTRATION MAJOR IN OFFICE MANAGEMENT: BASIS FOR PROGRAM ENHANCEMENT

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INTRODUCTION

On-the-job-training (OJT) is the job instruction occurring in work setting which enables student-trainees to acquire skills and techniques or learn new process and methods under the direction and instruction of a training instructor or supervisor. In the school and as an integral part of the curriculum of the course Office Administration curriculum, the students are exposed in operation certain kinds of machines and equipment, skills training, work values and attitude formation that could somehow affect their OJT performance and which could also reinforce the type of the knowledge and skills they need as they look for work right after they graduated from college. Apparently, most courses would require the students to undergo OJT before their graduation and thus, leaving the school for good. This particular study was undertaken to assess the effects of internship on job performance of the graduates of BSOA-OM bathc 2011-2012: The researchers intended to utilize the findings of this research for the improvement of Eulogio "Amang" Rodriguez (EARIST) on-the-job Training (OJT) program. An improved OJT program will definitely benefit students of the course Office Administration, who, both during and after their OJT are expected to perform better and be competitive enough in the work market.

MATERIALS AND METHODS

The study determined the effects of internship of BSOA-OM to their present job. The researchers used the descriptive method of research. This research utilized three important instruments. The major instrument will be the survey questionnaire, which was developed by the researcher, the second were the records of the students from the Registrar's office. The third and final instrument was an unstructured interview conducted by the researchers either via e-mail, face to face or telephone/cell phone. The following data gathered from the respondent were recorded, classified, tabulated, and interpret by the researchers with the use of Percentage, Mean and Ranking.

RESULTS AND DISCUSSIONS

Personal Profile of the Respondents

Table 1
Profile of the Respondents as to Sex

Profile	Frequency	Percentage
Male	5	22.72
Female	17	77.28
Total	22	100.0

As shown in Table 1. Most of the respondents, are female with a total of 17 out of 22 (77.28%) and only 5 out of 22 (22.72%) males. This shows the majority of the respondents were participated by female.

Table 2

***Profile of the Respondent Students
Distribution of the respondent as to Civil Status***

Profile	Frequency	Percentage
Single	21	95.46
Married	1	4.54
Separated	0	0.00
Total	22	100.00

Table 2 shows that 21 of the respondent graduates or (95.46%) are single, while the least 1 (4.54%) is married.

Table 3

The Place Where Graduates Underwent Their On-the-Job Training

Profile	Frequency	Percentage
Inside Campus	12	54.55%
Faculty	5	22.73%
Registrar's Office	2	9.09%
Director's Office	1	4.54%
Dean's Office	0	(0)
The Champion	1	4.54%
IGP	1	4.54%
Library	2	9.09%
OSA	1	4.54%
Outside OJT	10	45.45%
Total	22	100%

Table 3, of the 22 respondents, 12 (54.55%) were assigned to the faculty office while the other 10 (45.45%) had their OJT outside the campus. The basis of this OJT assignment was their capabilities. Those who were assigned outside the campus were given a specific time to find a place where they could underwent their training and once they failed to find one they had no other choice but to have their OJT in-campus.

Mendoza (2006) asserted that the student's level of achievement is significantly related to the OJT: what the student's learn from the classroom is what the student's apply during OJT. The school provides related instructions and needed skills. The roles of industries is to sharpen the student's competence and abilities, thus, cooperating industries should provide the student's competence and abilities, thus, cooperating industries should provide the student's trainees the necessary resources needed to improve their performance level of work proficiency, specific skills and work attitudes in the field of specialization.

The Institute is expected to provide the learning which the students can then apply during their OJT. The industries continue to enhance the skills and abilities of the student-trainees.

It shows that proper training of students is needed to make them competitive and became more efficient and effective in doing their assigned jobs and thus be considered as assets to the company they are connected with. And this will be possible through training sites, which can greatly affect the performance of the trainee.

Table 4
Provision of Machines and Equipment

Machines and Equipments	Mean	Verbal Interpretation	Ranking
Computer	4.50	Very Great Extent	1
Electronic/Manual Type Writer	3.09	Moderate Extent	5
Fax Machine	2.73	Moderate Extent	6
Photocopy Machine	3.32	Moderate Extent	2
Telephone	3.14	Moderate Extent	4
Scanner	3.23	Moderate Extent	3
Weighted Mean	3.34	Moderate Extent	

As shown in Table 4, the respondents claimed that the use of machines and equipment in the OJT site was only moderate. The computer rank as no. 1 with a weighted mean of 4.5 followed by photocopying machine with a weighted mean of 3.32 and then scanner with a weighted mean of 3.23. The least that were available included the telephone, electronic/manual typewriter and the fax machine. It was considered the provision of machines and equipment as "Moderate Extent" in the training sites. This also indicate that the computer (4.5) was provided to the "Very Great Extent".

De Lara (2000) stated that one school factor that relates to the OJT performance is the adequacy of facilities for instructional purposes. Development of skills can be best attained through actual manipulation of tools and equipment.

This will improve the psychomotor skills of the students in their field of specializaiton.

Table 5
Application of Training Skills in the Performance of Job

Technical Skills	Weighted Mean	Verbal Interpretation	Ranking
Office Equipment	4.68	VGE	1
Telephone Operation	4.00	GE	7
Computer Operation	4.50	VGE	2.5
Filing/Clerical	4.45	GE	4.5
Communication Skills			
Written Communication	4.41	GE	6
Oral communication	4.50	GE	4.5
Interpersonal Communication	4.45	GE	4.5
Average	4.43	GE	

Table 5, the data revealed the following skills training were rated as "Great Extent". It also showed that all of those skills such as technical skills and communication skills became necessary, when the respondents got employed. This also indicates that under technical skills,

the office equipment (4.68) was rated as "Very Great Extent" which showed that it is very much useful/needed in performing in their job.

According to Fredericksen (1999), the cause why so many new hires failing turn out to be lack of: Coach ability in which the person's ability to accept and implement feedback from bosses colleagues, customers. Second, Emotional intelligence wherein the individual has the ability to understand and manage one's emotions, and accurately assess others' emotion. Third is Motivation which deals with sufficient drives to achieve one's full potential and excel n the job. Fourth is temperament that emphasizes on the attitude and personality suited to the particular job and work environment. Lastly, is Technical competence which means functional or technical skills required to a job?

Table 6
Contribution of Work Values and Attitudes in the Performance of Job

Work Values	Weighted Mean	Verbal Interpretation	Ranking
Patience	4.63	VGE	1
Promptness	4.32	GE	4.5
Dependability	4.32	GE	4.5
Initiative	4.41	VGE	3
Cooperativeness	4.5	VGE	2
Punctuality	4.14	GE	6
Average	4.39	GE	

Table 6, it showed that those work values and attitudes such as patient, promptness, dependability, initiative, cooperativeness and punctuality had been applied to a great extent. It also revealed that work values and attitudes were important and had affected their job performance. This also indicate that Patience which was rated as "Very Great Extent" is very much useful/needed.

According to Baron and Greenberg (1996), Personality is the unique but stable set of characteristics and behavior that sets each individual apart from all others. Since that human being is different from each other especially in terms of the personality, employee must know the personality of his/her co-workers and boss for his/her to easily adjust with their personality in dealing with them.

Good personality of a person is an asset while bad is a liability not only in the bearer of the personality but as well as the people around.

Further Mairembam (2003) stated that knowledge is indeed powerful and intelligence rules the world of knowledge. Both of them are out of one's experience and efforts, being put across in life. But change is something which is bound to happen in any field and part of life or situations. There, in such situations, attitude is something that is going to make a big difference among the crowd of intellectuals.

Attitude changes one's past sets the future for success and satisfaction. A little knowledge is dangerous; but, rather "too much knowledge is also disastrous."

As showed in table 7, the following factors: techniques, knowledge, training site and the evaluation of the coordinator had affected the performance of the On-the-job-trainees. The findings and justification were supported by the overall of 4.07 with the verbal interpretation of very satisfactorily.

Table 7
Factors Affecting Performance of OJT Trainees

Facilities	Weighted Mean	Verbal Interpretation	Ranking
Techniques	4.18	VS	1
Knowledge	4.09	VS	2
Training Site	4.41	VS	3
Evaluation	3.72	VS	4
Average	4.07	VS	

Aberin (2003) stated that facility competence, no matter how adequate the facilities are, if the teacher lacks the necessary competence in imparting the necessary knowledge and skills, it would be difficult to achieve the ultimate purpose of education. A teacher plays a vital role in schools as the facilitator of learning.

Lardizabal (2000) emphasized that an educational institution plays important role in the preparation and honing of individual students towards attaining comfortable status in their lives after graduation from their courses.

CONCLUSIONS

On the basis of the findings, respondents considered the availability of machines and equipment on their training sites as still limited particularly: fax machine, photocopying machine, telephone and scanner. Those machines and equipment are only available when they are assigned outside campus, having more time and opportunity to operate them.

As regards to the impact of the skills training, the respondents explained that they have applied their skills to a great extent as they underwent OJT outside the campus. However, those who were assigned inside the campus, experienced difficulty in finding job or performing tasks which were assigned to them on their actual job.

Therefore, skills training during OJT corresponds or complement the skills needed in their actual job most especially those who were assigned outside campus so, it only shows that OJT has significant effects on the work performance of the graduates.

The other factors affecting performance such as equipment and facilities, techniques and method of instruction, knowledge of the trainer, training sites and evaluation of the OJT coordinator, were assessed by the respondents as "very satisfactorily". Most of them are those respondents assigned outside, and again most of them claimed that they had difficulty in looking for their OJT company/industry.

RECOMMENDATIONS

Base on the conclusion that was made, the researcher's recommend that machines and equipment should be made available in the training sites in order for the trainees to become familiar in using them and to enhance their skills, which they can positively apply once they are employed. Training objectives and procedures must by founded upon the felt needs of the trainees and must build upon the learning experiences of the trainees. The school must find ways to improve training program, so that the student will have greater chance of meeting the demands of the industries. The school itself must establish strict training programs

accompanied by strict monitoring of their students undergoing their OJT. The school should make all the efforts to tie up with different companies that can suit their students' interest and capabilities as they undertake their OJT. The school administration should fully expose their students to the real world of actual jobs where they could learn a lot more than they would on lectures. On-the-job-training inside the campus must empower students by their tasks which are related and based on their proficiency and skills. Aside from skills and knowledge, it is also important to develop the values/work attitude of a student by giving some activities that will help improve their patience, promptness, dependability, initiative, cooperativeness, and punctuality. These values can help them adapt fully to their eventual job in the future.

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ASSESSMENT OF MARKETING STRATEGIES OF SELECTED CATERING SERVICES IN CARSIGMA: BASIS FOR MARKETING PLAN

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INTRODUCTION

A catering services industry is comprised of businesses that provide food, beverages, and other services to a variety of clients, usually for special events. Catering business is one of the most lucrative and profitable home businesses with a high potential for expansion and growth. A catering business job varies from small intimate affairs to large events that involve providing not only food and beverage service but also tableware, linens, service personnel, decoration, such as table settings and lighting and other aspects of the event.

However, the catering business only emerges from the commonly practiced hospitality, which was always free. Catering is also a demanding work, requiring stamina, ability to work under pressure, and excellent interpersonal skills.

Marketing strategy is a business overall game plan for reaching people and turning them into customers of the product or services that the business where we design a strategy, it is a plan of action designed to promote and sell products or services that your company has.

In having a business we should have a plan for everything, having a plan means having something to follow and it would all result to the success of overall operation. Building a plan is like painting a picture that we always want for our business to be organized and feel free to reach everything for our business growth.

This study hopes to enlighten and will provide additional knowledge for fresh graduates and even present owners of catering businesses on great opportunities of having their own business. This study will not only show complex ideas and methods on improving one catering business.

The researcher's survey questionnaires were prepared to come up with a Catering Marketing Plan.

STATEMENT OF THE PROBLEM

1. What is the Demographic profile of the respondents in catering services in CarSiGma in terms of: Catering Services, Customer Services, Number of Personnel, Operating Capital, Types of Catering Services Offered, Location of Business, and Permits and Licenses?
2. How do the customers assess the marketing strategies of selected catering services in CarSiGma in terms of: advertising, discounts, freebies and packages?
3. What Marketing plan may be proposed?

CONCEPTUAL FRAMEWORK

The conceptual framework of the study uses the input-process-output whereas the input of the study that the researchers aim to determine the profile of the respondents in catering services, customer services, number of personnel, operating capital, types of catering services offered, location of business, permits and licenses. Assessment on marketing strategies of catering services by the advertising, discounts, freebies, packages, menu composition and layout.

out and designs. The process of the study is the data gathering through survey questionnaire and interview. The output of the study is to proposed marketing plan on catering services.

METHODOLOGY

Descriptive method is used in the study and a total of five catering services owners and twenty (20) clients for each catering services for a total of 100 clients will be involved as respondents to this study. Those catering services are :PMJ Catering and party Mo Catering from Carmona, Cavite ; GFFs Catering Services from Silang, Cavite; Party Upgrade Catering Services and Sweet Party Needs Catering Services from GMA, Cavite which will be chosen problem that they might by the researchers thru purposive sampling technique.

To gather the needed data for the study, the researchers conducted an interview and used survey questionnaire. There were two sets of questionnaire used; one for the owners of catering and second is for customers pertaining to the assessment of marketing strategies.

SCOPE AND LIMITATION OF THE STUDY

This study will deal on the scope and concept of catering services, and it is limited only on discussion pertaining to the marketing strategies of selected catering services in Carmona, Silang and General Mariano Alvarez Cavite. It is also includes factual information gathered from data collections among selected respondents catering services owners and customers.

RESULTS AND DISCUSSION

The Demographic profile of the respondents in catering services in terms of: catering services as to frequency, percentage and ranking of the demographic profiles of the respondents is explained that catering services shows that Party Mo party Needs, PMJ Party needs catering services, Party Upgrade, GFF'S and Sweet Catering Party Needs every catering services, have only one respondents or 20 percent.

Customer services as to frequency, percentage and ranking of the demographic profile of the respondents; in customer service, four of the catering services admitted buffet and full service is 28.5 percent. Three of the participants admitted delivery with 21.4 percent, Two of the participants admitted fine dining with 14.2 percent and lastly 1 catering services admitted Party needs with 7.1 percent.

Number of personnel, four of the catering services have 1-10 people working with them with 80 percent and one catering services has 11-20 personnel with 20 percent. The result shows that majority of the respondents has 1-10 personnel working with them.

Operating Capital, as to the frequency, percentage and ranking of the demographic profiles of the respondents: Three of the catering services have 51,000-100,000 operating capital with 60 percent, one catering service.

Types of catering services offered, As to the frequency, percentage and ranking of the demographic profiles of the respondent: 4 of the participants admitted that their catering services offered birthday party, wedding, christening, and anniversaries with 16.6 percent rank 2.5, and 3 of the catering services admitted also that they offered business party and reunion with 13 percent rank 5.5 and lastly, there are 2 catering services admitted others with 8 percent rank 7.

Location of business, As to the frequency, percentage and ranking of the demographic profiles of the respondent: the location of their business is explained in the table 7, Carmona

and GMA Cavite have the same number of respondents which is 2 with 40 percent rank 1.5 and participants in Silang, Cavite with 20 percent.

How do the customers assess the marketing strategies of selected Catering Services in terms of: Advertising; As to the assessment on marketing strategies, it illustrates that the customers in a selected catering services in terms of advertising have a composite mean of 3.92 with a verbal interpretation of satisfied.

Discount; as to assessment on marketing strategies, it illustrates that the customers in a selected catering services in terms of discounts have a composite mean of 3.93 with a verbal interpretation of satisfied.

Freebies; as to the assessment on marketing strategies, it illustrates that the customers in a selected catering services in terms of freebies have a composite mean of 4.36 with a verbal interpretation of satisfied.

Packages have a composite mean of 4.36, Menu composition (cm=3.50) and lay-out design (cm=4.51) are all satisfied verbal interpretation.

CONCLUSION AND RECOMMENDATIONS

On the light of the findings of the study, researchers concluded the following are the conclusion:

1. Researchers concluded that one of the factors needed on marketing strategies of catering services is the advertising. Advertising is a prime tool to market your services. Using the tarpaulin, signboards and other materials to inform prospective customers can help them so easily inform those customers. Aside from using materials, conducting community outreach program for social awareness can also help catering services to show case their business.

2. The researchers concluded that giving discount of a catering business owners is a big impact to the clients for choosing the service you have. Price charge base on volume account is good for being in justice on what service you give to the clients. Providing seasonal discounts also great for being timely in current seasons. And giving loyalty reward on outstanding clientele is very important because this is the time that owners recognize the loyalty of the clients, also it makes them feel special to your company.

3. It is important to have freebies in a catering service offering because it's something makes them surprise that there's a thing that they would receive that are not included to price they pay.

4. Set of packages we present to the client is important for them to be encouraged to choose the service that the owners offer. Having single –unit packages is good for those clients who have a tight budget but still owners should provide some offers that upgrades the packages as to the added inclusion if there's need. Also important that the package was given as promised, because it's essential to satisfy them by giving them the entire package that they order.

5. Menu management is an ongoing tasks, menu should be received and change regularly, it must be check and update regularly when pricing it's necessary to determine the cost per unit in every quantity of the ingredients also to indicate the price of the meal correctly. Also, in menu specification described as information or description available in the menu in order for the guest to get clarity on their selection.

6. The designs of the facilities that support the catering operation are vital. The lay-out and design of the venue or the facilities that backups the catering operations are very important. An eye appealing and well design catering venue will incorporate a work/service area that facilitate maximum efficiency thus keeping wages, power, energy and wastage to a minimum.

Based on findings of the study, the following are possible to recommend:

1. Researchers recommend before engaging in Catering services business, owners or future investors should first learn the nature of the business and future problem that they might encounter so that when problems arise they can be able to cope up.

2. Researchers also recommend that due to the complexity of catering services owners must ensure not only the quality of food but also the quality of each other services like food preparation, physical preparation and waiter's services to achieve maximum customer's satisfaction.

3. Researchers also recommend that different catering services should learn to be innovative and flexible to adhere to customers demand and latest trends in catering services business.

4. Also recommends that since catering services is an evolving business, owners and future owners need to attend seminars and other short courses studies so that they will be equipped with knowledge on how to manage their business.

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LEVEL OF SATISFACTION IN THE USAGE OF EARIST COLLEGE LIBRARY AS PERCEIVED BY TERTIARY STUDENTS

Benigno A. Castillo

IIINTRODUCTION

Quality in teaching and learning is where EARIST passionately devoted for as a service-driven institution. EARIST is not excused from the truth that service oriented institutions are under pressure of demonstrating that their services are customer-focused and that its performance improve continuously. According to Famacion-Quinco (2011), students in our time are aware of what they can expect and require from a university that provides quality education. He added, "One just cannot claim to be delivering quality education and students are bound to believe it"

An expectation that cannot be achieved on the institution is the important factor for students' withdrawal. (Alridge & Rowley, 2001). Unmet expectation is equivalent to unmet satisfaction. Therefore, perceived service quality is low (Kotler & Keller, 2006). This would lead to the indication that services with favorable satisfaction may make the difference (Parasuman, et al 1996). The researcher decided to allot his time and attention on this topic to know the level of students' satisfaction towards the service quality of college library this may indicate as that need improvement. This is in line with the researcher desire to support his Alma Mater to continuously provide quality education for their fellow students and promote the importance of supplemental materials for the professions they pursue whether it is a board or non-board course.

STATEMENT OF THE PROBLEM

This study at identifying the determinants of satisfaction on the service quality of EARIST Library as perceived by the college students.

Specifically, it sought to answer the following:

1. What is the profile of the respondents as to their:
 - a. Gender;
 - b. Year Level;
 - c. College Department; and
 - d. Frequency of visit/use the library?
2. What is the level of satisfaction in the usage of college library?

Significance of the Study

This study is manifestly valuable in many ways to EARIST College Library administrators, faculty and students. The result of the study would be important to the following:

EARIST College Library Administration. It will provide the administration significant data which would be very useful particularly in the planning and implementation of strategies to enhance the quality of the service they offer, this is to provide library resources, facility and services to the EARIST academic community as a means to achieve the institution's goals and objectives.

Library Staffs. The staff members will be more aware of the level of satisfaction of their customers, and will serve as a guide in dealing with students.

Faculty members. The faculty members will also be the recipients of the potential improvement of the library to supplement their resources for teaching, probably keep the flames for their passion and loyalty in the profession, institution, and to the students.

Students. The students will be the ultimate recipients of the possible improvements that would lead to a more comfortable learning, this is to supplement what they learned in classrooms as stimulated by this study.

Future Researchers. This study would be useful as they conduct their own research on this topic. Assessment and findings of this study will be a good reference and guide for future management advocates.

Literature and Studies

The study of Famacion-Quinco (2011) determined the level of students' satisfaction towards the service quality of EARIST in terms of reliability, assurance, tangibility, empathy responsiveness.

In today's world of global competition, providing quality service is a key for success, and many experts concur that the most powerful competitive trend currently shaping marketing and business strategy is service quality (Nejati, et al 2008) so it becomes very important to many companies because it is an assessment on how well the service was delivered to the clients to improve their services, to quickly identify problems and to better assess client satisfaction.

The nature and scope of library service is a key to the character and quality of a curricula and instruction followed in a particular school. If library is to be the center of intellectual life of the school, the source of dissemination of information and a center of supervised study must have a very well-planned and systematically organized library service (Devarajan, 1994)

METHODOLOGY

In this study, the research design, sampling technique, setting respondents, research instrument, data gathering, and the statistical treatment of data used in the study. This study entitled "Perceived Service Quality: Determinant on Satisfaction in the usage of EARIST College Library" is a descriptive research that used the survey method.

RESULTS AND DISCUSSION

Table 1 represents the frequency and percentage of the profile of the respondents in terms of gender, year level, college department and the number times the students visit library.

Table 1
Frequency Data on the Profile of the Respondents

Gender	Frequency	Percentage
Male	150	43.40
Female	196	56.60
Total	346	100.00

College Department		
CBA	142	41.00
CAS	60	17.30
CEN	125	36.10
CED	19	5.50
Total	346	100.00

Year Level		
1	76	22.00
2	86	24.90
3	83	24.00
4	65	18.80
5	33	9.50
6	3	0.90
Total	346	100.00

Visit per Week		
1	12	3.50
2	42	12.10
3	77	22.30
4	75	21.70
5	91	26.30
6	49	14.20
Total	346	100.00

Table 2 shows the overall level of satisfaction by the use of service quality dimensions by the respondent in the usage of college library. It also displays each level of satisfaction with regard to the five dimension of service quality.

Table 2
Overall Level of Satisfaction By the use of Service Quality Dimensions
By the Respondent in the Usage of College Library

Dimension	Mean
Tangibility	3.30
Reliability	3.42
Responsiveness	3.69
Assurance	3.64
Empathy	3.61
Total	3.53

The overall level of satisfaction in the usage of EARIST College Library is 3.53 which means that the students are satisfied with the said service. Among the 5 dimensions, it shows that the responsiveness of the library gives the highest level of satisfaction with a mean of 3.69, followed by the assurance at 3.64 and empathy at 3.61, and reliability at 3.42 and lastly tangibility at 3.30. It is very clear that students of EARIST are really satisfied with the service with the service of the library.

Table 2.1
Tangibility Mean Score

Tangibility	Mean	Descriptive Bank
Facilities are visually appealing.	3.56	Satisfied
Library space enables quiet and calm study.	2.95	Neutral
The library is well ventilated and lighted.	3.78	Satisfied
Equipment are in good condition.	3.37	Neutral
Physical condition of materials.	3.43	Satisfied
Signs associated with the service are visually appealing.	3.46	Satisfied
Have facilities for individual study.	3.26	Neutral
Have spaces for group and team study need.	3.50	Satisfied
Number of Computers available for study.	2.40	Unsatisfied
Total	3.30	Neutral

Table 2.1 presents the distribution of respondents' response when Tangibility is considered. Data show that among the 9 indicators, the well ventilated and lighted rated the highest with a mean of 3.78, followed by the facility is visually appealing and the appearance of personnel both with 3.56, having space of group and team study with 3.50, signs associated with the service is visually appealing with 3.46, physical condition of materials with 3.43, and down to the lowest which is number of computers available for study at 2.40. Data show that students are satisfied with the ventilation and lighting condition of the library and this adds to its satisfaction.

Table 2.2
Reliability Mean Score

Reliability	Mean	Descriptive Bank
The books needed for study are available.	3.55	Satisfied
There is a wide selection of books and other references	3.62	Satisfied
Reading materials are up to date and relevant.	3.32	Neutral
Books have several copies.	3.17	Neutral
There is access on books thru service computer inside.	3.18	Neutral
Library staffs provide services accurately.	3.47	Satisfied
Dependability in handling user's service problems.	3.35	Neutral
Keeps its records accurately.	3.66	Satisfied
Total	3.42	Satisfied

Table 2.2 presents the distribution of respondent's response when Reliability is considered. Data show that among the 8 indicators, keep its record accurately is rated the highest with a mean of 3.66, followed by wide selection of books at 3.63, books needed are available at 3.55, library staff provides services accurately at 3.47, and the least rated is the access on eBooks with the service computer at 3.18 and availability book copies at 3.17. Students of EARIST are very particular about attending to their library needs.

Table 2.3
Responsiveness Mean Score

Responsiveness	Mean	Descriptive Bank
Library Staffs serve promptly to the users.	3.75	Satisfied
Staffs show willingness to help.	3.67	Satisfied
The staffs keep users informed about when services will be performed.	3.59	Satisfied
Readiness to respond to users.	3.73	Satisfied
Average Weighted Mean	3.69	Satisfied

Table 2.3 presents the distribution of respondents' response when Responsiveness is considered. Data show that among the 4 indicators, students rated most of the staff to respond to question at 3.73, shows willingness to help at 3.67, and the least, keeps the users respond in form about services with 3.59. The data show that library staffs are very responsive to the needs of EARIST students as indicated in the average mean of 3.69.

Table 2.4
Assurance Mean Score

Assurance	Mean	Descriptive Bank
Library staff that are always courteous and friendly.	3.64	Satisfied
Library staff that are knowledgeable to answer users' query.	3.75	Satisfied
Accuracy and confidentiality of personal information are guaranteed.	3.65	Satisfied
Staffs instill confidences in library users.	3.68	Satisfied
Library staffs provide training in the use Of information sources.	3.49	Satisfied
Average Weighted Mean	3.64	Satisfied

Table 2.4 presents the distribution of respondents' response when Assurance is considered. Data show that among the 5 indicators, library staff who is knowledgeable to answer users' query rated the highest with a mean of 3.75, followed by information at 3.65, library staff who is always courteous and friendly at 3.64, and lastly they provide training in the use of information source with 3.49. Data shows that the library management assures that every need of the students is carefully attended.

Table 2.5
Empathy

Empathy	Mean	Descriptive Bank
Suitable opening and closing hours for student's needs.	3.69	Satisfied
The staffs give individual attention to the users.	3.49	Satisfied
Staffs understand the needs of their users.	3.47	Satisfied
Library provides ample time when the students borrowed the book.	3.59	Satisfied
The penalty imposed for unreturned books is just right.	3.64	Satisfied
The library is also open on Saturday for research.	3.81	
The library is also open even during summer break.	3.57	Satisfied
Library policies are administered to all students fairly.	3.64	Satisfied
Average Weighted Mean	3.61	Satisfied

Table 2.5 present the distribution of respondents' when Empathy is considered. Data show that among the 8 indicators, the student rated highest the Saturday schedule of library for research with a mean of 3.81, followed by the suitable opening and closing time for students with 3.69, the penalty imposed for unreturned book and fair treatment of library policy both 3.64, and the least considered is library staff understands the needs of the user with 3.47. The library management is very much aware that there are students who really need their services even Saturday.

CONCLUSION

Based on the findings of this research study, the following conclusions are arrived at by the researcher pertinent to the Perceived Service Quality of EARIST College Library. The student respondents are very particular to the facility that the institution library offers specifically the ventilation, lighting condition, huge space for group studies, service computer, and internet especially online learning. Aside from the facility, student respondents are very particular as well with the appearance of the library and the library staff. In terms of the library staff, they consider most the ability of the staff to provide good service through the prompt service on attending to their needs, accuracy transaction, and, of course, the knowledgeable and commitment in doing their responsibilities. The students re satisfied with the service quality of the college library as indicated in the results in the tabulation.

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THE SWOT ANALYSIS OF EARIST CAVITE ON HEI'S FOUR-FOLD MANDATE

Dr. Shirley P. De Leon

INTRODUCTION

The Higher Education System in the Philippines is undergoing an astonishing change, as it mirrors a world race towards a new millennium of globalization. The necessity of education has joined the profound concerns about the implications of technology, a practical knowledge-intensive applied curriculum and relevant instruction, community linkages and research - based output and the management of resources through production in order to sustain the operation of the institution. All these, point out to the vision in expanding global skills so that the mitigation on the country's economy will convey a remarkable contribution. The importance of maintaining a highly competitive trained workforce brings an increased number of adult learners into and back through the state colleges and universities. It is hoped to acquire and update skills necessary to advance in their career fields. The institutional desire and public pressure to serve are visible as the system scrimmage. Short-term capacity strategies are hard to address such as large class size, old and lack of instructional facilities and instructional equipment, an increasing dependence on extra faculty and other standard and widespread practices. Although not all indicators are on a downward trend, these examples emerged from this study. They require immediate attention and are indicative of the present dangers faced by the public higher education system in particular and the EARIST Cavite Campus institution overall.

The pronouncement of the government on the zero tuition fee as advocated by President Rodrigo R. Duterte worsen the scenario of the state/ city colleges. Although to some it is considered best, funding still dictates the success or failure on the performance of every public higher education institution. To keep abreast with globalization, the Commission on Higher Education (CHED) mandated on the quadruple target for every Higher Institution as a major final output and performance indicator.

The researcher conducted the study which aims to present the status of EARIST Cavite in terms of different areas of development as basis for preparing Strategic Development Plan for the next five years geared towards improving the competitiveness for accreditation purposes and to be able to meet the 21st century challenges in education.

METHODOLOGY

The researcher used the descriptive method of research in gathering data. It involves gathering, analysis, classifying and tabulating data about present status of the ten (10) developmental areas of EARIST Cavite Campus.

The study involved three groups of respondents - the administrative core team, faculty, and graduating students through purposive sampling. It employs 100% of both administrative core team and faculty while only 50% were taken from the graduating students. The Instruments used in this study are:

1. Survey Questionnaire on the Assessment of the Present Status of EARIST Cavite Campus. This was used to assess the present status of ECC covering the four (4) areas of concern.
2. Focus Group discussion (FGD) Guide questions on SWOT Analysis. The guide questions are utilized in identifying the strengths, weaknesses, opportunities and threats of

EARIST Cavite Campus in the four mandates in all SUCs. It is composed of instruction, research, extension and production.

RESULTS AND DISCUSSIONS

1. Present status of EARIST Cavite Campus as assessed by the respondents on the 4 areas of development:

Table 1
Assessment of the Respondents on the Present Status of EARIST Cavite Campus

Criteria	Core Team		Faculty & Staff		Students		Composite Mean		Rank
	WM	VI	WM	VI	WM	VI	WM	VI	
1. Curriculum and Instruction	3.95	E	3.9	E	3.5	E	3.78	E	1
2. Research Services	3.63	E	3.41	E	3.18	SE	3.41	E	3
3. Extension and Linkages	3.4	E	3.29	SE	3.2	SE	3.30	SE	4
4. Managment of Resources	3.85	E	3.61	E	3.33	SE	3.60	E	2
Average Weighted Mean	3.52	E	3.49	E	3.27	SE	3.43	E	

Table 1 shows the assessment among the Core Team, faculty & Staff and students on the present status of EARIST Cavite Campus on different key areas.

The areas which are considered “Evident” and strength of ECC are: Curriculum (X=3.78) as rank 1; 2nd; Management of resources (X=3.60) rank third; Research Services, and rank 4th is the extension and community linkages. These are the strengths of the institution that need to be enhanced and sustained.

The curriculum which rank first offers varied courses including graduate program, thereby captures the need of the community students and professionals. Instead of going to far colleges and universities, students consider the curricular offerings of ECC as their study preference. The 2nd strength of ECC which is the management of resources. The Institute has an effective administrative policies and practices, faculty and competitive students because administrators and faculty are all supportive and academically qualified. Students are able to harness their potentials, performance and skills despite inadequacies in other areas. This proves true over and done with the increasing number of government examination passers and graduates job placements.

In the study conducted by J.S. Campiseño (2010) strongly supports the findings of the study. He discloses that the SUC as directed by CHED should consider the criteria set by PASUC in the AACCUP instrument. Since the Accrediting Agency of Chartered Colleges and Universities (AACCUP) outlines the criteria for the ten areas to be accredited, the researcher recommends the following: Strengthening of VMGO awareness, understanding and acceptance among its stakeholders; encourage the non-tenured faculty to upgrade their educational qualifications in order for them to meet the entry qualification for a permanent status; the curriculum and instruction content and design must be anchored to the VMGO and reflect its relevance to the needs of the industry as manifested in the employability of the graduates; Reinforce the Office of student affairs (OSA) by designating qualified and trustworthy personnel; develop the attributes of values desired to be acquired by the graduates of the different programs to enable them to compete for employment, locally and abroad. Research should be functional for both teachers and students by assigning a common research day to increase outputs for presentation and publication in refereed journals both national and

international; Inventions and patent application be encouraged; The extension and Community Involvement should serve different beneficiaries and seek funding; the collaboration with other SUCs online library through the internet and motivate the faculty and students to utilize the references in the E-Library for research; Everybody should apply cost saving measures for the acquisition of additional facilities; Seek donations from organizations like alumni, PTA and Non – government agencies; consortium with other agencies to avail equipment needed for instruction, research and production should be encouraged; and the administration must build more strength towards one vision and common goals to serve as engine of the institution in the attainment of its VGMO.

2. Strengths, Weaknesses, Opportunities and Threats of EARIST Cavite Campus as identified by the administrative core team, faculty and staff and graduating students respondents as to:

2.1 Instruction

The result of the Focus Group Discussion conducted on the Instructions revealed that among the strengths of EARIST Cavite Campus are the academically qualified, resourceful and flexible faculty; wide-ranging curricular offering and graduate studies and increasing number of passers on government examination. In terms of weaknesses, Insufficient permanent faculty; inappropriate class size; Shortage of Physical facilities laboratory equipment; and No internet access and limited library resources. The opportunities as elicited from the group discussions are: availability of professional organizations; scholarship grants for continuing education from CHED. While the threats as educed from the focus group discussion are: Competition with other schools and Demands of globalization.

2.2 Research Services

The result of the Focus Group Discussion conducted on the Research revealed its strengths as: Strengthening research capability program for the faculty; Qualified faculty handling research subjects; Conducted paper presentation on national/International Fora and Strengthening students involvement on thesis writing and product development. Whereas, the weaknesses are composed of the following: No time provision for faculty research due to overloading; Few completed research projects; No research incentives or financial assistance for presentation; No research output published in recognized refereed journal; No product submitted for patenting and Lack of funds. The opportunities when strived to maximize could be transformed into strengths of the organization. The following are the result of focus group discussions: Research collaboration with other SUCs, and partner agencies. The threats should be addressed with a defensive strategy. The focus group discussion accounted the following as threats: No Intellectual property registration on patenting, trademark and copyright due to its tedious process.

2.3 Extension and Community Linkages

The result of the Focus Group Discussion conducted on the Extension shows its strengths as: able to establish community linkages; Intensify scholarship and sponsorship through alumni partnership; Strategic location of school within the community; Active participation of students in the community projects; OJT program, tie-up with industries; Supportive Alumni. The weaknesses comprised the following: Limited established network on community, industry and other institution; Lack of funds; difficulty on establishing regular donor/sponsor for community projects; few number of trainees/ adapter who utilized technologies for profitable enterprise or viable projects. As for the opportunities, the following are the result of focus group discussions: presence of nearby colleges and universities; Tapped

Alumni expertise and resources; Establish linkages in the industry; Build connections with benefactors and philanthropist to create projects; and Generate fund raising activities through external sponsorship. The threats are the following: limited support from community, industry or other institution and No continuity of community project and Short-lived/ Unsustainable community programs.

2.4 Production

The result of the Focus Group Discussion conducted on the Production shows its strengths as: Launch initial phase of production (ECC uniforms, IDs, Course T-shirts); Existence of IGP Center and IGP coordinator; Canteen concessionaires; School-based reproduction of test papers; Product development is encourages among students and Assert production of Instructional materials among faculty and staff; While weaknesses covered the following: Lack of funds; Lack of machineries for product development and Poor canteen location and improvement and Frequent change of administrator hinders program or project continuity. As for the opportunities, the following are the result of focus group discussions: Adopt ways and means in generating income resources; Invite publishers sponsoring production of Instructional materials among faculty and staff; invite Canteen investors, look for school's partnership in "Earn while you Learn; Learn while you earn" to encourage productivity among students. The threats that should be addressed are the following: Fast changing market trends; Strong Competitions among the canteens outside the school campus and Non- renewal of canteen concessionaire contract. is an urgent need and suggestions from the assessments made by the three (3) groups of respondents with regards to the path the institution will take for the next five years and supported by the SWOT analyses made by the Focus Group discussions. The result of the SWOT analyses will serve as guide in preparing a Proposed Development Plan for EARIST Cavite Campus.

3. Proposal on the Preparation of Five Year Strategic Development Plan

Every educational institution has its own share of strengths and weaknesses, threats and opportunities; based on the study, hence it requires a specific stratagem to address problem which necessitates careful thought on providing solutions. The identified findings on S-W-O-T could be improved through strategic development plan as every institution needs a concrete plan of action to be taken. In response to the CHED's four-fold mandate to all HEI's, preparing a Strategic Development Plan is a must. Planning is a part of management process which plays a vital role on the success of every institution The Proposed Five-Year Strategic Development Plan (1) will serve as a road map for EARIST Cavite Campus. This will be used to define the priorities and vision of the institute in the next five years. And (2) it will assist the administrator to evaluate the performance of the institute.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the findings of the study, the following conclusions are drawn:

1. The strengths of ECC are: Curriculum and instruction, management of resources and Research. The three groups of respondents unanimously settled on their assessment of the following areas that need immediate attention and improvement is the Extension and community linkages.

2. The result of SWOT Analysis with the focus group discussion helps identify the critical issues, challenges and remedial actions to be incorporated in the strategic development plan.

3. The preparation of Five-Year Strategic Development Plan for EARIST Cavite campus was proposed in order to define its priorities for the succeeding five (5 years in improving its competitiveness and meeting the 21st century challenges.

Recommendations

The researcher came up with the following recommendations:

1. Maintain and upgrade the different key result areas covered in the study in order to meet the requirements of the target accreditation level.
2. Direct action be given to the insufficiencies identified by the respondents of the study.
3. Maximize the Strength, and opportunities articulated by the focus group on the study to achieve the objectives of the Institute.
4. Immediate attention regarding threats should be done to prevent problems in the future.
5. Strengthen the four (4) mandated areas in instruction, research, extension and production in EARIST Cavite Campus.

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STRATEGIES/APPROACHES IN TEACHING SCIENCE: BASIS FOR AN INTERVENTION

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INTRODUCTION

A common educational goal across international and national educational systems is continuously reviewed. A balanced emphasis on knowledge and higher-order thinking skills is found in the curriculum guides of various educational systems. While looking at the educational goal in a wide perspective, science education also needs valid, authentic, and efficient assessments.

The twenty-first century education requires some knowledge of science as essential for everyone. It is in a common opinion that science should be as nonnegotiable a part of basic education as are language arts and mathematics, it is important to teach science because Science is a significant part of human culture and represents one of the pinnacles of human thinking capacity, it provides a laboratory of common experience for development of language, logic, and problem-solving skills in the classroom, a democracy demands that its citizens make personal and community decisions about issues in which scientific information plays a fundamental role, and they hence need a knowledge of science as well as an understanding of scientific methodology. For some students, it will become a lifelong vocation or avocation, and the nation is dependent on the technical and scientific abilities of its citizens for its economic competitiveness and national needs. In fact, one of the thrusts of the Commission on Higher Education is to create globally competitive graduates and to be globally competitive; there is a need for young people interested in science.

The educational system in the Philippines is a clear example of changes and challenges. It has in fact followed the same pattern of education with the rest of the world. Educational aims and standards demonstrated in the k-12 curriculum policies across disciplines and show how those curriculum guidelines were enacted in teaching science and other subjects as well. Recent efforts directed to improving science education, both at the basic and teacher education levels.

Science faculty can optimize the effect of teaching when they realized that there is a need to provide students with varied approaches/strategies they can apply in their teaching. Instructions in science require various teaching approaches to ensure successful teaching and learning process. While teachers are viewed as the most important asset in the learner's educational environment, for they motivate, guide and direct learners' quest for quality education; it is but fitting to assess and evaluate how knowledge, skills and attitudes in learning science are imparted through an appropriate strategies and approaches.

It is essential that science are integrated into learning areas and these may provide opportunities for teachers to develop science classroom activities using different approaches and develop holistic assessments that develop multidisciplinary capabilities in students. Cross curriculum approaches may ensure teachers that components and approaches complement each other, reinforcing learning emphasis, values and generic skills.

Several studies were conducted and reveal the same result that students have low retention of concepts, have inadequate cognitive and critical skills and poor expression of ideas or explanations of events in their own words. While it is true that teachers and administrators alike desire to provide quality education that will improve and enhance student's performance,

reality will speak for the truth that problems remained to be problems and someone must take the initiative to carefully assess what needs to be addressed. Any analysis of different national assessment systems will quickly reveal a wide variety of assessment techniques and approaches.

The researcher specializing in Science remains enthusiastic to undertake this study and that the result provided an input for the training program for teachers for the attainment of its goal in general and for the enhancement of students' performance.

Statement of the Problem

The major purpose of the study was to evaluate teachers' strategies/approaches in teaching BSE-Science, problems encountered and the achievement test of students in Science to propose an intervention.

Specifically, the study answered the following sub problems:

1. What are the commonly used strategies and approaches in teaching Science as to?
 - 1.1 Constructivism Approach;
 - 1.2 Collaborative Approach;
 - 1.3 Integrative Approach
 - 1.4 Inquiry-Based Approach; and
 - 1.5 Reflective Approach?
2. Is there a significant difference between the assessments of respondents on the aforementioned variables?
3. What is the level of performance of BSE Science 1 for the last three (3) years?
4. What are the problems encountered by the teachers in teaching Science?
5. Based on the result, what do researchers recommend?

Conceptual Framework

The researcher made use of the System Analysis through the input-Process-Output Model as illustrated in Figure 1.

The **INPUT box** consisted of the Locale and respondents of the study; Strategies/approaches utilize in teaching Science; Problems encountered; Students' performance for the last three years; and Reading from books, journals, magazines, theses, dissertations and online sources.

Included in the **PROCESS box** are the Development and Validation of the instrument and standardized test; Assessment of the Strategies/approaches in teaching science as to: Constructivism Approach, Collaborative approach, Integrative-Based Approach, and Reflective

Approach; Determination of problems encountered by faculty in teaching science, students' performance, Statistical Treatment; and Presentation, Analysis and interpretation of data.

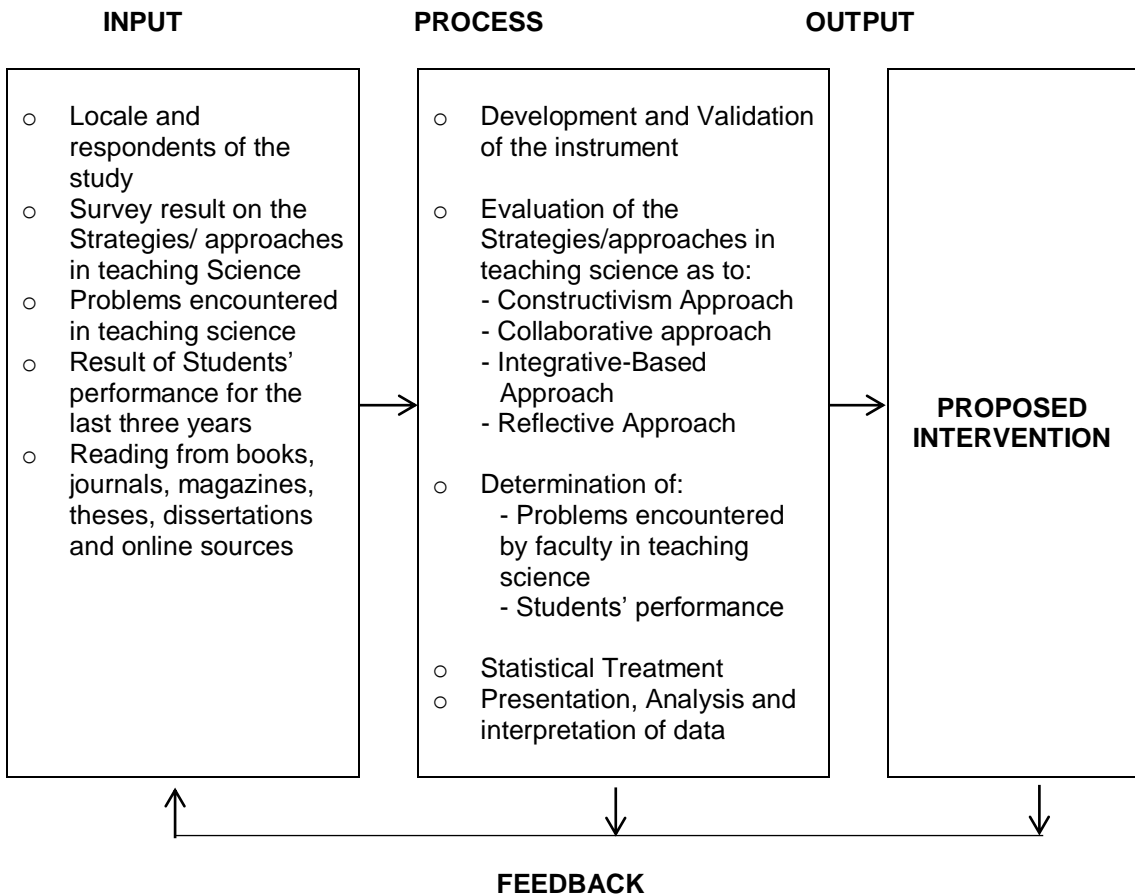


Figure 1. Paradigm of the Study

Meanwhile, the **OUTPUT box** is the proposed intervention.

The understanding of a particular conceptual framework will provide illustrative that as students need to progress in all aspects, it is useful for teachers to have a clear understanding of each of these components in teaching and students learning in science, just as they need a clear understanding of the subject matter, the specific science content, that they are teaching. It is also useful at times to focus instruction on development of specific skills, in balance with a focus on the learning of specific facts.

Objective of the Study

The major purpose of the study was to evaluate teachers' strategies/approaches used in teaching Science, problems encountered and the achievement test of students in Science to propose an intervention for faculty in Science.

Significance of the Study

The result will provide information necessary for lesson preparation, educational planning and decision-making concerning different instructional materials to be used for students.

Specifically, the result of the study will benefit the following:

Learners. The study will be most beneficial to the learners as the most affected by improved teaching and will serve as a challenge in improving achievement level in Science.

School Administrators. The result of this study will provide the administrators the necessary data needed in planning a more balanced instructional program in the curriculum particularly in Science. It may also serve as an avenue in strengthening learners' weak points by addressing and considering the Training Program.

Science Faculty. Through this research, the Science teachers can plan some teaching strategies and subject activities with the hope of improving the performance level of students in Science.

Educators and Researchers. Educators can make use of this research study in their perspective fields of endeavor. The result of this study may also serve as a basis for making future studies related to the present study.

REVIEW OF THE LITERATURE and STUDIES

Orosa (2014) wrote in an editorial page that the country has approved several landmark legislation and other measures to promote the welfare of children. As in economic growth, however, these measures must be felt all the way down to the grassroots.

Many educators and graduate student researchers have identified several factors behind the low performance in science of Filipino students. These are: quality of teachers, the teaching-learning process, the school curriculum, instructional materials, and administrative support (DOST-SEI, 2006).

One critical factor in the improvement of science education in the country is the inadequate supply of qualified teachers to teach physics, chemistry, biology, and integrated science. Many of those who teach Math and Science in public schools are not Math and Science majors, but Education majors who lack expertise in the subjects

Lofciu (2011) stated that Constructivist approach of science education is undertaking of wide scope nowadays, mainly in teaching and learning processes. According to constructivist evaluation there are important the skills students achieved during learning process, their abilities to use in real life, what they learned and the way they refer themselves to others. New constructivist learning strategies are more and more numerous, so the evaluation has to be discriminating from the traditional one. Constructivist teachers develop alternative evaluating methods according to students' different learning styles as to offer to everyone the opportunity to express themselves. During evaluation process students may interact one to each other, may use ICT or online environments.

It was concluded that Constructivist evaluation is a complex activity involving both students and teachers. A preliminary preparation is needed. Teachers have to design the evaluation strategies as to be easy to integrate in lessons and in the meantime students have to get involved in their own evaluation. Constructivism encourage self-evaluations allowing

student to reflect to their own skill acquisition and peer-review evaluation as a strategy to develop communication and social skills.

An online article by Bates (2012) that in the OCL theory, the teacher plays a key role not as a fellow-learner, but as the link to the knowledge community, or state of the art in the discipline. Learning activity needs to be informed and guided by the norms of the discipline and a discourse process that emphasizes conceptual learning and builds knowledge.

Harasim (2012) emphasizes the importance of three key phases of knowledge construction through discourse: idea generating: this is literally brainstorming, to collect the divergent thinking within a group; idea organizing: this is where learners compare, analyze and categorize the different ideas previously generated, again through discussion and argument; intellectual convergence: the aim here is to reach a level of intellectual synthesis, understanding and consensus (including agreeing to disagree), usually through the joint construction of some artifact or piece of work, such as an essay or assignment.

Brookfield (2017) said that when teaching reflectively, instructors think critically about their teaching and problem-solve for solutions to recurring issues, rather than relying on unchanging, established personal norms. This critical analysis can draw on a variety of sources: lays out four crucial sources, including “students’ eyes, colleagues’ perceptions, personal experience, and theory and research.” Instructors can use a variety of tools and approaches to learn from these sources and reflect upon their teaching, ranging from low-key to formal, and personal to inter-collegial.

Jackson (2014) opined that the globally focused science classroom is a powerful place for students to explore the implications of these worldwide problems and opportunities. Globally focused teachers create a place where students learn science from interdisciplinary and global perspectives. Using a science curriculum with global case studies engages students in problem-based learning tasks and scientific investigations founded on research in scientific literature. Empowered by a global science curriculum, students investigate complex biological, chemical, physical, earth, environmental, and human systems, recognize and consider the power of divergent perspectives, communicate about science effectively with diverse audiences around the world, and translate their scientific ideas and findings into actions that make a difference in their local community and the world. In globally focused schools, students explore the language, symbols, tools, technologies, and processes of science inquiry and literacy as the foundation for understanding and advancing science knowledge. Science inquiry shows students how to initiate the inquiry, design and conduct experiments, present and analyze data, interpret results, and draw conclusions. Science literacy teaches them how to discuss a science-related issue, put the issue into context, conduct research, develop and support a thesis, discuss the implications, and communicate about the work.

Masbaño (2015) conducted a study and the findings revealed that an entire group, the perceived effective teaching practices were mastery of the subject matter, update knowledge about the subject, utilize effective strategies and methods and observe ethical and moral principles. When classified as to academic unit the same effective teaching practices were preferred. As to status of appointment part time instructors perceived effective teaching practices were show mastery of the subject matter, provide opportunities to develop critical thinking and observe moral principles, while permanent faculty include update knowledge about the subject matter, show mastery of the subject matter and utilize appropriate strategies and methods. Indeed the teachers endorsed appropriate solutions to the problems they encountered such as provision of the different learning resources like upgrade laboratory facilities and equipment, purchase additional books that could supplement the curriculum and purchase additional books that could supplement the curriculum. The respondents also endorsed solutions to the teacher-related problems such as train teachers on the recent

development on the subject that they are teaching, provide more hands on activities for students, train teachers on effective teaching strategies and methods, and strengthen commitment of teachers.

The study of De Guzman (2013) presents the reform strategies instituted in basic education system based on the four quality measures. With the implementation of reforms in basic education, both tangible and intangible benefits were realized by the system. Specifically, the reforms have truly rendered teaching as a profession and teachers as professionals as promulgated by Republic Act No. 7836. The reforms have in fact conferred upon teachers the dignity and the worth they have been dreaming of through the years. Today, teachers from government institutions are now at par with their private counterparts not only in terms of monetary benefits but also in terms of opportunities for professional growth through attendance in various in-service education programs intended to upgrade their conceptual, technical and human relation skills. Through these reforms, highly bureaucratic have been simplified and have given teachers the status as persons and as professionals. Moreover, education has become a great equalizer procedure with the poor enjoying wide access to educational opportunities via formal and alternative learning structures. The present-day curriculum has infused the use of information technology to facilitate access to information by both the teacher and the learner. The revitalized curriculum has made the instructional delivery “hi-teach”, hi-touch” and “hi-tech.”

Torio (2016) revealed in the study conducted that there are several teaching strategies that had been initially introduced to the teaching and learning practice in order to address the poor performance of the Philippines both in national and international examinations specially in the areas of mathematics and science. Brain-based teaching strategies have proven significant contributions to learning gains and one strategy under brain based was considered in this study and is referred to as Whole Brain Teaching Strategy (WBT). WBT addresses the four learning areas of the brain. Addressing the four areas of the brain means targeting the holistic development of individual learners. The failure to address one area will mean failure to completely contribute to the growth of individual learners. In conclusion, Academic performance is a complex interplay of a lot of school factors. The teaching strategy is just one of the many factors that can bring positive changes in the performance level of students. Another big factor that affects performance is motivation. In this study, one teaching strategy was used as a means to target performance of students as well as motivation. The teaching strategy is referred to as Whole Brain Teaching (WBT). The idea of WBT is to target four learning areas of the brain for a holistic development. The results of the study revealed that there is an average learning gain of 20% after facilitating classes under WBT. High motivation was also found when the results of the PMQ were analyzed. The motivation component is highest in terms of intrinsic sources followed by extrinsic sources. This teaching innovation is just one of the many possible teaching strategies that can be explored by practitioners in the field. The positive learning gains that resulted after the introduction of the strategy is an indicative that the effort to innovate and improve teaching and learning is paying off.

Ou, Lee, and Linn (2011) findings revealed that the impact of Gender, ELL Status, and Computer among the three student background variables investigated, gender, in general, showed the smallest achievement difference. Males and females performed equally on four out of six inquiry-learning topics. Females outperformed males on biology ($p < 0.05$), but the magnitude of the difference was negligible ($d \frac{1}{4} _0.07$). Males scored significantly higher on physics ($p < 0.01$), with a small to medium effect size of 0.32. Further analysis was conducted for one class that showed an unusual pattern of gender difference in physics due to a very small number of girls in the class. In general, we did not observe any prominent gender difference in the knowledge integration ability assessed in this study.

Finally, we found that teachers who implemented the inquiry-based science units more often tended to have larger student success in science achievement. This finding raised a great interest in further exploring the relationship between teachers' curriculum implementation and student inquiry-science learning. Previous research has shown that many variables concerning teacher implementation may have a profound impact on student learning outcomes,

Recent empirical studies have indicated that some of these innovative strategies produced better result in terms of students' learning. Oyelekan and Olorundare (2015) conducted a study to determine the effects of mastery learning instructional strategy on secondary school students' achievement in mole concept, a topic that has been empirically identified as difficult to understand by students. It was found out that students taught using the mastery learning instructional strategy performed significantly better than their counterparts in the control group.

This survey study conducted by Juuti, Lavonen, Byman, and Meisalo (2012) analyzes Finnish grade 9 students' actual experiences with science teaching methods and their preferences for how they would like to study science. The survey data were collected from 3,626 grade 9 students (1,772 girls and 1,832 boys) across randomly sampled secondary schools. Students were asked to evaluate how often a particular teaching method is used in science (chemistry and physics) teaching and how often they would like to see the teaching method used. Data were analyzed using nonparametric tests. Boys seemed to be more satisfied with current and traditional science teaching methods like direct teaching, solving basic problems, reading textbooks, and conducting practical work, while girls desired more discussion. Students who are interested in school science or think that school science is relevant in everyday life would like more creative activities such as brainstorming and project work. Results indicated that understanding the connection between student interests and teaching method preferences, especially interpreting interested students' desire for creative activities, are important aspects for future research.

Geoff and Watters (2013) concluded that although there were the expected "teething" problems, overall there is a felt that the project was successful and look to continuing the global learning again. The involvement of some of students in the project provided them with the opportunity to be exposed to an array of different and enriching learning experiences that other students in the science education unit did not have. It was also a stimulating challenge and rewarding learning experience for both and have learnt many lessons from the initial experience and intend to make changes to further enhance the global learning for students.

YCTL (2017) emphasized in the study conducted that reflective Teaching (RT) is a self-assessment of teaching, wherein an instructor examines their pedagogy, articulates reasons and strengths for their strategies, and identifies areas for revision or improvement. RT involves an examination both of one's underlying beliefs about teaching and learning and their alignment with actual classroom practice, throughout a course and afterwards.

Synthesis of the Study

The review of the literature has provided a background and rationale for studying the strategies/approaches models for teaching, problems encountered and students achievement.

It also provides an understanding of the principles and concepts of teaching and learning, and instructional strategies and effectiveness in Philippine Education for All (EFA, 2015), (DEPED, 2010), Orosa (2014) were all in one that there is a vision and a holistic program of reforms that aims at improving the quality of basic education for every Filipino and to address the problems faced by Science teachers.

Jackson (2014), De Guzman (2013), opined that the globally focused science classroom is a powerful place for students to explore the implications of these worldwide problems and opportunities and that reform strategies instituted in basic education system.

Meanwhile, the following authors Harasim (2012), Brookfield (2017), Lofciu, Miron, and Antohe (2011), Bates (2012), and Ou, Lee, and Linn (2011) discusses the different strategies and approaches used in teaching Science Studies conducted that concerns strategies and approaches in teaching science Bernardo (2008), Masbaño (2015) and Pascual (2015) conducted a study and the findings revealed that the perceived effective teaching practices were mastery of the subject matter, update knowledge about the subject, utilize effective strategies and methods and observe ethical and moral principles.

METHODOLOGY

This chapter presents the research design, the research locale, the sample and sampling technique, the instruments, the data gathering procedure, and the statistical treatment of the data.

Research Design

This study made use of the quantitative approach using descriptive research design coupled with survey design. Creswell (2012) defined descriptive research as a type of research that describes and interprets “what is.” It reveals conditions or relationships that exist or do not exist, practices that prevail or do not prevail, beliefs or points of view or attitudes that are held or are not held, processes that are going on or otherwise, effects that are being felt, or trends that are developing.

With its many applications, survey research is a popular design in education. As described by (Cresswell, *ibid*) survey research designs are procedures in quantitative research in which investigators administer a survey to a sample or to the entire population of people to describe the attitudes, opinions, behaviors, or characteristics of the population.

This method determined information about the variables often carried out as preliminary step to be followed by researcher employing more vigorous control and more objective methods. Normative survey or studies also serve as direct source of valuable knowledge concerning human behavior.

Samples and Sampling Technique

Purposive sampling technique was used for the teacher-respondents. A purposive sample is a non-probability sample that is selected based on characteristics of a population and the objective of the study; purposive sampling is also known as judgmental, selective, or subjective sampling. This type of sampling can be very useful in situations when you need to reach a targeted sample quickly, and where sampling for proportionality is not the main concern.

Research Instruments

1. Survey instrument was developed to identify the strategies/approaches used in teaching Science teachers' perceptions on selected principles of teaching and learning, identify teaching methods/tools.

The instrument consisted of two parts:

Part I. The first part was to identify the strategies/approaches used in teaching Science.

Part II. This parts aims to identify the problems met by those teaching handling Science.

Statistical Treatment

The researcher used the following statistical test to treat the data collected. The data is nominal. Descriptive statistics such frequency, percentage, weighted mean, t-test for dependent variables, t-test of Significant Difference between two Means.

RESULTS AND DISCUSSIONS

Sub Problem No. 1. What are the commonly used strategies and approaches in teaching science as to:

As presented in Table 1 reveals the assessments on the strategies/approaches utilized in Science.

Table 1
Assessments on the Strategies/Approaches Utilized in Science

Variables	Experts		Science Faculty		Composite Mean	
	WM	VI	WM	VI	WM	VI
1. Constructivism Approach	4.38	HU	4.32	HU	4.35	HU
2. Collaborative Approach	3.46	U	2.92	MU	3.19	MU
3. Integrative Approach	3.41	U	3.37	MU	3.39	U
4. Inquiry Based Approach	3.33	MU	3.52	U	3.42	U
5. Reflective Approach	3.46	U	3.72	U	3.59	U
Overall mean	3.61	U	3.57	U	3.59	U

Generally, the group assessed "Constructivism Approach," with 4.35 mean value, verbally interpreted "Highly Utilized"; "Reflective Approach," "Inquiry Based Approach," and "Integrative Approach," rated "Utilized" with mean values of 3.59, 3.42 and 3.39, respectively; and only "Collaborative Approach," with composite mean of 3.19, verbally interpreted as "Moderately Utilized" and obtained overall mean of 3.59, verbally interpreted "Utilized."

Sub Problem No. 2: Is there a significant difference between the assessments of respondents on the aforementioned variables?

As shown in Table 2, the assessment of the respondents on the strategies/approaches in teaching science obtained a computed t value of 0.3790 were found to be of lower than the tabular value of 2.262 at five percent level of significance with 9 degrees of freedom and verbally interpreted Not Significant hence we accept the hypothesis.

Table 2
Comparison of Assessments of the Respondents

Variables	Experts		Faculty		t-value	Decision	VI
	Mean	SD	Mean	SD			
1. Constructive approach	4.38	0.32	4.32	0.45	0.3790	Accept H ₀	Not Significant
2. Collaborative approach	3.46	0.81	2.92	0.89	1.5557	Accept H ₀	Not Significant
3. Integrative approach	3.41	0.76	3.37	0.81	0.1247	Accept H ₀	Not Significant
4. Inquiry Based approach	3.33	1.05	3.52	0.67	0.5168	Accept H ₀	Not Significant
5. Reflective approach	3.46	0.06	3.72	0.25	3.6416	Reject H ₀	Significant
Overall	3.61	0.60	3.57	0.61	1.2436	Accept H₀	Not Significant

Critical value at .05 = 2.262

df = 9

This means that the experts and Science faculty does not concur with perception of Science teachers in which regards with self-evaluation and self-reflection on strategies/approaches in teaching science in terms of reflective approach.

As presented in Table 2 on summary comparison of assessments by two group of respondents resulted to an obtained overall t-value of 1.2436 were less than the critical value of 2.262 and verbally interpreted Not Significant. Hence, accept the null hypothesis at five percent level of significance with 9 degrees of freedom leading to the acceptance of the null hypothesis that there is no significant difference between the assessment of the Science faculty in the strategies/approaches in teaching science in terms of constructive approach, collaborative approach, integrative approach, inquiry based approach, and reflective approach.

Generally, the experts and science faculty respondents share common assessment on the strategies/ approaches utilized in teaching science in terms of constructive approach, collaborative approach, integrative approach, inquiry based approach and reflective approach.

In the findings of Masbaño (2015) revealed that an entire group, the perceived effective teaching practices were mastery of the subject matter, update knowledge about the subject, utilize effective strategies and methods and observe ethical and moral principles. When classified as to academic unit the same effective teaching practices were preferred. As to status of appointment part time instructors perceived effective teaching practices were show mastery of the subject matter, provide opportunities to develop critical thinking and observe moral principles, while permanent faculty include update knowledge about the subject matter, show mastery of the subject matter and utilize appropriate strategies and methods. Indeed the teachers endorsed appropriate solutions to the problems they encountered such as provision of the different learning resources like upgrade laboratory facilities and equipment, purchase additional books that could supplement the curriculum and purchase additional books that could supplement the curriculum.

Sub Problem 3: What is the level of performance of BSE Science II in Science for the last three years?

The finding shows in Table 3 that on school year 2016-2017 the students performed with a general average of 83.09; school year 2017-2018 with an average of 84.86; and school year 2018-2019 with an average of 84.10, respectively. Generally, the overall mean performance of 84.02 with a verbal interpretation of Average.

Table 3
Level of Performance of BSE-Science 1

School Year	MPS	Verbal Interpretation
S.Y. 2016 – 2017	83.09	Average
S.Y. 2017 – 2018	84.86	Average
S.Y. 2018 – 2019	84.10	Average
Overall Mean	84.02	Average

Sub Problem No. 4. What are the problems encountered by the faculty in teaching Science?

Table 4 reveals the problems encountered in teaching Science.

Table 4
Problems Encountered in Teaching Science

Problems Encountered	Experts		Faculty		Composite	
	WM	VI	WM	VI	AWM	VI
1. Faculty is not fostering productive learning environments.	3.30	ME	3.15	ME	3.22	ME
2. Do not promote active engagement based on connections to students' personal interests and career goals.	3.00	ME	2.90	ME	2.95	ME
3. The requisite knowledge, skills, and dispositions necessary for science literacy and support science career choices are not develop among students.	3.30	ME	3.20	ME	3.25	ME
4. Do not capitalize on learning progressions by revisiting earlier content in more depth.	2.38	LE	2.45	LE	2.42	LE
5. Do not promote an inquiry and problem-based learning approach to science instruction.	2.59	LE	2.50	LE	2.55	LE
6. Do not use assessments that focus on higher-order learning.	2.60	ME	2.65	ME	2.58	ME
7. There is no professional development for college science teachers such as ICT use, latest trends, approaches and related problems.	4.55	HE	4.30	HE	4.42	HE
8. Science laboratory is not equipped with safety features like ventilation hoods and showers.	4.20	HE	4.25	HE	4.22	HE
9. Students do not follow directions and harm themselves or others	4.33	HE	4.20	HE	4.26	HE
1. Science faculty does not organize their time differently to meet the responsibility of planning, implementing, and grading assessments.	4.48	HE	4.20	HE	4.34	HE
Overall Mean	3.46	E	3.38	ME	3.42	E

Legend:

Scale	Range	Verbal Interpretation	Symbol
5	5.00 – 4.20	Highly Encountered	HE
4	4.19 – 3.40	Encountered	E
3	3.39 – 2.60	Moderately Encountered	ME
2	2.59 – 1.80	Least Encountered	LE
1	1.79 – 1.00	Not at all Encountered	NE

The combined assessments of the two groups of respondents reveal that “There is no professional development for college science faculty such as ICT use, latest trends, approaches and related problems,” “Science faculty do not organize their time differently to meet the responsibility of planning, implementing, and grading assessments,” “students do not follow directions and harm others,” and “Science laboratory is not equipped with safety features like ventilation hoods and showers,” as supported by composite mean values of 4.42, 4.34, 4.26, and 4.22, respectively, verbally interpreted “Highly Encountered”; four indicators were found to be “Moderately Encountered” with composite mean of 3.25, 3.22, 2.95 and 2.58, respectively; and two were considered to be “Least Encountered” with composite mean of 2.55 and 2.42 with a grand mean of 3.42, verbally interpreted “Encountered.”

It can infer that there is a need for professional development for Science faculty to be able to meet their responsibility such as planning, implementing and grading assessments and to be equipped with skills in handling students with classroom behavior problems.

Sub Problem No. 5. Based on the result, what do the researcher recommend?

Based on the findings of the study, the researcher develops a training program for Science faculty that will contribute to address the low achievement of the students. The main features of the training program/intervention are the Introduction (Rationale and Relevance); General and Specific Objectives; and Requirements for Program of Activities (Budget and Materials). Moreover, the training program presented with columnar heads such as KRA, Objectives, Strategies, Program/Project, Activities/Task, Time Frame, Resources and Performance Indicator.

Introduction

Improving public education involves improving the quality of teaching through faculty selection, education, mentorship and professional development. However, this proposed training program will not deal with other aspects but rather on the Professional development--a significant measure that this proposed Training Program is focusing on through a training program.

Pedagogy strategies/approaches based training begins by helping teachers understands the role of learning in the design and functions of class activities. It is a common fact that there are professional needs of the teachers that administration has to address.

A. Rationale: As a learner-centered public institution, the Commission on Higher Education continuously improves itself to better serve its stakeholders through this output of the researcher. Thus, the training program is designed for faculty with an aim to enhance science faculty strategies/approaches in transferring learning to the learners and for professional development as well.

B. Relevance. In preparing faculty to create and use technology-based educational products for the classroom, a new approach to training is necessary and relevant. The activities are meant to provide a simple and applicable working for learning.

GENERAL AND SPECIFIC OBJECTIVES

The general objective of this study is to propose a training program for faculty in BSE-Science 1, Manila. The training program have identified three key domains of professional

knowledge and skills necessary for improving teachers' classroom teaching: a) subject matter or content knowledge (Science), b) strategies/ approaches concerning how and when to teach the subject matter (e.g., how to teach the concept through ICT concept), and c) developmental knowledge concerning how and when to teach content to BSE-Science 1.

Specifically, the training program for science faculty aims to:

1. To provide and conduct seminar, training for professional development for science faculty in the use of ICT, latest trends, approaches and related problems.
2. To improve teaching practice and learner achievement and to give feedback to the administrators what needs to improve in the laboratory room.
3. To conduct reorientation for teacher to be able to functional effectively in the classroom such as responsibility of planning, implementing, and grading assessments.

REQUIREMENTS FOR PROGRAM OF ACTIVITIES

For the proposed TP to succeed, there are certain requirements that has to be fulfilled—the budget and Materials

A. Budget. The budget for this activity is based upon on DO 32, S. 2011–Policies and Guidelines on Training and Development (T&D) Programs Activities

B. Materials. The materials required for the TP are Venue, Resource Speaker(s), and other logistics necessary for the success of the training program.

Table 5
Proposed Intervention Plan

KRA	OBJECTIVES	STRATEGIES	PROGRAM PROJECT	ACTIVITIES/TASK	TIME FRAME	RESOURCES		PERFORMANCE INDICATOR
						Person Involved	Funding	
Professional Development	To provide and conduct seminar, training for professional development for College science faculty in the use of ICT, latest trends, approaches and related problems.	Capacity Building	"Science Moving Towards Development for Develop Learners"	Conduct seminars for teachers on: ICT integration, Teaching Strategies and Approaches	1 month	Dean, Science Chair Faculty	Training and Devt. Fund	80% of the participants attended the seminar and 10% increase passing in the Achievement Test
	To improve teaching practice and learner achievement	Teaching Methods, Techniques and Approaches	Multiple Teaching Approaches thru ICT					
Class-room Functions	To conduct reorientation for teacher to be able to functional effectively in the classroom such as responsibility of planning, implementing, and grading assessments."	Reorientation for faculty	"Teachers Management Function for Effective Classroom Delivery?"	Group orientation for classroom management for Science Teachers. Brainstorming for Classroom Best Practices	1 week	Dean, Science Chair Faculty	Membership fee or Donor	90% of science faculty got aware of classroom management functions
Laboratory Improvement		Collaboration and Partnership with the PTA & Parent	"Interpersonal and Shared Responsibility through Parents"	Coordination with parents through PTA for program planning, Conduct orientation for parents Planning, Monitoring and Implementation		Dean, Science Chair Faculty	Donor	80% improved laboratory improvement

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of the study, the conclusions derived are:

1. The strategies/approaches highly used by teachers are Constructivism Approach while moderately utilized is collaborative approach.
2. The assessment of respondents is not differ on the strategies/approaches in teaching science in terms of constructive approach, collaborative approach, integrative approach, inquiry based approach, and reflective approach.
3. The performance level of BSE-Science 1 in Science was average for the last three years.
4. There are problems encountered which should be addressed to be able to meet their responsibility in planning, implementing and grading assessments and to be equipped with skills in handling students.
5. The proposed intervention for faculty science can be recommended to the higher authorities.

Based on the findings and conclusions, the following recommendations are:

1. Identify the best strategies/methods/practices utilize by faculty in teaching science.
2. Problem identified and pinpointed would require much attention and solution.
3. Administrators through their teachers may come up with a common plan to address the low achievement result of the students in Science.
4. Allow teachers to attend seminars, training, and exposure in the available online sources that may help teachers address and improve their needing concerns in teaching Science subject.
5. Future researcher may conduct related studies using different locale.

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DEVELOPMENT AND VALIDATION OF FPI (FILIPINO PERSONALITY INVENTORY)

Dr. Lourdes P. Jusay

INTRODUCTION

This paper describes the development and validation of a measure of Filipino personality. Understanding the personality of the Filipinos calls for dynamic measurement. Personality refers to the stability of the cognitive, affective and psychomotor behavior of the person which differ him from others. Psychologists have numerous ways of understanding personality. They, too, vary in their approach as to their individual understanding of personality. Some use inner conflict of the individual like the Psychoanalytic theorists in appreciating the uniqueness of the person while others use trait, environment and a lot more. One of the most studied approach in understanding personality is the factor analysis. Using factor analysis, several personality tests were developed. Thus, personality was seen as a composite of psychological constructs of the person which give rise to his uniqueness as a person. These constructs are evident in the environment where the person lives. This provides for the individuality of the person which separates him from others.

In the recent past, the study of personality has been in the field of Big Five Model (Goldberg, 198; and Costa & McCrae, 1992). This framework gained wide support by the professionals in Psychology and other related fields. As such, the Big Five model was considered the most widely used framework in studying personality (Naumann and Soto, 2008). Other instruments to measure psychological constructs of personality were developed. One of these is the NEO Personality Revised (NEO-PI-R) which measures other aspects of personality dimension (Costa & McCrae, 1992).

The Big Five Model and the NEO-PI-R were developed using the factor analysis of each facet. They did not consider the environment where the individual lives which, in one way or another, influenced the total personality make up of the individual. It has been said that personality does not exist in vacuum. The environment is significant in the furtherance of the appreciation of such uniqueness of the individual's responses to a situation which plays an important influence in one's life.

Though these studies demonstrated the significance of researching the different personality types of a person, there is a nil number of published instruments for measuring Filipino Personality. The Panukat ng Pangkataong Pilipinong (PPP) was developed which tried to look into the personality idiosyncrasy of the Filipinos. But, it failed to be used by the majority of the people for whatever reasons the users of this test encountered. Hence, it did not make good as a measure of Filipino personality. Another test was on Filipino Values which focused on cultural values as anchorage in understanding the many facets of Filipino personality.

The present study purports to develop and validate an instrument to determine the Filipino personality. Construct of Filipino personality can be defined as those traits that distinguish the Filipino from his neighboring counterparts in Asian countries. It is significant that a true measure of the Filipino personality be developed in order to understand fully the Filipino who is unique as a person. This could be the reason as to why people of the world say that Filipinos are extraordinary people. They differ significantly from other people. They differ about their worldview of themselves as well as the way they look at things. This is the direct result of the influence the environment may have in the personality construct of the Filipinos. This results to a better life which they enjoy as a person. As a consequence, the Filipinos are said to be one of the resilient people in the world. Therefore, a good understanding of the Filipino

personality may provide information about the inner world of the Filipino.

To understand the Filipino, a historical information will be helpful as mentioned by Jusay (2013) in the book she published entitled "Values and Work Ethics" where she contended that the Filipino was influenced by his Malay-Indonesian-Negrigo-Chinese-Spanish-American forefathers. The Malay is a friendly individual who makes his friends feel at ease in his presence. They concerned themselves with what is happening at the moment. It is from these forefathers where the Filipinos got their affability construct.

Further, the author said that a Filipino is a person who maintains a smooth interpersonal relationship or what sociologists called SIR. The Filipino does not nurture ill-feelings. He wants to be happy, most of the time and spend the rest of his life, enjoying the beauty of life. Similarly, the Filipino learns the value of frugality from his Chinese ancestors. Filipinos learn to save for the exigencies in the future. His idea of fortuitous event influenced him greatly where he became mindful of his life especially when there is a need to be addressed instantaneously. He is prepared for the eventualities that may come along his way. Filipinos, too, are entrepreneurial people. They excel in their small and medium enterprises (SMEs) and survive in the business milieu, no matter how small or big their businesses are, which skill they got from their Chinese lineage.

Jusay contended that the heart of the Filipino is of Spanish origin. With the long conquest and occupation of the Spaniards to the Philippines, about 333 years, the Filipinos imbibed the characteristics unique among the Spanish people. The Spaniards brought the Spanish laws and Roman philosophies to the realm of the life of the Filipinos. They became romantic and sought the true and ultimate value of individual happiness. Thus, Filipinos do differ from others because of the integration of such values brought about by these conquerors.

The mind of the Filipino, on the other hand, is influenced to a maximum level, by the Western culture particularly that of the Americans. American way of life made an impact in the lives of the Filipinos who became materialistic, pragmatic, possessing colonial mentality and over concern for luxury and wealth in life. The hardships which the Filipinos experienced during the Spanish regime made them, in a way, seek for some comfort, when the Americans came in. The Americans taught the Filipinos to govern themselves effectively by their ideology called democracy. They, too, taught the Filipinos to seek for their equality rights in the eyes of justice. They preached their religion of Protestantism to the natives of the country which gave the Filipinos freedom to choose their own religious leanings other than the Catholicism brought by the Spaniards in the land.

With these abovementioned facts about the Filipinos, a true measure of Filipino personality is, indeed, wanting, for better appreciation of the nature of the Filipinos. It can be deduced, therefore, that culture molds the person and is vital in understanding the person. Personality is deeply rooted in one's culture. The culture decides the limits of personality that needed to be controlled and praised. Hence, this study determines to develop and validate an instrument to identify the Filipino personality. Psychological constructs of Filipino personality can be defined as pervasive manifestation of thoughts, feelings, and behaviors in a given situation. It is significant that a true measure of the Filipino personality be developed in order to understand fully the Filipino.

RESEARCH HYPOTHESIS

1. The Filipino psychological constructs will be the prevalent traits evident among the Filipinos of all ages since such traits are developmental and pervasive in nature.

2. There will be relatively high internal reliability of the psychological constructs identified for the Filipinos.

3. The Item analysis of Reliability Coefficient will be greater than 0.70 and above for the FPI.

SCORING

The researcher prepared 200 declarative statements about the Filipino psychological constructs. In her preparation, she took into consideration the nature of a Filipino who is commonly observed in a social milieu. These statements were subjected to expert validation. Nine (9) experts were asked to respond to the statements with two (2) options such as "True to Me" and "Not True to Me". There were negative items included in the statements about the Filipino personality constructs. Scores were tallied for the two options and sum of scores of the experts were taken for overall score of an item.

ITEM ANALYSIS

Item analysis for each declarative items was done. Item analysis was conducted to find out the 'd' value of each item. On the basis of these scores, items were selected to be included in the inventory. Those items having "d" value exceeding 0.70 in item analysis were included in the final inventory. The final inventory consists of 112 items.

RESULTS

Those items with computed values of 0.70 and above in the item analysis were selected for inclusion in the final inventory. The 'd' value of each item is shown in Table 1. All items have high validity, thus, they were included in the final inventory.

CONCLUSIONS

The present research is conducted to develop and validate an instrument to measure Filipino Personality. The results of item analysis which ranged from 0.70 to 1.00 were found out to be valid and reliable which indicate that the present instrument is capable to measure the Filipino personality constructs which made the Filipinos unique across all people. The personality constructs were classified into self knowledge, social intelligence, cultural authenticity, family lineage and ecological adaptation. With the help of this instrument, a person who will try to understand the idiosyncrasy of the Filipinos will gain important data as to the true nature of the Filipinos. This tool, FPI, is a bold attempt to answer the long quest to develop a customized personality inventory for the Filipinos since most of the personality tests available in the profession of psychology were made in other countries with exactly different sociocultural background compared with that of the Philippines. This will be a good inventory as it tried to look beyond the Filipino personality traits which were validated by the experts in their own field of endeavor.

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STRATEGIES/APPROACHES IN TEACHING MATHEMATICS: BASIS FOR AN INTERVENTION

*Dr. Editha S. Magsino
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INTRODUCTION

The educational schemes of today are seeking to develop teachers through making them full aware of the different teaching strategies; since an effective and efficient teacher is decided by his/her ability of choosing the proper teaching and learning strategies and approaches through which the objectives of the lesson are achieved and its content is fully covered; and by which learners are given the ability to acquire the formerly set lesson objectives which precisely meet their needs. However, choosing the appropriate teaching and learning strategies is a complicated process; it demands a deep thinking on the part of the teacher and the ability to make balance between the available strategies and approaches in the light of the many interrelated variables.

A teaching strategy is in essence a general plan which includes all the parts of the teaching situation; namely: the objectives, teaching methods, teaching aids and evaluation strategies. The aforementioned parts are actually the activities a teacher does in the class for the purpose achieving the lesson's objectives. Teaching strategies are basically based on kinds of patterns and theories that are called "Learning Theories". Such theories are classified into three categories; they are: behavioral, cognitive and affective.

In the educational system in the Philippines, is a clear example of changes and challenges. It has in fact followed the same pattern of education with the rest of the world. Educational aims and standards demonstrated in the k-12 curriculum policies across disciplines and show how those curriculum guidelines were enacted in teaching mathematics and other subjects as well. Recent efforts directed to improving mathematics education, both at the basic and teacher education levels.

The tendencies mathematics teachers have, the way they acquire the minor skills, and the role of mathematics in modern life are all of the factors that affect in deciding which of the strategies suitable for teaching lessons of mathematics to choose. Those who adopt the constructional view that the most effective way of teaching mathematics is the one that provides students with the chance to relate their previous experiences with the one they are being taught. They believe that such experiences have great role in easing learners' comprehension process. They also stress the important role of the social interactions that accompany the learning process which – according to them – have much importance over the product; hence, they prefer using strategies like the group work/cooperative learning approach, brain storming, plays, alternate learning, and strategies of the like perhaps the most important issue in the field of teaching mathematics especially in the junior high level, is the inability of mathematic teachers to use variety of teaching strategies in teaching mathematical skills, with all what these strategies include of questions and performance training and variety of analytical and constructional- analytical processes which provide learners with the opportunities to learn the behavioral signs related to the skill learned, in an organized and effective manner within the social contexts and real life situations. Though teaching mathematics with all the needed skills still lies on the shoulders of mathematics teachers, it should also be laid on the shoulders of all teachers alike through using them in variety of teaching situations within different teaching contents.

Several studies were conducted and reveal the same result that learners have low retention of concepts, have inadequate cognitive and critical skills and poor expression of ideas or explanations of events in their own words. While it is true that teachers and school administrators alike desire to provide quality education that will improve and enhance learner's performance, reality will speak for the truth that problems remained to be problems and someone must take the initiative to carefully assess what needs to be addressed. Any analysis of different national assessment systems will quickly reveal a wide variety of assessment techniques and approaches.

The researcher specializing in Mathematics remains enthusiastic to undertake this study and that the result provided an input for the training program for teachers for the attainment of its goal in general and for the enhancement of learner's performance.

The researcher expects that the results of the study would shed light on the teaching strategies that the mathematics teachers' are missing though such strategies help learners engage in an affective learning process.

Statement of the Problem

The major purpose of the study was to evaluate teachers' strategies/approaches in teaching mathematics for BSE Math I, problems encountered and the achievement test of learners in mathematics to propose an intervention for mathematics teachers.

Specifically, the study answered the following sub problems:

1. What are the commonly used strategies and approaches in teaching mathematics in selected BSE Math I students in terms of:
 - 1.1. Constructivism Approach;
 - 1.2. Collaborative Approach;
 - 1.3. Integrative Approach;
 - 1.4. Inquiry-Based Approach; and
 - 1.5. Reflective Approach?
2. Is there a significant difference between the assessments of respondents on the aforementioned variables?
3. What is the level of performance of BSE Math I students for the last three (3) years?
4. What are the problems encountered by the faculty in teaching mathematics?
5. Based on the findings, what intervention may be recommended?

Conceptual Framework

The researcher made use of the System Analysis through the INPUT-PROCESS-OUTPUT Model as illustrated in Figure 1.

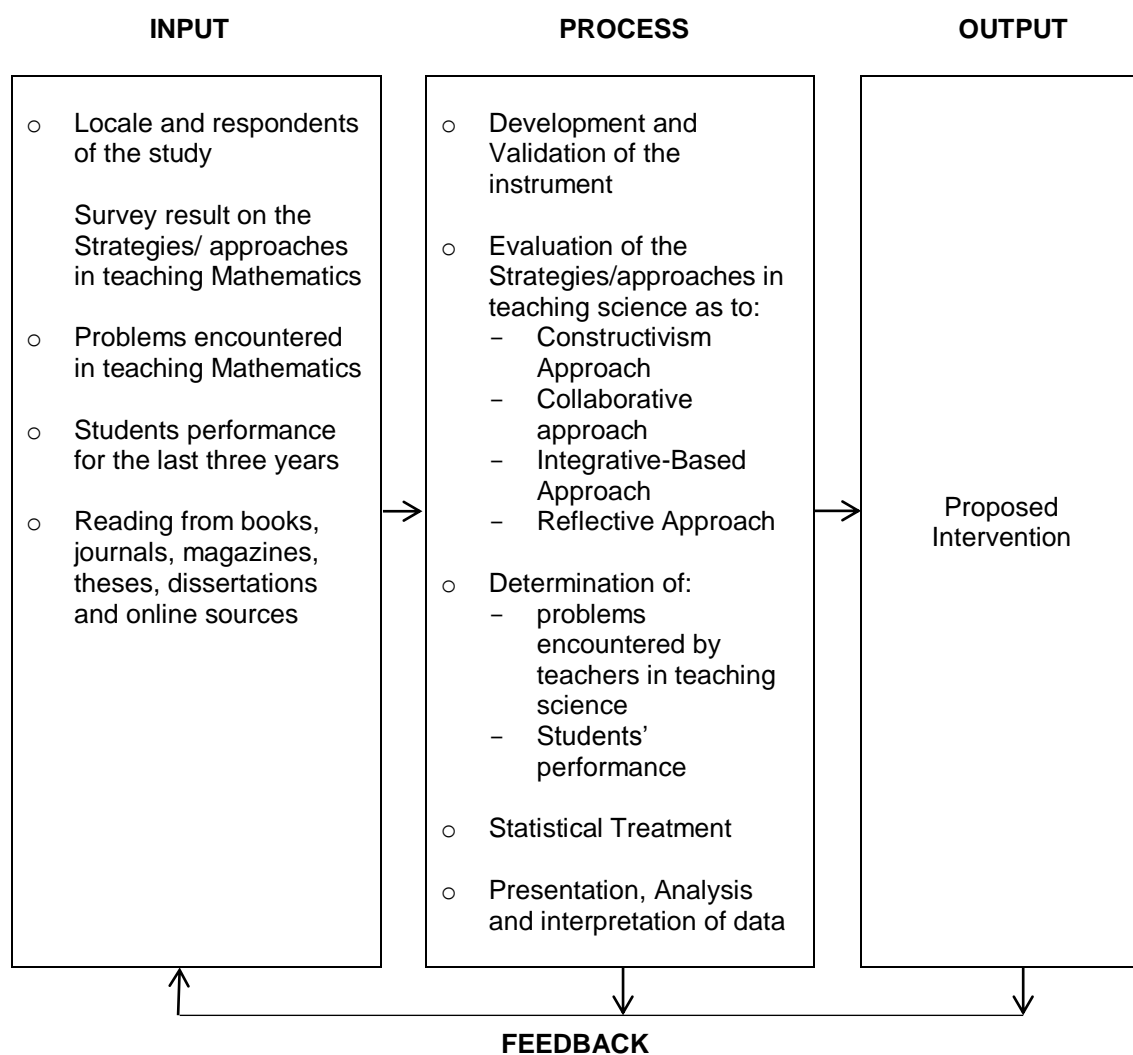


Figure 1. Conceptual Paradigm of the Study

The **INPUT** box consisted of the Locale and respondents of the study; Strategies/approaches utilize in teaching Mathematics; Problems encountered; Learners' performance for the last three years; and References from books, journals, magazines, theses, dissertations and online sources.

Included in the **PROCESS** box are the Development and Validation of the instrument and standardized test; Assessment of the Strategies/approaches in teaching Mathematics as to: Constructivism Approach, Collaborative approach, Integrative-Based Approach, Inquiry-Based Approach and Reflective Approach; Determination of problems encountered by teachers in teaching Mathematics, learners' Analysis and interpretation of data.

Meanwhile, the **OUTPUT** box is the proposed intervention.

The understanding of a particular conceptual framework will provide illustrative that as students need to progress in all aspects, it is useful for teachers to have a clear understanding of each of these components in teaching and learners learning in mathematics, just as they need a clear understanding of the subject matter, the specific mathematics content, that they are teaching. It is also useful at times to focus instruction on development of specific skills, in balance with a focus on the learning of specific facts.

Objective of the Study

The major purpose of the study was to evaluate teachers' strategies/approaches in teaching mathematics for BSE Math I students, problems encountered and the achievement test of learners in mathematics to recommend what intervention maybe proposed.

Significance of the Study

The result will provide information necessary for lesson preparation, educational planning and decision making concerning different instructional materials to be used for students.

Specifically, the result of the study will benefit the following:

Learners. The study will be most beneficial to the learners as the most affected by improved teaching and will serve as a challenge in improving achievement level in Science.

School Administrators. The result of this study will provide the administrators the necessary data needed in planning a more balanced instructional program in the curriculum particularly in Science. It may also serve as an avenue in strengthening pupils' weak points by addressing and considering the Training Program.

Teachers. Through this research, the mathematics faculty can plan some teaching strategies and subject activities with the hope of improving the performance level of learners in mathematics.

Educators and Researchers. Educators can make use of this research study in their perspective fields of endeavor. The result of this study may also serve as a basis for making future studies related to the present study.

REVIEW OF THE LITERATURE and STUDIES

Anecito and Gorduz (2014) disclosed by the previous investigations on the state of education in the Philippines, problems like access to basic education, quality of basic education, low budget with high enrollment, shortage of teachers, shortage of textbooks, of classrooms and more, and underinvestment in education continuously beset the system. There were various efforts and programs that the government undertook in order to somehow address those problems. However, the same problems occur and relate with another problem. The surging poverty amongst people adds up to the existing and continuing handicap to development that we encounter. This contributes to the problem on access to education.

It was concluded that Constructivist evaluation is a complex activity involving both students and teachers. A preliminary preparation is needed. Teachers have to design the

evaluation strategies as to be easy to integrate in lessons and in the meantime students have to get involved in their own evaluation. Constructivism encourage self-evaluations allowing student to reflect to their own skill acquisition and peer-review evaluation as a strategy to develop communication and social skills.

An online article by Bates (2012) that in the OCL theory, the teacher plays a key role not as a fellow-learner, but as the link to the knowledge community, or state of the art in the discipline. Learning activity needs to be informed and guided by the norms of the discipline and a discourse process that emphasizes conceptual learning and builds knowledge.

Harasim (2012) emphasizes the importance of three key phases of knowledge construction through discourse: idea generating: this is literally brainstorming, to collect the divergent thinking within a group; idea organizing: this is where learners compare, analyze and categorize the different ideas previously generated, again through discussion and argument; intellectual convergence: the aim here is to reach a level of intellectual synthesis, understanding and consensus (including agreeing to disagree), usually through the joint construction of some artifact or piece of work, such as an essay or assignment.

Brookfield (2017) said that when teaching reflectively, instructors think critically about their teaching and problem-solve for solutions to recurring issues, rather than relying on unchanging, established personal norms. This critical analysis can draw on a variety of sources: lays out four crucial sources, including “students’ eyes, colleagues’ perceptions, personal experience, and theory and research.” Instructors can use a variety of tools and approaches to learn from these sources and reflect upon their teaching, ranging from low-key to formal, and personal to inter-collegial.

Jackson (2014) opined that the globally focused science classroom is a powerful place for students to explore the implications of these worldwide problems and opportunities. Globally focused teachers create a place where students learn science from interdisciplinary and global perspectives. Using a science curriculum with global case studies engages students in problem-based learning tasks and scientific investigations founded on research in scientific literature. Empowered by a global science curriculum, students investigate complex biological, chemical, physical, earth, environmental, and human systems, recognize and consider the power of divergent perspectives, communicate about science effectively with diverse audiences around the world, and translate their scientific ideas and findings into actions that make a difference in their local community and the world. In globally focused schools, students explore the language, symbols, tools, technologies, and processes of science inquiry and literacy as the foundation for understanding and advancing science knowledge. Science inquiry shows students how to initiate the inquiry, design and conduct experiments, present and analyze data, interpret results, and draw conclusions. Science literacy teaches them how to discuss a science-related issue, put the issue into context, conduct research, develop and support a thesis, discuss the implications, and communicate about the work.

In the study of Pascual (2014), the performance of the students in Science, Math and in general in the National Achievement Test (NAT) for the past five years is presented. As shown, URS laboratory school did not participate in NAT on the year 2008 and 2011. It can be seen that from the year 2009 having a general mean of 49.47 which is ranked 10 of the 65 public schools In the Province of Rizal, the ranking of the performance of senior students in the national test elevated to 8th rank in year 2010 with a general mean of 46.43. Using the same Mathematics and Science Curriculum, the ranking of students’ performance elevated to rank 3 for two consecutive school years with mean score performance of 48.16 and 64.59 respectively. All performances are rated to be on the average mastery level. It can also be seen that the scores of the students in Science is declining while the students’ score in Mathematics.

Hamzeh (2014) in his study, he mention that the use of teaching strategies among Mathematics Teachers at the Public schools in Jordon, and its relationships with teachers' gender, experience, and scientific level. A stratified random sample of (75) teachers is drown. To assess the Teaching strategy use, a questionnaire with (51) items is developed. The results showed that the general level of using teaching strategies was moderate, while the level of the behavioral strategies used by the teachers was high; whereas the cognitive and affective strategies were moderate. The results also showed that there were no significant differences ($\alpha \leq 0.05$) in the Teaching strategies use related to teachers' gender, But there were significant differences in the Teaching strategies use related to experience variable in the affective strategies domain in favor of the teachers with less than (5) years experience. The results also showed significant differences in the Teaching strategies use related to scientific level variable in favor of the post graduate teachers. The researcher recommends training mathematics teachers on using the teaching strategies.

Kallay, (2012) executed a study on the effect of the learning strategies and the level of awareness of the beyond knowledge on the academic achievement for university students. The sample consisted of (202) male and female students who study psychology in two different universities in Romania. Weinstein's and others' list (1988) was used for assessing the level of using the learning strategies. The list consisted of (77 items each of which followed by five alternatives. The items are distributed amongst four measurements: skill, desire, motivation, and self-organization. The results showed that the most used strategies by the sample were using metaphoric language, using extra words, organization, logic thinking skills, linking the new knowledge with that stored in memory, and making advantage of the learning aids. Another result was that the strategies most used in learning were as ordered: processing information strategies, teaching aids, self assessment, motivation, worry, concentration, and finally time management.

Johnston, and Ríordáin, and Walshe (2014) cited in his study Ireland's Science and Mathematics performance is well documented and extensively reported in the media and elsewhere. Concern primarily lies with the post-primary students' underperformance in science and mathematics, coupled with a failure to make a successful transition to third level scientifically and mathematically orientated undergraduate courses. The aim of this study was to design, develop, implement and evaluate an integrated approach to the teaching and learning of Science and Mathematics in second level schools in Ireland. The key finding emerging from the data is that the integration of mathematics and science was lost in coping with the technology demands required in implementing the unit of learning.

Synthesis of the Study

The related studies and Literature have been reviewed by the researcher as basis for the development of this study serves as a springboard for the development of survey questionnaire. Likewise, draws ideas and concept in the formulation of conceptual paradigm in order to develop the right directions in the conduct of the studies. With the aid of the reviewed literature and studies, the researcher developed an intervention on strategies/approaches models for teaching based on problems encountered and learner's achievement in mathematics.

Orosa (2014) were all in one that there is a vision and a holistic program of reforms that aims at improving the quality of basic education for every learners and to address the problems faced by mathematics teachers to provides an understanding of the principles and concepts of teaching and learning, and instructional strategies and effectiveness in teaching mathematics.

Kallay (2012) executed a study on the effect of the learning strategies and the level of awareness of the beyond knowledge on the academic achievement for learners, also Jackson (2014), De Guzman (2013), opined that the globally focused mathematics classroom is a powerful place for learners to explore the implications of these worldwide problems and opportunities and that reform strategies instituted in basic education system.

METHODOLOGY

This chapter presents the research design, the research locale, the sample and sampling technique, the instruments, the data gathering procedure, and the statistical treatment of the data.

Research Design

This study made use of the quantitative approach using descriptive research design coupled with survey design. Creswell (2012) defined descriptive research as a type of research that describes and interprets "what is." It reveals conditions or relationships that exist or do not exist, practices that prevail or do not prevail, beliefs or points of view or attitudes that are held or are not held, processes that are going on or otherwise, effects that are being felt, or trends that are developing.

With its many applications, survey research is a popular design in education. As described by (Cresswell, *ibid*) survey research designs are procedures in quantitative research in which investigators administer a survey to a sample or to the entire population of people to describe the attitudes, opinions, behaviors, or characteristics of the population.

This method determined information about the variables often carried out as preliminary step to be followed by researcher employing more vigorous control and more objective methods. Normative survey or studies also serve as direct source of valuable knowledge concerning human behavior.

Samples and Sampling Technique

This study utilized the convenient and purposive sampling technique. Convenient sampling because the respondent were the students of the one who conducted the study. Purposive because it was selected based on the characteristics of the respondents comprises solely taking up education and majoring in physical science.

Research Instruments

The following instruments were used in the study:

1. Survey instrument was developed to identify the strategies/approaches used in teaching Mathematics for BSE-Mathematics 1, teachers' perceptions on selected principles of teaching and learning, identify teaching methods/tools.

The instrument consisted of three parts:

Part I. First part was to identify the strategies/approaches used in teaching Mathematics.

Part III. This parts aims to identify the problems met by the faculty handling Mathematics for BSE-Mathematics 1.

2. Performance of BSE Math I students for the last three years from 2016-2019.

Statistical Treatment

The researcher used the following statistical test to treat the data collected. The data is nominal. Descriptive statistics such frequency, percentage, weighted mean, and t-test of significant difference between two means.

RESULTS AND DISCUSSIONS

Sub-problem No. 1. What are the commonly used strategies and approaches in selected BSE Math I students in terms of:

Table 1 depicts the assessment of the respondents on the commonly used strategies and approaches in teaching Mathematics

Table 11
Respondents' Assessment on the Commonly Used Strategies and Approaches in Teaching Mathematics

Variables	Experts		Faculty		Overall		Rank
	WM	VI	WM	VI	WM	VI	
1. Constructivist Approach	3.97	U	3.98	U	3.98	U	3
2. Collaborative Approach	4.04	U	4.02	U	4.03	U	1
3. Inquiry-Based Approach	3.82	U	3.84	U	3.83	U	5
4. Integrative Approach	3.91	U	3.94	U	3.92	U	4
5. Reflective Approach	4.04	U	4.01	U	4.02	U	2
Overall Mean	3.95	U	3.96	U	3.96	U	

As depicted in the data, all the variables were assessed by the respondents as usually. These are: collaborative approach (WM=4.03) rank 1; reflective approach (WM=4.02) rank 2; constructivist approach (WM=3.98) rank 3; integrative approach (WM=3.92) rank 4; and inquiry-based approach (WM=3.83) rank 5.

Generally, the respondents assessed the commonly used strategies and approaches in teaching Math I students as usually with an overall weighted mean value of 3.96 respectively.

Sub-problem No. 2. Is there a significance difference between the assessments of respondents on aforementioned variables?

Table 2 reveals the significant difference between the assessments of respondents on aforementioned variables.

Table 2
Comparison of Respondents' Assessment on the Commonly Used Strategies and Approaches in Teaching Mathematics

Variables	Experts		Faculty		T test		Decision
	WM	Sd	WM	Sd	t value	Interpretation	
1. Constructivist Approach	3.97	.73	3.98	.43	.424	Not Significant	Accept H _o
2. Collaborative Approach	4.04	.75	4.02	.57	.573	Not Significant	Accept H _o
3. Inquiry-Based Approach	3.82	.82	3.84	.76	.510	Not Significant	Accept H _o
4. Integrative Approach	3.91	.77	3.94	.59	.686	Not Significant	Accept H _o
5. Reflective Approach	4.04	.65	4.01	.83	.796	Not Significant	Accept H _o
Overall	3.95	.74	3.96	.71	.400	Not Significant	Accept H_o

As revealed in the data, constructivist approach with t value of .424; collaborative approach with t value of .573; inquiry-based approach with t value of .510; integrative approach with t value of .510; integrative approach with t value of .689; and reflective approach with t value of .796 are all lower than the critical value of 1.645 with 9 degrees of freedom and interpreted as not significant.

The overall t value of .400 is below the critical value of 2.262 with 9 degrees of freedom. Hence, the null hypothesis is accepted that there is no significant difference between the assessments of experts and faculty respondents.

Sub-problem No. 3. What is the level of performance of BSE-Math 1 for the last three (3) years?

Table 3 gives the level of performance of BSE Math I students in for the last three (3) years?

Given in the data, the BSE Math I students performed satisfactory last school year 2016-2017 with the computed mean percentage score value of 83.14; school year 2017-2018, the learners performed satisfactory with the computed mean percentage score value of 83.19; in school year 2018-2019, the learners performed satisfactory with the computed mean percentage score value of 83.23 respectively.

Table 3
Performance of BSE Math I Students in the Last Three Years

School Year	MPS	Verbal Interpretation
2016-2017	83.14	Average
2017-2018	83.19	Average
2018-2019	83.23	Average
Overall MPS	83.19	Average

Generally, the BSE Math I students had an average performance for the last three years (2016-2019) with total mean percentage score of 83.19.

Sub-Problem No. 4. What are the problems encountered by the faculty in teaching mathematics?

As shown in the table, here are the problems encountered by the respondents: Problems encountered on learners ranked as 1 with an overall weighted mean value of 4.13 and interpreted as usually encountered. Learners' Competency (WM=4.29) as almost always; learners' achievement (WM=4.18) as usually; learners' Mathematical ability (WM=4.13) rank 3; learners' learning readiness (WM=4.13) rank 4; and knowledge on the subject matter (WM=3.92) rank 5.

Table 4
Problems Encountered by the Faculty in Teaching Mathematics

Problems Encountered	WM	VI	Rank
I. On Physical Facilities			
Classroom Availability	4.03	U	1
Conducive Place	3.68	U	2
Faculty Room	3.65	U	3
Overall Mean	3.78	U	3
II. On Learners			
Knowledge on the Subject Matter	3.92	U	5
Learners' Learning Readiness	4.11	U	4
Learners' Mathematical Ability	4.13	U	3
Learners' Competency	4.29	AA	1
Learners' Achievement	4.18	U	2
Overall Mean	4.13	U	1
III. On Subject Matter			
Motivation	4.36	AA	1
Objectives	3.36	S	4
Presentation of Lesson	3.19	S	5
Evaluation	4.10	U	2
Assignment	3.97	U	3
Overall Mean	3.80	U	2
IV. On Administration and Supervision			
Workload	3.76	U	4
Availability of Materials	4.09	U	1
Department Heads' Management of Teachers	3.95	U	2
Work Relationship	3.77	U	3
Conflict	3.57	U	5
Evaluation and Promotion	3.43	U	6
Overall Mean	3.76	U	4

Legend:

Scale	Numerical Value	Descriptive Value
5	4.20 – 5.00	Almost Always (AA)
4	3.40 – 4.19	Usually (U)
3	2.60 – 3.39	Sometimes (S)
2	1.80 – 2.59	Not Often (NO)
1	1.00 – 1.79	Almost Never (AN)

For problems on subject matter with an overall weighted mean value of 3.80 and ranked as 2: motivation (WM=4.36) as almost always; evaluation (WM=4.10), assignment (WM=3.97), objectives (WM=3.36) and presentation of lesson (WM=3.19) as usually.

Thirdly, on physical activities with an overall weighted mean value of 3.78 and interpreted as usually: classroom availability (WM=4.03), conducive place (WM=3.68) and faculty room (WM=3.65).

Lastly, problems encountered on administration and supervision with an overall weighted mean value of 3.76 and ranked as 4: availability of materials (WM=4.09); department heads' management of teachers (WM=3.95); work relationship (WM=3.77); workload (WM=3.76); conflict (WM=3.57); and evaluation and promotion (WM=3.43).

The results showed that the most used strategies by the sample were using metaphoric language, using extra words, organization, logic thinking skills, linking the new knowledge with that stored in memory, and making advantage of the learning aids. Another result was that the strategies most used in learning were as ordered: processing information strategies, teaching aids, self assessment, motivation, worry, concentration, and finally time management.

Sub-problem No. 5. Based on the findings, what intervention may be recommended?

An intervention is something that comes between things or something that changes the course of something. In this case, the intervention addresses the problems met by the BSE Math I teachers with the following features: Output Title; Introduction; Rationale; and the Matrix of Intervention with its component presented through key areas, areas needs to address, intervention measures and outcomes and its impact to the school in general and specifically to the learners, teachers and administrators.

OUTPUT TITLE: STRATEGIES AND APPROACHES IN TEACHING MATHEMATICS FOR BSE MATH I STUDENTS

Introduction

Mathematics being a compulsory subject, access to quality mathematics is every child's right. To conform to this right, teachers need to deliver the curriculum using and utilizing appropriate approaches(s). Likewise, it is expected to address learners' competence, learners' achievement in enhancing mathematical ability.

As the researcher's desire to deliver quality teaching mathematics, approaches have been identified based on the findings of the study, developed an intervention measures and categorized into: key areas, identified problem that need to address, and the intervention measures.

After identifying what needs to be addressed administrators should come up with a strategic leadership (in which only he/she knows what is best for the school). Teachers on the other hand, must learn strategic teaching as a way of making decisions about a course, an individual class, or even an entire curriculum, beginning with an analysis of key variables in the teaching situation.

Rationale

The proposed intervention aims to minimize the problems met by the teachers of junior high and this will address the:

1. Concerned of the BSE Math I program on learners, the subject matter, physical facilities, the problems on administration and supervision.
2. To enhance learner's competence and achievement in mathematics to make them motivated in doing the task prescribed by the faculty.
3. Provide faculty and administrators output of the study and apply their individual skills in taking action based on the matrix and action to be taken.

Table 5
Intervention Matrix

Key Areas	Need to Address	Intervention Measures	Outcomes & Impact
LEARNERS	<p>Learners' competence to improve mathematical ability and achievement through appropriate materials in the following approaches:</p> <ul style="list-style-type: none"> ○ CONSTRUCTIVISM APPROACH Thinking Skills (RFMD Activity) ○ COLLABORATIVE APPROACH On-line Collaborative (CPFM) Jigsaw Method (TDAR Activity) ○ INQUIRY-BASED APPROACH Project Making Experiment Field Study ○ INTEGRATIVE APPROACH Thematic Teaching Generic Competency Mode ○ REFLECTIVE APPROACH Journal Writing <p>Learner's learning readiness of the subject matter.</p>	<p>Teachers should:</p> <ul style="list-style-type: none"> ○ Emphasize conceptual understanding over procedure ○ Encourage questioning and make space for curiosity ○ Provide rich contexts in math classroom <p>Build confidence among BSE-Math by:</p> <ul style="list-style-type: none"> ○ realize the depth of knowledge they already possess and ○ increase their pride in their work and the effort they put into learning math 	<p>Organized INSTRUCTIONAL PROGRAM</p> <p>applied the following strategies in teaching mathematics: Constructivist, collaborative, inquiry-based, integrative and reflective approaches</p> <p>Improved performance in Mathematics</p> <p>Integrated Activities focus on more than one skill or subject matter through one exercise or activity.</p>
SUBJECT MATTER	<p>The subject matter taught by the faculty should be motivating, giving of assignment be based on objectives and evaluation</p>	<p>Faculty should:</p> <ul style="list-style-type: none"> ○ Enrich lesson in both content and methodology ○ Identify students and provide activity depending on knowledge skills and attitudes at different times, rates and ways ○ Evaluative materials be used as pedagogy dulls the faculty mathematics activity. ○ use exercises to discover what learners do and don't 	<p>Provided enjoyable, important and meaningful mathematics which engage every BSE-Math in class.</p> <p>Developed materials that students will actively construct or make their own knowledge basing upon experiences of the learners.</p> <p>Facilitated assessment through the Rubrics</p> <p>Applied the constructivist approach</p>
PHYSICAL FACILITIES	<p>Teaching and learning is a complex process which requires appropriate preparations in both content and methodology, dean should look into:</p> <ul style="list-style-type: none"> ○ Classroom Availability ○ Conducive Place ○ Faculty Room 	<p>Administrators should:</p> <ul style="list-style-type: none"> ○ Provide a separate classrooms in mathematics with classroom materials ○ Provide a conducive faculty room to allow faculty to work well 	<p>Identified and made available to the learners a conducive classroom in mathematics allowing students to encourage, ask questions and share ideas</p> <p>Encouraged students to explore mathematical materials thereby emphasizing student's role in the learning process.</p>

<p>ADMINIS-TRATION and SUPER-VISION</p>	<p>Mathematics education relies heavily on the preparation of the teachers and needs to look into:</p> <ul style="list-style-type: none"> ○ Availability of Materials ○ Management of faculty ○ Work Relationship ○ Workload ○ Conflict with faculty 	<p>Administrators should:</p> <ul style="list-style-type: none"> ○ Development of professional and interpersonal relationship among faculty to address issues on management of teachers by the department heads, workloads, work relationship ○ Using of funds to provide teaching materials needed by the faculty Avoid conflict with teachers 	<p>Improved professional and interpersonal dealing with faculty by the dean</p> <p>Developed a reflective approach leadership of dean for better teaching-learning outcomes.</p>
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CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Based on the findings of the study, the conclusions derived are:

1. The strategies/approaches usually used by the faculty in teaching mathematics
2. The assessment of respondents is not differ on the strategies/approaches in teaching mathematics in terms of constructive approach, collaborative approach, integrative approach, inquiry based approach, and reflective approach.
3. The performance level of BSE-Math 1 in mathematics was average for the last three years.
4. There are problems encountered which should be addressed to be able to meet their responsibility in planning, implementing and assessing the learners and to be equipped with skills in handling the subjects.
5. Intervention is proposed to enhance and upgrade the faculty in teaching mathematics using the different strategies and approaches.

Recommendations

Based on the findings and conclusions, the following recommendations are:

1. Identify the best strategies/methods/practices utilize by faculty in teaching mathematics.
 1. Problem identified and pinpointed would require much attention and solution.
 2. Administrators through their faculty may come up with a common plan to address the low achievement result of the learners in mathematics.
 3. Allow faculty to attend seminars, training, and exposure in the available online sources that may help faculty address and improve their needing concerns in teaching mathematics subject.
 4. Testing the effectiveness of the modern teaching strategies produced by the educational literature in the teaching – learning situations on different samples.

5. Holding specialized courses for mathematics teachers and encourage them to use the different teaching strategies, especially the cognitive and the effective ones.
6. Future researcher may conduct related studies on the strategies used by faculty in other school subjects.

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ANTAS NG KABISAAN NG PAGGAMIT NG MULTIMEDIA BILANG KAGAMITANG PAMPAGTUTURO

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PANIMULA

Tradisyon na makikita sa loob ng klasrum, ang guro ay nasa harap ng mga estudyante nagpapaliwanag, nagbibigay ng impormasyon o nagbibigay ng instruksyon ng mga aralin. Karaniwang gamit ang tsok at blakbord para isulat ang mga ito. Ang mga tradisyunal na gamit panturo ay blakbord, aklat, tsarts, larawan, poster, mga kagamitan pamtuturo tulad ng laruan gamit sa laboratory. Ang mga pamamaraan sa pagtuturo at mga kagamitang pamtuturo ay kailangan nang baguhin hinggil sa pag-unlad at pagbabago ng teknolohiya.

Ang mga guro sa ngayon ay gumagamit na nang iba't ibang teknolohiya sa pagtuturo. Ang pagagamit ng bagong teknolohiya ay makakatulong na makapagbigay sa mga guro ng opotunidad na magawang maging masigla, maging magaan at makagangyak ito sa kawilihan ng ang mga mag-aaral sa kanilang pagkatuto (Abad at Ruelas 2011), . Ilan sa modernong kagamitan pampagtuturo ay ang kompyuter, telebisyon, laptops, e-book at ang multimedia.

Ang multimedia ay isa sa mga karaniwang ginagamit ng mga guro sa pagtuturo. Sinasabi na ang multimedia ay ang pinagsama-samang mga porma ng paglalahad o pakikipag-ugnayan sa isang tao sa pamamagitan ng mga digital na pamamaraan . (Braidly.ph, 2017) maarii itong mahawakan at hindi tulad ng hypertext, animasyon, tunog, mga video clips, at grapikong sining. Ito rin ay dinisenyo upang mapagaan ang proseso ng pagtuturo at pagkatuto. Sa pamamagitan nito, nagiging kapanapanabik, nakakagangyak at natutulungan ang mga mag-aaral na matuto sa makabagong paraan . makikita rin ng mga gumagamit ng multimedia ang totoong mundo na gusto ng mga mag-aaral.

Sa ngayon isa pinakamahalagang inobasyon sa larangan ng edukasyon ang paggamit ng multimedia upang mapa unlad ang proseso at produkto ng pagtuturo at pagkatuto.

Kaya't nilalayon ng pananaliksik na ito na matukoy ang antas ng kabisaan sa paggamit ng multimedia sa pagtuturo sa EARIST Cavite.

METODOLOHIYA

Ang mananaliksik ng gumamit ng deskriptibong pamamaraan / paraan upang ilarawan ang mga katugunan ng mga kalahok sa paggamit ng multimedia bilang kagamitan pampagtuturo. Gumamit ang mananaliksik ng random sampling sapagpili ng kanyang mga kalahok sa pamamagitan ng fish bowl Teknik upang mapili ang mga tutugon sa pananaliksik na ito.

Gumamit naman ang mananaliksik ng batayan upang mabigyan ng interpretasyon ang antas ng kabisaan ng paggamit multimedia ng mga guro.

Interprtasyon	Pagitan
Napakabisa	4.20 – 5.00
Mabisa	3.40 – 4.19
Di gaanong mabisa	2.60 – 3.39
Di mabisa	1.80 – 2.59
Lubusang di mabisa	1.00 – 1.79

ANG PAGLALAHAD AT RESULTA NG PAG-AARAL

Inilahad ng pananaliksik ang nakalap na mga datos, na binigyan ng pagsusuri at interpretasyon. Inilahad ang mga datos sang-ayon sa pagkakasunod-sunod ng mga suliranin.

1. Gaano kadalas ang paggamit ng multimedia bilang kagamitan pampagtuturo?

Talahanayan 1
Bilang ng Dalas ng Paggamit ng Multimedia ng mga Guro

Araw / Linggo	Bilang ng mga Kalahok	Bahagdan
1 beses/linggo	0	0%
2 beses / linggo	8	25%
3 beses/linggo	24	75%
Kabuuan	32	100%

Makikita sa talahanayan bilang 1 na ang resulta ay mahigit sa kalahati ng mga kalahok o may katumbasan bilang 24 na guro o kalahok o may 75% ,ang nagsasabi na ginagamit ang multimedia bilang kanilang kagamitan pampagtuturo ng may 3 beses sa loob ng isang linggo.Samantalang may 8 kalahok na may katumbasan na 25% sa kabuuan ang nagsasabi ginagamit nila ang multimedia ng 2 beses sa loob ng 1 linggo at walang guro ang gumagamit ng 1 beses sa loob ng 1 linggo o di kaya'y di gumamit ng multimedia sa pagtuturo.

2. Anong mga uri ng multimedia ang gamitin ng mga guro batay sa:
 - 2.1 Teksto;
 - 2.2 Imahen;
 - 2.3 Audio;
 - 2.4 Videos; at
 - 2.5 Animasyon?

Talahanayan 2
Mga Anyo ng Multimedia na Ginagamit ng mga Guro

Anyo ng Multimedia	Bilang ng mga kalahok	Bahagdan
Teksto	13	40.62%
Imahen	4	12.5%
Audio	5	15.62%
Video	8	25%
Animasyon	2	6.25%
Kabuuan	32	100%

Makikita sa talahanayan 2 na 13 guro na may katumbas 40.62% ang gumagamit na multimedia at teksto.Samantalang may 8 o may katumbas na 12.5% guro naman ang gumagamit ng video. Lima sa mga kalahok ang gumagamit ng audio na may katumbas na 15.63% .Samantalang apat (4) naman o maya katumbas na 12.5% ang gumagamit ng imahen. At 2 lamang sa mga kalahok na may katumbas na 6.25% ang gumagamit ng animasyon bilang pamamaraan panturo.

3 Ano antas ng kabisaan ng paggamit ng multimedia bilang kagamitan pampagtuturo batay sa:

- 3.1 Motibasyon;
- 3.2 Interes; at
- 3.3 User-friendly?

Talahanayan 3

Antas ng Kabisaan ng Paggamit ng Multimedia Bilang Kagamitan Pampagtuturo

Kraytirya	Weighted Average	Antas
Motibasyon	4.32	Napakabisa
Interes	4.31	Napakabisa
User - friendly	4.45	Napakabisa

Makikita sa talahanayan 3 na ang motibasyon may weighted average na 4.32 na may interpretasyon na napakabisa. Ang interes naman ay mayroon weighted average na 4.31 na may interpretasyon na napakabisa rin. Samantala ang user-friendly ay may weighted average na 4.45 na pinakamataas na may intrpretasyon din napakabisa.

Sa pangkalahatan resulta ng mga datos na ipinakita na ang kabisaan ng paggamit ng multimedia bilang kagamitan pampagtuturo ay nagpapakita ng napakataas na antas. Ipinakita lamang nito ang ang paggamit ng multimedia ay kailangan sa mas mabisa pamamaraan ng pagtuturo ng mganguro.

KONKLUSYON

Sa mga natuklasan sa pananaliksik nabuo ang mga sumusunod na konklusyon

1. Mahigit na kalahati sa mga guro ang gumagamit ng multimedia bilang kagamitang pampagtuturo na 3 beses sa loob ng isang linggo.
2. Ang pinaka ginagamit na anyo ng multimedia ng mga guro sa kanilang pagtuturo ay teksto, pumapangalawa ang video at pangatlo ang imahen at audio at huli ay animasyon.
3. Ang antas ng kabisaan ng multimedia bilang kagamitang pampagtuturo bilang user-friendly, interes at bilang motibasyon ay napakabisa.

REKOMENDASYON

Batay sa natuklsan at nabuong konklusyon iminumungkahi ng mananaliksik ang mga sumusunod:

Sa mga guro at mag-aaral. Dapat gamitin ang multimedia bilang bahagi ng bilang kagamitan pampagtuturo at pagkatuto.

Sa mga paaralan. Dapat maglaan ng mas marami pang multimedia para maitaas ang kalidad ng pagtuturo at pagkatuto.

Sa mga susunod na mananaliksik. Mabigyan pa ito nang malalim na pag-aaral dahil ito rin makapagbibigay ng malaking opotunidad na malaman ang kabisaan ng paggamit multimedia bilang kagamitang pampagtuturo.

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THE IMPACT OF SOCIAL MEDIA TO THE PRODUCTIVITY OF CALL CENTER AGENTS IN THE PHILIPPINES

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INTRODUCTION

A call center agent is a person who handles incoming or outgoing calls for a business, a call center agent might handle account inquiries, customer complaints or support issues. While call center is an office setup to handle a large volume of telephone calls, especially for taking orders and providing customer service.

Call center began in the Philippines as providers of emails response and managing services, then broaden to industrial capabilities for almost all types of customer relations, ranging from travel services, technical support, customer care, financial services, online business-to-business support. The call center industries one of the fastest growing in the country.

The Philippines is also considered as allocation of choice, due to its less expensive operational cost and labor cost, and a constant stream of college-educated graduates entering, the already mostly young work force. The Filipino people also generally show proficiency in American style English as well as slang, and a strong familiarity with U.S and European cultures, Today Philippines remains a top business process outsourcing BPO destination for the estimated \$150 Billion BPO Industry.

New graduates like to call it a stepping stone to a better career, while other set it as a glorified phone operator job. No matter what people think about the call center industry. There is no doubt that it has been a sector that helped boost the local economy and has put our country back on the global trading map. Call center in the Philippines offer a 24/7 multilingual and multimedia supported premium services for marketing, sales, customer care, crisis management, investor relations, and other key business applications. It is considered as the sunshine industry of the Philippines today because of the opportunity it gives to the new and post graduate and the salary it can offer.

The call center industry has come a long way since it firstly introduced in the year 2001. Just over a decade later, it was noticed the exponential growth of sector, making it one of the top chief economic drivers in this country, currently employing 770,000 people with total revenue expected to reach \$6 billion. Today the Philippines is the world's leading call center destination, beating out India, while manila was just named the world's top BPO destination. (Tholons, 2013)

Apart its economic and social contributions to the economic growth of the country, call center industry has been proven a good avenue in harnessing one's communication and thinking skills. It allows them to be more comfortable in speaking the English language with confidence.

STATEMENT OF THE PROBLEM

This study aims determine how social media affect the productivity of a call center agent in Manila.

Specifically, it seeks to answer the following questions:

1. What are the common social media sites used by the respondents?
2. How many hours spent/extend by the respondents in social media
3. How do the respondents perceive the social media in terms of:
 - 3.1 Purposes;
 - 3.2 Importance; and
 - 3.3 Effects?
4. Is there a significant relationship between respondents profile and the use of social media that affect their productivity?

SIGNIFICANCE OF THE STUDY

Basically, call center works need the knowledge about the products and services of the company. However, call center agents are evaluated to quantify their performance. Quality assurance guarantees that every call center agent gives their outmost knowledge about the product and services of the company.

Call Center Agents - this study is very important because the researchers gave light to those people who are already employed as call center agents and those who want to try their luck to succeed in this industry. This research will serve as a ground for call center agents to aim for higher positions and be successful in the endeavor they had chosen.

BPO Company– this study will help BPO Company as a reference for their research once they make o do a rules and regulations.

Researcher- will likewise be benefitted because this study gave true and correct information that they need to know based on call center agents' experiences and the grade evaluation systems used by most call center companies.

School – it could give seminars and trainings to students, and to those interested employees to join and be part of call centers, for them to be equipped with knowledge about the nature of work of call center agents.

Future researchers- are challenged to search topics, which are about the present research, to be able to give more sufficient knowledge to the readers.

SYNTHESIS OF RELATED LITERATURE AND STUDIES

The review of related literature and studies manifest great similarities to present research that reflects the same data and inputs as to the density and gravity of the frequency and quantity of how social media affects the productivity of a call center agent in Manila City.

According to Levin (2015) while many call center professionals are tired of the hype surrounding social media's impact on customer care, there is no denying that our industry is facing a game changer.

Barnes (2014) stated that as the primary customer touchpoint for most organizations, the call center is the obvious choice for taking charge of and carrying out an enterprise's social media strategy. But experts agree that most centers have much to learn if they hope to harness the potential power of social media and drive customer advocacy rather than complaints online.

Rappler (2015) stated that if social media used correctly, it can increase your chances of getting hired. It can help you market yourself by allowing you to display your work portfolios. It can help boost your professional visibility when you proactively connect with groups and communities in career networking sites.

Further, as a researcher of this study we found out the similarities of various studies about social media affecting the productivity of a call center agent in Quezon City. they introduce that this problem is very difficult to solve because of so many applications that is new and accessible to everyone.

As cited by Kisiel (2013) employee satisfaction following simple logic that by performing the job well and providing high quality service to satisfied customers, even the agents will be satisfied with themselves and at the same time their job. Most call centers tend to miss the link 'between employee satisfaction, service quality, customer satisfaction and profitability'.

As cited by LeBlanc (2013) although employee turnover appears to be the most recognizable outcome of job dissatisfaction, call center workers report other disabling attributes related to their job.

According to Bautista (2014) motivation starts from one's self. The following are some tips to keep motivated: positive thoughts, be confident, maintain focus, set a specific goal, and have a role model or mentor. Think positive and bear in mind that nothing is impossible, be confident and do not be afraid to sell, focus on the job, have a realistic goal to achieve or a path set as guidance, and look up to someone and follow his or her steps or accomplishments.

METHODOLOGY

This study introduces the method of research, sources of information and data gathering procedures that serve as the guide of the researchers in doing this study.

This study uses the descriptive method in gathering the information the factors that affects the Employees satisfaction and retention. The descriptive method describes the real-life experiences of call center agents and how Social Media affect their productivity within the working area. Furthermore, this involves the collection of data in order to test the hypothesis and to answer the questions concerning the factor affecting the Employees Productivity.

RESULTS AND DISCUSSION

Sub-problem No. 1 what are the common social media sites used by the respondents?

Table 1 shows that Facebook is the most visited social media site by the respondents with a weighted mean of 4.94. The social media site YouTube is the second most visited with a weighted mean of 4.82. Next, the third most visited social media site is Twitter with a weighted mean of 4.30. Instagram is the fourth most visited social media site with a weighted average of

4.16. Google+ is the 5th most used social media site with a weighted mean of 1.52. The 4th and the 5th social media site that is most visited weighted means are greatly distant from each other with a large difference of 2.64. The 5th-8th most visited social media sites are rarely used by the respondents. The remaining social media sites are Tumblr, Pinterest, and Myspace respectively. The weighted mean of Tumblr, Pinterest, and MySpace are 1.18, 1.16, and 1.02 respectively.

Table 1
Common Social Media Visited by the Respondents

Social Media	Weighted Mean	Verbal Interpretation	Rank
Facebook	4.94	Extensively	1
Twitter	4.30	Rarely	3
Instagram	4.16	Rarely	4
Youtube	4.82	Extensively	2
Tumblr	1.18	Not at all	6
Myspace	1.02	Not at all	8
Google+	1.52	Frequently	5
Pinterest	1.16	Not at all	7
Average Weighted Mean	2.89	Sometimes	

Sub-problem No. 2. How many hours spent/extend by the respondents in social media?

Based on Table 2 presented below, most of the respondents spend less than 5 hours in visiting social media, with a weighted mean 4.56. More than 6-12 hours spent in visiting social media by a number of respondents with a weighted mean 1.48.

Table 2
Time Spent in Visiting Social Media

Time Spent	Weighted Mean	Verbal Interpretation	Rank
More than 6-12 hours.	1.48	Extensively	2
Less than 5 hours.	4.56	Not at all	1
Average Weighted Mean	3.02	Sometimes	

Sub-problem No. 3. How do the respondents perceive the social media in terms of?

3.1 Purposes

Table 3
Respondents' Perception on Social Media in Terms of Purpose

Purpose	Weighted Mean	Verbal Interpretation	Rank
1. It offers you an enjoyable habit you like to do.	4.68	Extensively	1
2. It gives you something else to think about other than your own problems.	4.32	Rarely	2.5
3. It offers entertainment.	4.32	Rarely	2.5
4. To meet new people.	3.20	Rarely	5
5. It helps you to find something to buy.	1.18	Extensively	6
6. It helps you carry details information about current issues and events.	4.00	Rarely	4
Average Weighted Mean	3.62	Rarely	

As reflected in Table 3 it shows that social media has a purpose in our needs. Enjoyable habit with a weighted mean 4.68. Respondents give something else to think about other than their own problems and entertainment with a weighted mean 4.32. And helps their carry details information with a weighted mean 4.00. The 5th rank has a weighted mean 3.20. Respondents think that social media work to find something to buy with a weighted mean 1.18.

3.2 Importance

Table 4
Respondents' Perception on Social Media in Terms of Importance

IMPORTANCE	Weighted Mean	Verbal Interpretation	Rank
1. Helping you to learn something new.	4.90	Extensively	1.5
2. Helping you to do your homework.	3.64	Rarely	4
3. Updated you on what is happening in your area.	4.22	Rarely	3
4. Helping you to provide a convenient way to shop.	3.52	Rarely	5
5. Helping you comparing prices.	3.42	Sometimes	6
6. To help communicate your families and friends.	4.90	Extensively	1.5
Average Weighted Mean	4.10	Rarely	

Table 4 explains that social media help students to learn something new and to communicate to their families with a weighted mean 4.19. On the 3rd rank they updated what's happening to their area with a weighted mean 4.22. Helping to their homework's with a weighted mean 3.64. Respondents think it can help provide a convenient to buy with a weighted mean 3.52. And it can help to update about the prices with a weighted mean 3.42.

3.3 Effects

Perceived in Table 5, Respondents' Perception on Social Media in Terms of Effects, too much using social media agents affects their performance, and distracting to do their activities with a weighted mean 4.34. Using social media can use cyber bullying with a weighted mean 3.78. And it lowers to motivational level of the agents with a weighted mean 3.50. The 6th rank has a weighted mean 3.08. Increasing popularity of social media sites, like Facebook and twitter with a weighted mean 2.90. Mainly rely on technology and the internet

instead of learning the practical knowledge of everyday life with a weighted mean 2.58. Down site of the social media is that the user/students shares too much information which make post treats to them with a weighted mean 1.90. Sometimes students shares photos on social media that contains violets and sex which can damage the behaviour of students with a weighted mean 1.78.

Table 5
Respondents' Perception on Social Media in Terms of Effects

Effects	Weighted Mean	Verbal Interpretation	Rank
1. Distracting you to do your activities.	4.34	Rarely	1.5
2. Can't go to work early because of sleepless night by using social media sites.	3.58	Rarely	4
3. Increasing popularity of social media sites, like Facebook and twitter.	2.90	Sometimes	7
4. Social media leads to addictions.	3.08	Sometimes	6
5. It lowers to motivational level of the users.	3.50	Rarely	5
6. Mainly relay on technology and the internet instead of learning the practical knowledge of everyday life.	2.58	Sometimes	8
7. Sometimes agents shares photos on social media that contains violence and sex which can damage the behaviour of social media users.	1.78	Frequently	10
8. Down site of the social media is that the user shares too much information which makes post treats to them.	1.92	Frequently	9
9. Using social media can cause Cyber Bullying.	3.78	Rarely	3
10. Too much using social media can directly affects the performance of a Call Center Agents.	4.34	Rarely	1.5
Average Weighted Mean	3.18	Sometimes	

4. Is there a significant relationship between respondent's profile and the use of social media that affect their productivity?

The performance of Call Center Agents registered correlation, there is a significant relationship ($r = 9.33$). All the findings indicate that Facebook activities affect the performance of Call Center Agents.

CONCLUSIONS

After applying the appropriate statistical tools on the data gathered and analyzing the results, the findings were revealed. In relation with this, the researchers had formulated the following conclusions:

1. In terms of demographic profile of the call center agents most of the respondents were at the age bracket of 21-30, The longer the agents exposed to Facebook the more they are engaged in the Facebook activities that leads to addiction.

2. Exposure to Facebook activities is an effective tool in developing and enhancing the knowledge, skills, attitudes of the call center agents through which improve his performance and social life.

3. Facebook activities can help Call Center Agents gain more information and develop their personality in dealing with people.

4. Social media is now a vital part of life specifically the Facebook. For many of the students there is little or no "down time." Some have difficulty disengaging from their social life. For some, it even raises their anxiety level to be without their cell phones or any gadgets for a few hours that will keep them in touch with Facebook.

RECOMMENDATION

By the given findings and conclusions of the study, the following recommendations are drawn:

Based from the conclusions drawn, the following are hereby recommended:

1. The BPO Company should provide more computers and free internet access to Call Center Agents so as to equip them in proper usage of internet.

2. The BPO Company should encourage the Call Center Agents to engage more on their work related activities.

4. A monitoring system should be made to track down the Agents performance progress and their social life activities.

5. The intervention program should be implemented to improve the performance of Call Center Agents.

6. Call Center Agents must learn how to use Facebook significantly. The ever-growing technology helps us make our life easier and better but we must be sure that we should treat it with moderation.

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DEVELOPMENT AND VALIDATION OF INSTRUMENT FOR CAREER CHOICE OF SELECTED SENIOR HIGH SCHOOL STUDENTS

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INTRODUCTION

This study, Development and Validation of an Instrument for Career Choice aimed at finding out which of the factors greatly influence one's decision of a career choice which may impact his/her scholastic performance.

According to Gordon (2007) and Osipow (1987), career-decision readiness mainly results from cognitive and emotional ability to make progress and from consistency between self-information and selected career choice. Scholars have recognized the importance of parents, influential others, professional prestige, and future earnings to Asian students' major choice (Y.Ma, 2009; P.-W.W. Ma & Yeh,2005).

Career planning is life goal-setting. Without such a plan, it is like making a journey to an unfamiliar destination without a map. He proposed a Career Planning Guide that will help the students in choosing their appropriate course from planning stage, steps in planning a career, goal-setting, and self-understanding (Elmer, 1989).

Factors that shape the choice of college major generally belong to one of four broad categories: personal, career, others', and institutional preferences (Lee & Lee, 2006).

The study conducted by Siguan, Jr. (1994) found out that the students self-concept showed no significant influence on their career preferences.

The study, Chen Ning Liao and Chang-Ho Ji (2014) the origin of major choice, academic commitment, and career-decision readiness among Taiwanese college students, aimed to examine if and how career-decision readiness relates to the origin of college major choice among Taiwanese college students. A total of 375 junior and senior college students (147 women, 228 men) responded to measures of college major choice, academic commitment, career self-efficacy, and career-decision readiness. Results indicated that students' academic commitment to a college major tend to increase when they choose their majors based on personal and career preferences.

At the Cavite Campus of Eulogio 'Amang'Rodriguez Institute of Science and Technology or known as EARIST Cavite Campus, this certain problem has been persistent over years. Since the time of its operation in the early 1980's, several students have fallen to the list of drop-outs. From that time onwards, no initiatives have been done to address the problem until this study was conducted toward this end.

It has been a consistent problem of school administrators and the government this rising number of college students who dropped from their classes at any time of the academic semester. On account of this issue, inconsiderable sums of money have been wasted especially in the state colleges wherein the costs of education of the students enrolled are subsidized by the government. A great amount of revenues have been allocated to fund and maintain these subsidies and maintain their costs of operation. In trying to contemplate on this issue, the researchers were prompted to look into the root cause of drop-outs.

Statement of the Problem

This study aimed at developing and evaluating a scale or instrument which is used to measure the intensity of the factors that may influence the career choice of a student. Thus, the objectives of this study are (1). To develop the evaluation on the intensity of the following factors influencing the career choice of a student: A. Parents B. Media C. Personal D. Friends E. Indecisiveness; and (2). To determine the validity and reliability of career choice instrument.

Any research based on measurement is tested as to whether the collection of items in the test contents yield interpretable statements about individual differences, yet are still accurate and dependable or what is called as valid and reliable. The reliability coefficient shows that the test construction is good and therefore acceptable. For the investigators who regard reliability as a pale shadow of the more vital shadow of validity cannot avoid considering the reliability of their measures. To quote what Lord Kelvin, 19th century physicist said, if you can measure what you are speaking about and express it in numbers then you know something about it; otherwise your knowledge is meager and unsatisfactory. In research, no validity coefficient and no factor analysis can be interpreted without some appropriate estimate of the magnitude of the error of measurement (Cronbach, 1951). The Spearman-Brown formula is then applied to get a coefficient similar to the correlation between two forms. The Split-half Spearman-Brown procedure has been a standard method of test analysis for over the years.

Validity

The definition of validity has undergone several changes. Validity test is divided into three types: criterion related, content, and construct validity (Creswell, 2005). Content validity was used in the current research to measure how well the questions represent the possibilities of questions available. Experts in the building construction subject (BCS) were employed to evaluate the content validity of the questions. Construct validity used the Rasch model to determine whether the scores of an instrument are significant, meaningful, useful, and purposive. Three misfit patterns were considered in the construct validity of the measured item: point measure correlation (PtMea Corr) and infit and outfit mean square (MNSQ). Point measure correlation was carried out on each item in the research instruments to test whether all items move in one direction with the construct. Index in the positive range indicates that the measured items are parallel to the construct (Siti Rahayah et al., 2010). The infit (internal validity) and outfit (external validity) MNSQ of each item and the respondent should be within the range of 0.60 to 1.40 (Bond & Fox, 2007).

Content validity is the extent to which the questions on the instrument and the scores from these questions represent all possible questions that could be asked about the content or skill (Creswell, 2005).

Reliability

The extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, the research is considered to be reliable (Joppe, 2000). The idea behind reliability is that any significant results must be more than a one-off finding and be inherently repeatable.

Other researchers must be able to perform exactly the same experiment, under the same conditions and generate the same results. This will reinforce the findings and ensure that the wider scientific community will accept the hypothesis. Without this replication of statistically

significant results, the experiment and research have not fulfilled all of the requirements of testability. This prerequisite is essential to a hypothesis establishing itself as an accepted scientific truth.

For example, if you are performing a time critical experiment, you will be using some type of stopwatch. Generally, it is reasonable to assume that the instruments are reliable and will keep true and accurate time. However, diligent scientists take measurements many times, to minimize the chances of malfunction and maintain validity and reliability. At the other extreme, any experiment that uses human judgment is always going to come under question. If observers rate certain aspects, like in Bandura's Bobo Doll Experiment, then the reliability of the test is compromised. Human judgment can vary wildly between observers, and the same individual may rate things differently depending upon time of day and current mood.

This means that such experiments are more difficult to repeat and are inherently less reliable. Reliability is a necessary ingredient for determining the overall validity of a scientific experiment and enhancing the strength of the results.

Reliability estimates are used to evaluate (1) the stability of measures administered at different times to the same individuals or using the same standard (test-retest reliability) or (2) the equivalence of sets of items from the same test (internal consistency) or of different observers scoring a behavior or event using the same instrument (interrater reliability). Reliability coefficients range from 0.00 to 1.00, with higher coefficients indicating higher levels of reliability. Stability of measurement, or test-retest reliability, is determined by administering a test at two different points in time to the same individuals and determining the correlation or strength of association of the two sets of scores.

The same process may be used when calibrating a medical measurement device, such as a scale. The timing of the second administration is critical when tests are administered repeatedly. Ideally, the interval between administrations should be long enough that values obtained from the second administration will not be affected by the previous measurement (e.g., a subject's memory of responses to the first administration of a knowledge tests, the clinical response to an invasive test procedure) but not so distant that learning or a change in health status could alter the way subjects respond during the second administration. Internal consistency gives an estimate of the equivalence of sets of items from the same test (e.g., a set of questions aimed at assessing quality of life or disease severity).

The coefficient of internal consistency provides an estimate of the reliability of measurement and is based on the assumption that items measuring the same construct should correlate. Perhaps the most widely used method for estimating internal consistency reliability is Cronbach's alpha. Cronbach's alpha is a function of the average inter-correlations of items and the number of items in the scale.

It is used for summated scales such as quality-of-life instruments, activities of daily living scales, and the Mini Mental State Examination. All things being equal, the greater the number of items in a summated scale, the higher Cronbach's alpha tends to be, with the major gains being in additional items up to approximately 10, when the increase in reliability for each additional item levels off. This is one reason why the use of a single item to measure a construct is not optimal. Having multiple items to measure a construct aids in the determination of the reliability of measurement and, in general, improves the reliability or precision of the measurement.

Interrater reliability (also called inter-observer agreement) establishes the equivalence of ratings obtained with an instrument when used by different observers. If a measurement process involves judgments or ratings by observers, a reliable measurement will require

consistency between different raters. Interrater reliability requires completely independent ratings of the same event by more than one rater. No discussion or collaboration can occur when reliability is being tested. Reliability is determined by the correlation of the scores from two or more independent raters (for ratings on a continuum) or the coefficient of agreement of the judgments of the raters. For categorical variables, Cohen's kappa is commonly used to determine the coefficient of agreement.

SIGNIFICANCE OF THIS STUDY

This study was conducted for the following persons/people, and agencies to discover which of the adhering factors have a strong influence on the student's career choice:

Researcher. To utilize the research in search for the solutions that causes the drop-outs of students in her school.

Students. Through this study, the students would gain more insights in the proper career choice to enjoy schooling and utilize their God-endowed talents to the fullest.

Academic Educators and Institutions. To achieve their ultimate objectives of giving extra time and budgetary allotment for programs that will subdue if not eradicate number of drop-outs.

Government Agencies. This is useful to government agencies such as the Commission on Higher Education and department of Budget Management for a better allocation of funds for scholarships.

Country. Knowing the root cause of drop-outs, will enable the administration save money and instead allocate funds to promote developmental growth in other agencies to elevate living standards of its people.

RESEARCH METHODS

The study uses Descriptive research design to describe the strength of the factors influencing career choice of students. An evaluative research design is used to appraise carefully the worthiness of the current study (The Analyst, 2011). This was used to determine whether the instrument created by the researchers are of great value and can accurately determine the factor that influence student's career choice.

The study commenced at gathering the respondents in a classroom and distributed to them copies of questionnaire, Development and Validation of Research Choice Instrument. The questionnaire contains the 8 Factors that Influence Student's

Career Choice which are as follows:

- A. Parents
- B. Media
- C. Personal
- D. Friends
- E. Indecisiveness

Each classification factor has corresponding pertinent statements which is assigned to a Likert scale of 1 to 5 with the corresponding descriptive interpretations as: 5 – strongly agree(SA) 4 – agree(A) 3- neither agree nor disagree(NAD) 2 disagree (D) and 1- strongly disagree.(SD). After the respondent has answered the questionnaires, the researcher collected the papers, collated/summarized the answers and readied for statistical treatment.

Sample

The researcher used the Purposive Sampling Technique in choosing the sample. The senior high school students enrolled in public and private high schools in the municipality of General Mariano Alvarez, Province of Cavite were taken as representative samples of this study and based on their third Grading Period General Point Average, top 10 of them were chosen. As per data for general average of the respondents, there are 20 respondents with average ranging from 90 to 95, 65 respondents with average 85 to 89, and 15 respondents with average 80 to 84 totaling 100 respondents in all.

Table 1 shows the groups of respondents according to their Third Grading Period General Point Average.

Table 1
Groups of Respondents According to their Third Grading Period General Point Average (GPA)

General Point Average(GPA)	No. of Respondents	Percent of Respondents
90 -95	20	20%
85 -89	65	65%
80 -84	15	15%
75 -79	0	0%
Total no. of respondents	100	100%

To measure the validity of the instrument, Face validity (Fajardo, D.L. 2014), the extent to which the instrument covers all areas that it ought to measure was used.

Table 2 shows the face validity mean result and its interpretation.

Table 2
Face Validity Result and Interpretation

Face Validity Result	Interpretations
4.52	4.21- 5.00 Strongly Agree
	3.41- 4.20 Agree
	2.61- 3.40 Undecided
	1.81 -2.60 Disagree
	1.00 -1.80 Strongly Disagree

The face validity for the instrument obtained a mean result of 4.52 which is interpreted as Strongly Agree.

Statistical Treatment

Descriptive Statistics such as Arithmetic Mean was used to determine the strength of influence of the factors involving career choice of a student.

Split-half method function of Reliability Analysis, SPSS version 20 was the statistical treatment used to obtain the needed results of the reliability of the strength of influence of the factors beset career choice. Reliability and Item Analysis may be used to construct reliable measurement scales, to improve existing scales, and to evaluate the reliability of scales already in use (www.statsoft.com). The researcher used the two treatments in developing an effective instrument and to measure the reliability of the evaluation tool. Spearman-Brown Coefficient, Guttman Split-Half Coefficient, and Cronbach's Alpha were also utilized to obtain further results in reliability.

Table 3 shows the factors influencing the student's career choice.

Table 3
Descriptive Factors influencing Student's Career Choice

Factors	Mean	No. of Items
A. Parents	2.15	10
B. Media	3.6	10
C. Personal	3.45	10
D. Friends	3.6	10
E. Indecisiveness	3.75	10

Table 3 shows the total Mean and Standard Deviation of each factor influencing career choice. As gleaned from the table, Indecisiveness having a mean of 3.75 has the highest mean among the factors which means that most answers from the respondents gave high ratings to the statements under it. The values of standard deviation are too close meaning that the values are not spread out showing that the respondents answers are close to each other.

Table 5 shows the Reliability Analysis result of the Factors Influencing Student's Career.

Table 5
Reliability Analysis Results Choice Instrument

Reliability Analysis	Result	Interpretation
Cronbach's Alpha	0.969	Excellent
Spearman-Brown Coefficient	0.829	Good
Guttman Split-Half Coefficient	0.828	Good

Table 5 shows the reliability analysis of the Factors Influencing Student's Career Choice instrument. Based on the findings, having a Cronbach's Alpha of 0.969 can be interpreted as Excellent internal consistency meaning that the statements are closely related in the classification factor. The results also showed that the research instrument obtained a Good internal consistency as reflected on the Spearman-Brown and Guttman Split-Half Coefficients of 0.829 and 0.828 respectively.

RESULTS AND DISCUSSION

Based on the statistical analysis, the research instrument for determining the factor influencing the student's career choice was found to be valid and reliable instrument for use in determining the factor that influence one's choice of a career. It was face validated by 7 experts in the field of education and human resource development. Its consistency and reliability has obtained a Cronbach's Alpha with an excellent rating of 0.969 that showed the infit (internal reliability) and outfit (external reliability) of statements in the instrument for each of the enumerated factors influencing career choice of a student. The internal consistencies are validated and obtained a Good Remarks for a coefficient of 0.828 Guttman Split-Half and 0.829 Spearman-Brown coefficient.

CONCLUSION AND RECOMMENDATIONS

As a result of the findings of the study, the following conclusions were drawn:

1. The researchers were able to develop and validate an instrument that will determine the factor that influence student's career choice.

2. The validity and reliability of the instrument were established as proven in the Cronbach's Alpha coefficient with an excellent remark for a 0.969 value and a Good Spearman-Brown and Guttman Split-Half Coefficients of 0.829 and 0.828 respectively.

Recommendations:

1. The researchers recommend that a replication of this research shall be done to discover research gaps, if any.

2. It is also highly recommended that this instrument should be used as an instrument to serve its purpose, especially in state colleges and universities.

3. Other researchers could develop similar instrument and test its validity and reliability using other group of respondents in a macro level.

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QUALITY OF LIFE AND CHALLENGES ENCOUNTERED BY THE FATHERS OF CHILDREN WITH DOWN SYNDROME: BASIS FOR INTERVENTION PROGRAM

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INTRODUCTION

All children are special and a blessing from the Creator and that includes children with Down syndrome, children with this condition are challenged by their intellectual disability to function in their day-to-day lives that their parents have to deal with these challenges of taking care of children with special needs. The birth of a child with special needs causes stress in the family, most especially among parents, consequently affecting parental quality of life. It is imperative to note that although disability affects the individual, attention should also be given to its effects on the people around them particularly their parents. The problems they face and the issue they address are different from parents with regular children.

Raising a child with Down syndrome consider requiring higher demands on parents that contribute to parental exhaustion, however, most studies primarily focused on mother's mental health, and the understanding of the effects on fathers remains limited however there is a growing number of mothers who are employed which leave their husbands at home taking care of their children. Though there is a growing body of literature on father's adaptation, stress, coping skills when facing the challenges of parenting a child with Down syndrome and some studies have now specifically focused on fathers of children with Down syndrome however, there is still insufficiency of studies on actual interactions between fathers and children with Down syndromes. Most studies have focused on the experiences of brothers and sisters. Some studies have assessed the experiences of mothers only but some have included fathers and found that parents do not always have the same views of their families and the issues which cause stress; thus, the needs of fathers have received much less attention than the needs of mothers. Moreover, the majority of studies have only worked with families from Western or European cultures, in the US, Australia and the UK. This means that the findings cannot be assumed to reflect the experiences of families with different cultural backgrounds.

The researchers view that the fathers caring children with Down syndrome are best fitted for this study. In the light of the foregoing information, the purpose of this study is to determine if quality of life and challenges encountered have an impact to the fathers with Down syndrome children.

METHODOLOGY

The study used quantitative approach, specifically, using the descriptive – correlational method in gathering information and purposive sampling techniques because it is a design choosing individuals according to purpose and the knowledge of the design information. This technique is widely used in qualitative research for the identification and selection of information-rich cases for the most effective use of limited resources.

The fathers with Down syndrome children in Cavite served as sample because of good evidence that represent the total population regardless of their age, marital and employment status, household income and numbers of family members. To proceed with the data gathering procedures, the researchers use the World Health Organization Quality of Life WHOQOL-BREF instrument as questionnaire.

RESULTS AND DISCUSSION

Sub-problem No. 1: What is the demographic profile of the fathers of children with Down syndrome in terms of:

1.1 Household Income

Table 1 describes the profile of the fathers with Down syndrome children as to household income. There are 20 or 40 percent from ₱10,000 and below; 9 or 18 percent from ₱ 15,000 - 10,001; 9 or 18 percent from ₱ 35,000 to ₱ 30,001; 5 or 10 percent from ₱ 20,000 - 15,001; 5 or 10 percent from ₱ 30,000 - 25,001 and; 2 or 4 percent from ₱ 25,000 – 20,001.

Table 1
Demographic Profile of the Fathers in terms of Household Income

Income	Frequency	Percentage
10,000 and below	20	40
15,000 - 10,001	9	18
20,000 - 15,001	5	10
25,000 - 20,001	2	4
30,000 - 25,001	5	10
35,000 - 30,001	9	18
Total	50	100

Thus, there are many fathers with Down syndrome children who belong to the group with household income of ₱ 10,000 and below.

Children's health is better on average in families with higher income, and whose parents have higher levels of education. (Schor et al. 2013) The prevalence of developmental disabilities and intellectual disability is thus higher in low-income families, although developmental disability may be more often diagnosed in families with more highly educated parents. In this study, parental education, family income, and race and ethnicity are controlled. Because the study was limited to married-couple families in which both parents were in their first marriage, family structure variables were not included.

1.2 Employment Status

Table 2
Demographic Profile of the Father in terms of Employment Status

Employment Status	Frequency	Percentage
Employed	35	70
Not employed, looking for work	3	6
Not employed, NOT looking for Work	2	4
Retired	3	6
Disabled, not able to work	0	0
Others, please specify	7	14
Total	50	100

Table 2 describes the profile of the fathers with Down syndrome children as to employment status. There are 35 or 70 percent from employed; 7 or 14 percent from Others, please specify; 3 or 6 percent from Not employed, looking for work; 3 or 6 percent from retired; 2 or 4 percent from Not employed, Not looking for work; 0 or 0 percent from disabled, not able to work.

Thus, majority of fathers with Down syndrome children belong to the group of employed status.

According to Stephen McKay and Adele Atkinson (2014) most fathers work full-time hours and having a disabled child according to Families and Children's Study (FACS) found that families with children who have a disabled child needs extra income to sustain the needs help and support owing to their disability. However, there is a small impact on full-time working, and unsurprisingly it is the kind of child disability that is reported to affect the ability of parents to work is most likely to be associated with lower rates of employment among fathers.

1.3 Age

Table 3 presents the profile of the Fathers with Down syndrome children as to age. There are 20 or 40% from 50-46; 13 or 26% from 45-41; 8 or 16% from 40-36; 5 or 10% from 25-21; 2 or 4% from 35-31; 1 or 2% from 30-26; 1 or 2% from 20 and below.

Table 3
Demographic Profile of the Father in terms of Age

Age	Frequency	Percentage
20 and below	1	2
25 – 21	5	10
30 – 26	1	2
35 – 31	2	4
40 – 36	8	16
45 – 41	13	26
50 – 46	20	40
Total	50	100

Thus, there are more fathers with Down syndrome children who belong to the group of 50 to 46 of age.

According to Tancredi & Hertz-Picciotto (2014), age has been linked to a wide variety of cognitive disabilities and mental health conditions for their children. Some studies have reported independent effects of both maternal and paternal age, for example on odds of low birth weight and ASD. But it is difficult to identify statistical relationships in studies with small samples, the ages of a child's mother. Parental age and cognitive disability and father are highly correlated, and many studies examine only one or the other.

1.4 Number of Family Members

Table 4 shows the profile of the fathers with Down syndrome children as to number of family members. There are 31 or 62% from 4 – 6; 13 or 26% from 1 – 3; 3 or 6% from 7 – 9; 3 or 6% from 10-12.

Table 4
Demographic Profile of the Father in terms of Number of Family Members

No. of Family Members	Frequency	Percentage
1 – 3	13	26
4 – 6	31	62
7 – 9	3	6
10 – 12	3	6
Total	50	100

Thus, there are more fathers with Down syndrome children who belong to the group with 4 – 6 members.

Families are a critical source of support for children with disabilities. Family members absorb the added demands on time, emotional resources, and financial resources that are associated with having a child with a disability. Yet, rewards from having a family member with a disability, such as personal and spiritual growth, have also been noted. (Scorgie & Sobsey, 2014) The literature on disability in early childhood encompasses studies of a broad array of diagnoses. While a few diagnosis specific differences exist, found that caregivers of children with all chronic conditions experience similar impacts, concerns, and needs for support.

1.5 Number of Marital Status

Table 5 deals with the profile of the fathers with Down syndrome children as to marital status. There are 35 or 70% from married; 10 or 20% from Never married; 4 or 8% from Widowed; 1 or 2% from Separate; 0 or 0% from Divorced.

Table 5
Demographic Profile of the Father in terms of Marital Status

Marital Status	Frequency	Percentage
Married	35	70
Widowed	4	8
Divorced	0	0
Separated	1	2
Never married	10	20
Total	50	100

Thus, there are more Father with Down syndrome children who belong to the group of married.

According to Spanier & Cole (2013), parents of children with developmental disability are indeed faced with extraordinary challenges and often experience high levels of parenting stress and poor psychological well-being. There have been times when it has been a real strain on the marriage. But overall situation made it better and made the marriage stronger. They have to rely on each other and work together to care for the child. These comments underscore the marked variability in the quality of marriages in families of children with DD. Although some parents of children with Developmental Disability may be at an increased risk of marital discord the marriages of many other parents do not appear to be negatively impacted by having a child with Developmental Disability. Across these studies, there is evidence that having a child with

Developmental Disability can negatively influence marriages, albeit the effect is small, and many marriages remain intact and are reported to be of high quality. What is clear both within and across studies is the substantial variability in the marital quality of parents of children with Developmental Disability. The unique challenges of having a child with Developmental Disability may lead to marital strain in some couples, but have no effect, or possibly even a positive effect, on the marriages of other couples.

Sub-problem No.2: How do the Fathers Assess their Quality of Life as to:

2.1.1 Stress

Table 6 shows the assessment of the fathers on their quality of life as to stress. There are five (5) indicators on quality of life as to stress. The fathers with children with Down syndrome “Mostly” accept their current condition (WM=4.28), able to concentrate in their current life (WM=3.98), and have enough money to meet their needs (WM=3.52). The fathers moderately rated their feeling in physical pain prevents them in doing what the need to do (WM=3.04) and have negative feelings such as blue mood, despair, anxiety, depression (WM=2.64).

Table 6
Assessment of the Fathers on their Quality Life as to Stress

Indicators	Mean	Rank	Int
1. Accept my current condition.	4.28	1	Ms
2. Have enough money to meet my needs.	3.52	3	Ms
3. Have negative feelings such as blue mood, despair, anxiety, depression.	2.64	5	Md
4. Feel my physical pain prevents me from doing what I need to do.	3.04	4	Md
5. Able to concentrate.	3.98	2	Ms
Average weighted mean	3.49		Md

Note:

- 5 – Completely (C)
- 4 – Mostly (Ms)
- 3 – Moderately (Md)
- 2 – A Little (L)
- 1 – Not at all (NA)

The fathers general weighted mean assessment to their quality of life as to stress is “Moderately” with WM=3.49.

According to Davis Schilling & Schinke (2016), research suggest that fathers of children with developmental disability not only experience higher levels of stress compared to families of children with typical development, but their mental health in general might be complicated as well. Fathers may experience depression, anxiety they report less parental skills and less marital satisfaction. Studies suggest that parents who experience higher levels of stress interact differently with their children, compared to parents who experience lower levels of stress, and they respond differently to their child’s problematic. Maladaptive behaviors, challenging behaviors and self-mutilation of children with DS may be strong source of stress for parents. Children require constant supervision for their own safety, and their siblings’ safety as well. Many parents relate stress to their children’s demands for constant care. Many children

who have DD may not be able to take care of themselves, or perform behaviors that are expected from other children of their age and who have a typical development. This means that parents have to commit more to their child and invest more time and energy on him. The possible result is alleviated stress in parents.

2.1.2 Health

Table 7 reveals the assessment of the fathers on their Quality Life as to health. There are 5 indicators on Quality of Life as to Health. The Father with Down syndrome children “mostly” satisfied with his ability to perform his daily living activities (WM= 4.28), Is satisfied with his ability to perform his daily living activities (WM=4.12), Care for himself (WM=3.98), Is satisfied with his sleep” (WM=3.90), and Do have the opportunity for leisure activities (WM=3.46).

Table 7
Assessment of the Fathers on their Quality Life as to Health

Indicators	Mean	Rank	Int
1. Do have the opportunity for leisure activities.	3.46	5	Md
2. Am satisfied with my sleep.	3.90	4	Ms
3. Am satisfied with my ability to perform my daily living activities.	4.12	2	Ms
4. Care for yourself.	3.98	3	Ms
5. Am satisfied with the kind and amount of food I eat.	4.28	1	Ms
Average weighted mean	3.95		Ms

The general weighted assessment of the fathers on their Quality Life as to health is “Mostly” with WM=3.95.

Parenting a child with developmental disability does not only affect the intensity of caretaking, but its extension on time as well. The child’s autonomy may be delayed or compromised by the disability. It seems that certain child related characteristics like communication skills or the level of difficulties the child has while performing a behavior, are all strongly correlated to levels of stress experienced by parents. Special health care demands, continuous accompany of the child by parents or constant supervision interfere with parents’ everyday activities. Their limited possibilities, because of lack of time, to take a rest, to have fun or to take some time for themselves, results into tiredness, burnout, distress. Children’s eruptive behavior is correlated to low levels of self-efficacy of parents and to mental health problems (Rutter, 2013).

2.1.3 Well-being

Table 8 shows the assessment of the fathers on their Quality Life as to well-being. There are 5 indicators on Quality Life as to well-being. The Fathers with Down syndrome children “Mostly” Have enough energy for everyday life” (WM=4.42), Able to accept my bodily appearance (WM=4.40), Feel my life to be meaningful (WM=4.36), Enjoy my life (WM=4.32), Am healthy with my physical environment (4.18).

The fathers with Down syndrome Children general weighted mean as Assessment of their Quality Life as to Well-being is “Mostly” with WM=4.34.

Table 8
Assessment of the Fathers on their Quality Life as to Well-being

Indicators	Mean	Rank	Int
1. Feel my life to be meaningful.	4.36	3	Ms
2. Am healthy with my physical environment.	4.18	5	Ms
3. Enjoy my life.	4.32	4	Ms
4. Have enough energy for everyday life.	4.42	1	Ms
5. Able to accept my bodily appearance.	4.40	2	Ms
Average weighted mean	4.34		Ms

According to Martin & Colbert (2016) research father's psychological well-being is strongly affected by their child's primary diagnosis. Shock, denial, disbelief, grief are parents' common reactions in this case. A considerable amount of literature show that at first parents deal with their loss of expectancies, with lost possibilities and dreams of their perfect child, and all this process of loss that they go through, results in emotional distress. Nevertheless, some parent's report some sense of relief after diagnose is set, because it finally puts an end to their doubts, and provides them with answers. A different study conducted among parents of children with DD showed that parental optimism was associated with aspects of psychological well-being. In particular, maternal optimism was found to relate to increased positive effect, decreased negative effect, and a greater use of adaptive coping strategies (Blacher, Baker, & Kaladjian, 2013).

Table 9 shows that summary of assessment of the fathers on their Quality of Life. There are three variables including Well-being with the WM=4.34; in terms of Health with the WM=3.95; and Stress with the WM=3.49.

Table 9
Summary of Assessment of the Fathers on their Quality of Life

Variables	Mean	Rank	Int
Stress	3.49	3	Md
Health	3.95	2	Ms
Well being	4.34	1	Ms
Overall weighted mean	3.93		Ms

The overall weighted mean of assessment of the Fathers on their Quality of Life is WM=3.93.

According to Martin & Colbert (2016) father's psychological well-being is strongly affected by their children's primary diagnosis. All this process of loss that they go through, results in emotional distress. Moreover, special health care demands, continuous accompany of the child by parents or constant supervision interfere with parents' everyday activities. Their limited possibilities, to take a rest, to have fun or to take some time for themselves, results into tiredness, burnout, distress and to mental health problems (Rutter 2013).

Furthermore, Davis Schilling & Schinke (2016), suggest that fathers of children with developmental disability not only experience higher levels of stress compared to families of children with typical development, but their mental health in general might be complicated as well.

2.2.1 Social Support

Table 10 shows Challenges Encountered by the fathers as to social support. There are five 5 indicators Challenges Encountered by the Fathers as to Social Support. The fathers with Down syndrome children “Moderate”: Consider the following as turn to for advice about handling problems with family (WM=3.88), Get the kind of support that needs from others (WM=3.84), Easily find someone to help him with daily chores, when sick (WM=3.72), Know someone he can turn to (WM=3.66), Share my most private worries and fears with (WM=2.58).

Table 10
Challenges Encountered by the Fathers as to Social Support

Indicators	Mean	Rank	Int
1. Feel that there is no one I can share my most private worries and fears with.	2.58	5	Md
2. Could easily find someone to help me with my daily chores, when I ‘am sick.	3.72	3	Ms
3. Have someone that I can turn to for advice about handling problems with my family.	3.88	1	Ms
4. Need suggestions on how to deal with a personal problem, I know someone I can turn to.	3.66	4	Ms
5. Get the kind of support that I need from others.	3.84	2	Ms
Average weighted mean	3.54		Ms

The fathers with Down syndrome children “Mostly” encountered challenges in social support on the average weighted mean of 3.54.

According to Altieri & Kluge (2015), social support are good contributors in the coping of the family. Parents shared that joining support groups and having group discussions with friends are one of the good coping strategies. They are related to the study of Gray (2012) stating that the usual and main coping strategy of fathers are from their outlets and works outside home and that family supports and support groups are the most helpful mechanisms for the family as a whole. While according to Belendez, Topa, & Bermejo (2014), the topmost answers of the parents about coping with their child’s situation are the religious strategies and support seeking, which leads to social support and social interactions. These studies provide a good set of coping strategies regarding social, psycho-spiritual and psychological aspects but the physical aspect, missing out the leisure activities.

2.2.2 Adjustment

Table 11 shows challenges encountered by the fathers as to adjustment. There are five 5 indicators in Challenges Encountered by the Fathers as to Adjustment. The Fathers with Down syndrome Children “Moderately” Maintain close relationships with others (WM=2.86), Private leisure activities are impaired (WM=2.82), Social leisure activities are impaired (WM=2.80), Ability to work is impaired (WM=2.76), and Home management is impaired (WM=2.68).

The fathers with Down syndrome children rated challenges encountered as to adjustment as “Moderately” with WM=2.78.

Table 11
Challenges Encountered by the Fathers as to Adjustment

Indicators	Mean	Rank	Int
1. Ability to work is impaired.	2.76	4	Md
2. Home management is impaired.	2.68	5	Md
3. Social leisure activities are impaired.	2.80	3	Md
4. Private leisure activities are impaired.	2.82	2	Md
5. Ability to form and maintain close relationships with others, including those I live with, is impaired.	2.86	1	Md
Average weighted mean	2.78		Md

Pillay and Girdler (2012), raising a child with Down syndrome can present parents with additional challenges. Higher instances of stress, anxiety and depression have been reported in parents of children with a Down syndrome than in parents of typically developing children. Having a child with a Down syndrome requires adjustment to a new life role as a career and adaptation to the needs of the children. Changes such as modified work patterns and social relationships are all factors that influence stress and coping of new mothers. Supports such as family, friends, spirituality and religion can play a key role in helping the family members of children with Down syndrome cope. Children with Down syndrome are challenged by their intellectual disability, which affects their ability to function in their day-to-day lives. The parents of children with Down syndrome have to deal with the challenges of taking care of a child with special needs and are exposed to an array of negative thoughts and emotions (Habib and Jameel, 2015).

2.2.3 Social Skills

Table 12 shows that challenges encountered by the fathers as to social skills. There are five 5 indicators on challenges encountered by the fathers as to social skills. The fathers with Down syndrome children “mostly” Fulfill his responsibilities (WM=4.04), Expresses his thoughts (WM=3.92), Accepts criticism without getting angry (WM=3.62), and Moderately in expresses disagreement with others (3.48), and Sensitive to surrounding events (WM=3.44).

Table 12
Challenges Encountered by the Fathers as to Social Skills

Indicators	Mean	Rank	Int
1. Accepts criticism without getting angry.	3.62	3	Ms
2. Am sensitive to surrounding events.	3.44	5	Md
3. Fulfills my responsibilities.	4.04	1	Ms
4. Expresses my thoughts.	3.92	2	Ms
5. Expresses my disagreement with others.	3.48	4	Md
Average weighted mean	3.70		Ms

The fathers general weighted mean challenges encountered by the fathers as to social skills is “Mostly” with WM=3.70.

According to Richardson (2014), normally parents’ involvement in their children’s education process is very important. When it comes to children with special needs, parents need to engage more than they would do with normally developed children. (Westling 2014) Because of new responsibilities for which they are often not prepared, they participate in

special trainings and instruction sessions for parents, they need to interact regularly and very often with teachers, etc, and all this means less time for other activities. Parents can easily get discouraged because of their children's failure to meet educational goals. All this adds up to stress.

Table 13 shows the summary of challenges encountered by the fathers with the three variables including social skills with the WM=3.70, in terms of social support with the WM=3.54 and adjustment with the WM=2.78.

Table 13
Summary of Challenges Encountered by the Fathers

Variables	Mean	Rank	Int
Social Support	3.54	2	Ms
Adjustment	2.78	3	Md
Social Skills	3.70	1	Ms
Overall weighted mean	3.34		Md

The overall weighted mean of the challenges encountered is WM=3.34.

According to Richardson (2014), in terms of normally parents' involvement in their children's education process is very important. When it comes to children with special needs, parents need to engage more than they would do with normally developed children, Because of new responsibilities for which they are often not prepared, they participate in special trainings and instruction sessions for parents, they need to interact regularly and very often with teachers, etc, and all this means less time for other activities. Moreover, according to Altieri & Kluge (2015), social support are good contributors in the coping of the family. Parents shared that joining support groups and having group discussions with friends are one of the good coping strategies. Furthermore, according to Pillay and Girdler (2012) on Adjustment, raising a child with Down syndrome can present parents with additional challenges. Higher instances of stress, anxiety and depression have been reported in parents of children with a Down syndrome than in parents of typically developing children. Having a child with a Down syndrome requires adjustment to a new life role as a career and adaptation to the needs of the children.

Sub-problem 3: Is there significant relationship between the demographic profile of the fathers and the following:

Table 14
Relationship between Household Income and the Quality of Life and Challenges Encountered Variables

Variables	Tabular Value	df	p-value	Conclusion	Interpretation
Quality of Life	18.307	10	0.8162	Accept Ho	Not Significant
Challenges Encountered	24.996	15	0.0000	Reject Ho	Significant

Note:

Level of significance = .05
S – Significant
NS – Not Significant

As shown in Table 14 is the relationship between the demographic profile of the respondents as to household income and the quality of life and the challenges encountered by the fathers. Based on the results the household income has no significant relationship to the quality of life of the fathers with the child having Down syndrome with computed p-value of 0.8162 which is greater than the level of significance of 0.05. Thus, the null hypothesis is accepted. As to the relationship between household income and the challenges encountered by the fathers with child having down syndrome the computed p-value of 0.0000 is less than the level of significance of 0.05 therefore the hypothesis is rejected. Hence, there is significant relationship between the demographic profile as to household income and the challenges encountered by the fathers.

Philippine Statistics Authority (2014) examines the impact of Fathers with low income on the quality of life in families of children with disabilities. Twenty-eight percent of children with disabilities, ages 3 to 21, are living in families whose total income is less than the income of 10,000 and below. This review found a variety of impacts of poverty on the five dimensions of family, including health (e.g., hunger, limited health care access), productivity (e.g., delayed cognitive development, limited leisure opportunities), physical environment (e.g., overcrowded and unclean homes, unsafe neighborhoods); emotional well-being (e.g., increased stress, low self-esteem), and family interaction (e.g., inconsistent parenting, marital conflict over money).

Table 15
Relationship between Employment Status and the Quality of Life and Challenges Encountered

Variables	Tabular Value	df	p-value	Conclusion	Interpretation
Quality of Life	18.307	10	0.3154	Accept Ho	Not Significant
Challenges Encountered	21.026	12	0.0000	Reject Ho	Significant

As shown in Table 15 is the relationship between the demographic profile as to employment status and the quality of life and challenges encountered. Based on the result the employment status has no significant relationship to the Quality of Life of the Fathers with Down syndrome children with the computed p-value of 0.3154 which is greater than the level of significance of .05. Thus, the null hypothesis is accepted. As to the relationship between employment status and the challenges encountered by the fathers with Down syndrome children the computed p-value of 0.0000 is less than the level of significance of .05 therefore the hypothesis is rejected. Hence, there is significant relationship between the demographic profile as to employment status and the challenges encountered by fathers.

Table 16
Relationship between Age and the Quality of Life and Challenges Encountered

Variables	Tabular	df	p-value	Conclusion	Interpretation
Quality of Life	21.026	12	0.9951	Accept Ho	Not Significant
Challenges Encountered	28.869	18	0.0013	Reject Ho	Significant

As shown in table 16 is relationship between the demographic profile of the respondents as to age and the Quality of Life and challenges encountered. Based on the result the age has no significant relationship to the Quality of Life of the fathers with Down syndrome children with the computed p-value of 0.9951 which is greater than the level of significant of

0.05. Thus, the null hypothesis is accepted. As to the relationship between age and the Challenges Encountered p-value of 0.0013 less than the level of significance of .05 therefore the hypothesis is rejected. Hence, there is significant relationship between the demographic profile as to age and the challenges encountered by the fathers.

Table 17
Relationship between Number of Family Members and the Quality of Life and Challenges Encountered

Variables	Tabular Value	df	p-value	Conclusion	Interpretation
Quality of Life	12.592	6	0.4488	Accept Ho	Not Significant
Challenges Encountered	16.919	9	0.00000	Reject Ho	Significant

As shown in Table 17 is the relationship between the demographic profile of the respondent, as to numbers of family members and the Quality of Life and the challenges encountered by the fathers. Based on the result the numbers of family members have no significant relationship to the Quality of Life of the fathers with Down syndrome children with computed p-value of 0.4488 which is greater than the level of significance of .05. As to the relationship between numbers of family members and the challenges encountered by the father with Down syndrome children the computed p-value of 0.0000 is less than the level of significance of .05 therefore the hypothesis is rejected. Hence, there is significant relationship between the demographic profile of fathers as to number of family members and the challenges encountered by the fathers with Down syndrome children.

Table 18
Relationship between Marital Status and the Quality of Life and Challenges Encountered

Variables	Tabular Value	df	p-value	Conclusion	Interpretation
Quality of Life	12.592	6	0.8706	Accept Ho	Not Significant
Challenges Encountered	16.919	9	0.0000	Reject Ho	Significant

As shown in Table 18 is the relationship between the demographic profile of the respondents as to marital status and the Quality of Life and the challenges encountered by the fathers. Based on the result the marital status has no significant relationship to the Quality of Life of the fathers with Down syndrome children with computed p-value of 0.8706 which is greater than the level of significance of .05. As to the relationship between marital status and the challenges encountered by the father with Down syndrome children the computed p-value of 0.0000 is less than the level of significance of .05 therefore, the hypothesis is rejected. Hence, there is significant relationship between the demographic profile of fathers as to marital status and the challenges encountered by the fathers with Down syndrome children.

CONCLUSIONS, AND RECOMMENDATIONS

Based on the findings of the study of the following were drawn:

1. Findings proved that most of the Fathers with Down syndrome children have the household income of 10,000 and below while most of the are employed. Majority of the fathers are ranging between in 50 to 46 years old and there are more Fathers with Down syndrome children belonging to the 4 – 6 members in family. Moreover, most of the fathers are married.

2. Evidence shows that the relationship between the employment status, age, numbers of family members and marital status to Quality of Life have no significant relationship. However, the data unveil that there is a significant relationship between the employment status, age, numbers of family members and marital status to challenges encountered.

3. The results unveil that the Quality of Life of fathers with Down syndrome children as to stress is the most significant. Additionally, the challenges encountered by fathers with Down syndrome children as to adjustment is the most significant.

4. Based on the results, the researchers proposed an intervention program, a home visitation program with collaboration with Local Government Unit of Carmona for the fathers with Down Syndrome children regarding with the Quality of Life and the challenges encountered.

Based on the findings and conclusions from this study, the following are suggested:

1. The father should have enough knowledge on how to take care of their children with Down syndrome, know their needs and problems to have an idea to support it. The fathers must also need to secure good relationship and open communication as well to their children.

2. The family, peers and support group should help the fathers of children with Down syndrome have moral support and good advises that could really help the fathers give guidance for their children to achieve their goals in spite of their conditions.

3. The community and society should continue providing psychological and emotional support to those parents of children with Down syndrome through awareness and advocacy in taking care of children with such cases.

4. The fathers needed to do some leisure activities during free time, exercise and eat healthy foods, socialize to their friends for them to have a good, healthy lifestyle.

5. It is suggested to the Local Government Unit of Carmona specifically to the Person with Disability Affairs Office (PDAO) to provide financial support to indigent parents having children with Down syndrome. The local authorities may pass a bill to provide IDs to all parents with Down Syndrome children that may entitle them to avail discounts that senior citizens enjoy.

6. There must be further studies to determine the quality of life and challenges encountered by the fathers with Down syndrome children and their relationship to each other for more information. Factors under stress, health, well-being, adjustment, social skills and social support must be considered as well for the better understanding of the readers and learners.

7. The importance of time spent with children, must be emphasized that quality of time is much more important than quantity of time. Children need high-quality time with parents and caregivers—that is what is most beneficial to children to have a positive effect on them as they grow.

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HANDS ON MINDS ON INSTRUCTIONAL ACTIVITIES FOR ELEMENTARY STATISTICS FOR BSE-MATH II STUDENTS: ITS ACCEPTABILITY

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INTRODUCTION

Every morning, the newspaper and other media conveyed the public with statistical information on topics ranging from the economy to education, from movies to sports, from food to medicine, and from public opinion to social behavior. Such information guides decisions of our people lifestyles and enables them to meet their responsibilities as citizens. At work, they may be presented with quantitative information on budgets, supplies, manufacturing specifications, market demands, sales forecasts, or workloads.

Faculty may be confronted with educational statistics concerning student performance or their own accountability. Every high-school graduate should be able to use sound statistical reasoning to intelligently cope with the requirements of citizenship, employment, and family and to be prepared for a healthy, happy, and productive life. It is also available for general use by individuals or private groups. Thus, statistics compiled by government agencies have a tremendous impact on the life of the ordinary citizen. Personal Choices Statistical Literacy is required for daily personal choices. Statistics provides information about the nutritional quality of foods and thus informs the public choices at the grocery store. Statistics helps to establish the safety and effectiveness of drugs, which aids physicians in prescribing a treatment. A statistically competent work force will allow people to compete more effectively in the global marketplace and to improve its position in the international economy. An investment in statistical literacy is an investment in our nation's economic future, as well as in the well being of individuals.

Thus, the researcher wishes to help BSE-Mathematics II students, specifically in the field of Statistics since it plays a vital role in their daily lives by developing an activity worksheet that can enrich and make teaching of the subject more effective. Although several textbooks, manuals, and guides are available, the researcher observes that certain objectives do not have corresponding subject matter presentations and if there are, they are deficient in quality and quantity. This eagerness of instructional materials is probably one of the causes of poor statistical comprehension and slow acquisition of basic knowledge students in Elementary Statistics.

In general, students' motivation and interest during a math lesson are the main reasons for faculty, to create a desired learning atmosphere. Since mathematics courses are often create unavoidable fear for many students, lots of researchers have studied different theories to make mathematics more understandable and enjoyable.

Since learning mathematics like Statistics is by doing, the learners must be provided with enough exercises to develop skills. After all, practice makes perfect. However, the examples of the teacher and in the textbook are not sufficient in order to enhance the acquisition and development of mathematical concepts. There should be an instructional aid that will serve as additional enrichment activity materials to the textbook.

This study has been conceived to upgrade/uplift the performance of the students in Statistics as well as in other related subject areas. The point is to sharpen the mind of the

students and to become smarter through the Hands-On Minds-On instructional activities in Elementary Statistics for BSE Math II students.

Statement of the Problem

The primary purpose of this study was to find out the acceptability of the proposed Hands-On Minds-On Activity in Elementary Statistics for BSE Math II students.

Specifically, it sought answers to the following sup-problems:

1. What are the least mastered skills of BSE Math II students in Elementary Statistics for the school year 2019-2020?
2. Based on the findings, what instructional materials maybe developed?
3. How acceptable is the Hands-On Minds-On instructional Activities in Elementary Statistics for BSE Math II students as assessed by the experts and faculty in terms of:
 - 3.1 Objectives;
 - 3.2 Clarity;
 - 3.3 Language and Style;
 - 3.4 Presentation;
 - 3.5 Usefulness;
 - 3.6 Evaluation;
 - 3.7 Illustration; and
 - 3.8 Activities?
4. What is the performance of the BSE Math II student in the pre-test and post-test after the utilization of the Hands-On Minds-On instructional Activity in Elementary Statistics? Is there significant if any?

Conceptual Framework

The researcher believes that difficulties can be minimized if a proposed activity worksheet for teaching a particular subject matter are available, but there must be basis for this presumption.

The conceptual model which guided this study follows the INPUT, PROCESS, and OUTPUT model which is shown in Figure 1.

The **INPUT** box consists of the respondents of the study, curriculum pacing guide, the proposed Hands On Minds On instructional activities for Elementary Statistics for BSE Math II students and its variables: objectives, language and style, presentation, usefulness, evaluation, illustration and activities.

PROCESS box consists of distribution and retrieval of survey questionnaires, statistical treatment, analysis and interpretation of data, and the presentation of the findings in tabular form and textual forms.

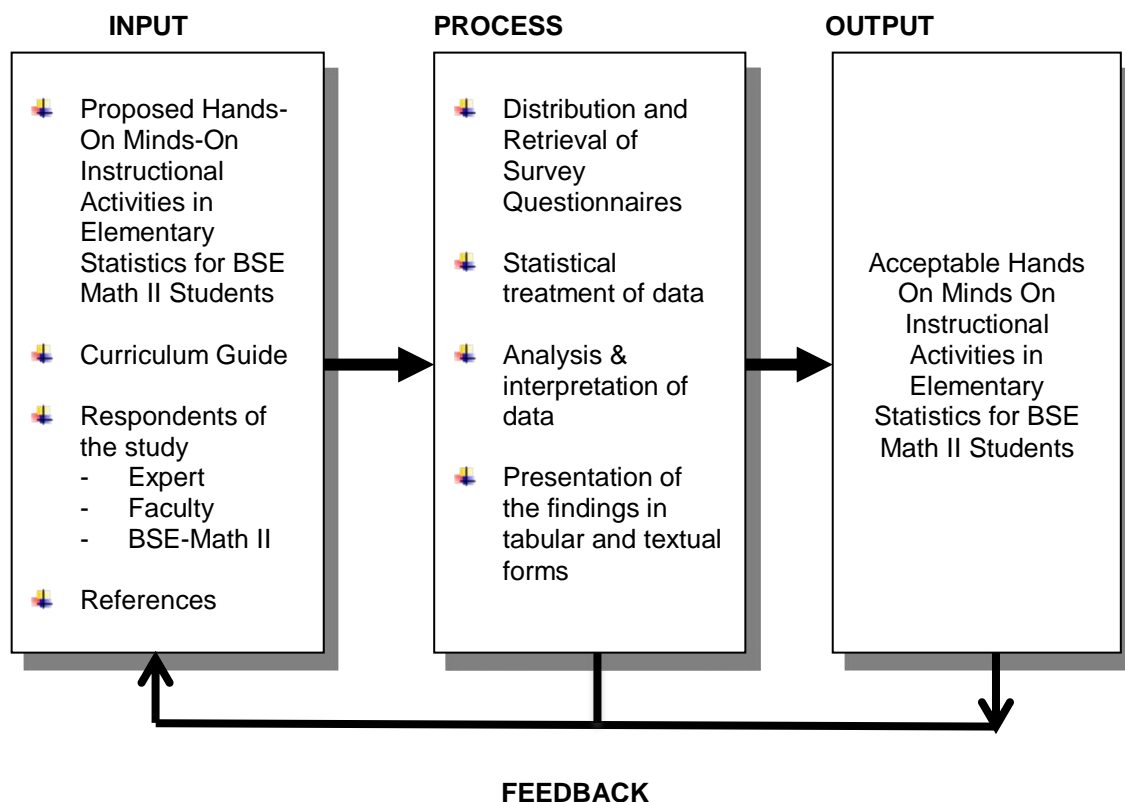


Figure 1. Conceptual Paradigm

The Output box presents the acceptable proposed Hands On Minds On instructional activities for Elementary Statistics for BSE Math II students.

Objective of the Study

The primary purpose of this study was to find out the acceptability of the proposed Hands On Minds On instructional activities for Elementary Statistics for BSE Math II students.

Significance of the Study

The results of the study could help in determining the effectiveness of Hands On Minds On instructional activities for Elementary Statistics for BSE Math II students. The researcher also believes that the results of this study could contribute and be beneficial to:

BSE-Math. The students would be able to comprehend Statistical problems and express themselves better to improve their social development with their classmates in any Math learning activities.

Experts/Faculty. The faculty' burdens in the preparations of activities will serve as a reference to have more interesting and meaningful lessons. These will also provide challenging exercises that will help the learners think critically and analytically.

School Administrators. The result of the study would serve as a springboard for them to look possible remedial measures to minimize problems causing the difficulties of the students to learn. They would also be aware of the kind of learning activity that would provide quality education among secondary students.

Curriculum Writers. This study would serve as a guide in the curriculum revision in mathematics, including planning and in-service trainings for teaching mathematics for BSE-Mathematics students.

Future Researchers. Lastly, this study would serve as a guide for graduate students and other researchers for further study and encouragement to work on producing enrichment activities in mathematics for better and effective instruction and learning.

REVIEW OF THE LITERATURE and STUDIES

Hulipas (2012) mentioned some solving strategies in dealing with mathematics word problem. She had also mentioned the focus on Mathematics, which is on computational skills that will help each learner in solving real-life problems.

Jan and Rodriguez (2012) mentioned the importance of exploring and improving teaching and learning practices in the area of the mathematical word problems. They had also mentioned that it is reasonable to expect that a student's performance in solving word problems be affected by difficulties in comprehension. They said that the failures of students to comprehend Mathematics word problem are results of ineffective teaching and learning practices.

Lee (2011) stated the role of working memory (WM) in children's growth in Mathematical problem solving. The researcher administered a longitudinal study of children. According to him the growth in the executive system of working memory is an important predictor of growth in children's problem solving beyond the contributions of cognitive measures of inattention, inhibition, and processing speed as well as achievement measures related to calculation and reading.

Haghverdi (2012) mentioned the influence of familiarization rewording, conceptual rewording and their combination on facilitating the process of solving word problems. He said that all types of rewording facilitated students' performance in solving the given word problems. He also mentioned that rewording had influenced students' ability in solving three types of word problems (compare, change, and combine) similarly.

Piggott (2011) attempted to make a case for saying that enrichment should pervade all aspects of our teaching and pupils' learning, whatever the ability of the pupil. It reflects a view of mathematics as a problem solving subject. It can facilitate developing high-level mathematical problem solving and thinking skills in the most able while offering opportunities for everyone to engage at an appropriate level. This does place high demands on teachers but in many ways such an approach, given appropriate resources, may ease the burdens of multiple and different activities going on in any classroom because of the different needs of different learners. To implement such a view in a practicable way, we need to develop appropriate resources. This is part of the work currently being undertaken by the NRICH project. We have produced enrichment "trails" that aim to support pupils with developing thinking skills such as "being systematic", "generalizing", "visualizing" and "using analogy" as well as trails based on learning through problem solving, such as "finding areas of triangles".

Fischman (2011), mentioned that differentiated instruction requires the awareness of differences among students' perceptions of learning. It suggests teachers apply alternative teaching methods to reach every student in a classroom by taking care of different needs of students. Involvement of the maximum number of students during a lesson is the key component of differentiated instruction. Differentiated instruction presumes that this is possible by discovering the learning differences among students.

Culaste (2011) mentioned the metacognitive dimensions on the cognitive skill of Mathematical problem solving. Elementary Mathematics teacher should be advised to improve their teaching skills on numerical comprehensions, simple linguistic sentences, contextual information, mental visualization, number system knowledge, relevant information, number sense estimation, and procedural calculation. She also mentioned that learners must be exposed to more experienced and competent teachers for them to acquire more activities and experiences that would stimulate creative thinking of the pupils to increase their level of cognitive skills. She also added that the needed assessment of the cognitive skills of the teachers should be conducted to find out the corresponding trainings needed by the teacher and the appropriate teaching material should be written.

Verzosa (2011) undiscovered that language problem is a common cause of the poor performance in Mathematics. Mathematical difficulties were also mentioned as one of the problems of the learners to solve a Mathematical word problem.

Lugo (2011) stated that some factors had affected the problem-solving capability of students. It had been mentioned in her study that the attitude towards problem-solving and the study strategies employed and the cognitive factors affected the problem solving capability. She mentioned in her study that there is significant relationship between the problem-solving capabilities of the students and the personal, cognitive and the social factors.

A recent study from the American Diploma Project, entitled Ready or Not: Creating a High School Diploma That Counts, recommends "must-have" competencies needed for high-school graduates "to succeed in postsecondary education or in high-performance, high-growth jobs." These include, in addition to algebra and geometry, aspects of data analysis, statistics, and other applications that are vitally important for other subjects, as well as for employment in today's data-rich economy. Statistics education as proposed in this Framework can promote the "must-have" competencies for graduates to "thrive in the modern world."

Teachers may be confronted with educational statistics concerning student performance or their own accountability. Medical scientists must understand the statistical results of experiments used for testing the effectiveness and safety of drugs. Law enforcement professionals depend on crime statistics. If we consider changing jobs and moving to another community, then our decision can be affected by statistics about cost of living, crime rate, and educational quality. Numbers governs our lives.

Felix (2012) emphasized that in order for students with learning difficulties meet the large demands of high stakes testing, they must be taught effective practices, steeped in research, which can enhance their performance with solving Mathematical word problem. She also mentioned the teaching methodology that will help assist students with Mathematical problem-solving and vocabulary development. The development of vocabulary knowledge is essential in order to assist students with learning difficulties in comprehension, which is a necessity when solving Mathematics word problem. Strategies such as self-regulation and real-life connection (RLC) should be included in teaching practices to assist students with learning difficulties in meeting the difficulties they face when solving Mathematical word problems.

According to Walker (2012) there is relationship between oral reading fluency and mathematical problem-solving ability. She also mentioned that oral reading fluency is positively correlated to the comprehension of student. As the student's oral reading fluency increases and improves, his or her comprehension increases and improves too.

Rickansrud, (2012), studied the impact of a math enrichment program on student achievement. Pre and post NJ ASK test data was analyzed to determine the impact of the program on student achievement. Additionally, a student survey was disseminated to inquire into personal perceptions about individual improvement as well as the program. Independent variables measured were gender, ethnicity, socio-economic status, special education and participation in the program. The findings of the study were statistically significant. Students who completed the math enrichment program had made significant gains on the NJ ASK. The mean, minimum and maximum scores on the post-test NJ ASK scores of those students in the math enrichment program were better than those who did not participate. The changes in the proficiency levels for the participants were greater than the non-participants. Reviewing the student surveys, those in the program believe the course has improved their overall math skills. They also believed that the program assisted them in their regular math class. Although the students did not particularly like having two math classes during their school day, they felt more confident about their abilities. The final conclusion of the study was for School A to continue with providing the math enrichment program to students who have not been successful on the NJ Ask and their previous math courses.

Tow (2011), study used quantitative data to determine if there was a significant change in the academic achievement and attitudes over the course of the year of sixth-grade students in the enrichment math pilot program.

Synthesis of the Study

The reviewed literature of Hulipas (2012), Jun and Rodriguez (2012), Lee (2011), Piggott (2011) and Fishman (2011) mentioned that solving Mathematical word problem is an integral part of Mathematics education in most part of the world because these problems allow students to apply their Mathematics knowledge and skills to real-world situation.

The studies of Culaste (2011), Versoza (2011), Lugo (2011), Sincero (2011), Gangi (2011), Rickansrud (2012), and Tow (2011) are really significant for the present study because all of these studies are aiming for the better performance of students especially those who have comprehension deficit and influenced the importance of enrichment activity in helping students develop the following: realize the importance of teamwork, to be more caring and supportive, committed relationships, social competence and self-esteem.

METHODOLOGY

This chapter presents the research design, the research locale, the sample and sampling technique, the instruments, the data gathering procedure, and the statistical treatment of the data.

Research Design

This study made use of the descriptive method of research. Descriptive research gathers quantifiable information that can be used for statistical inference on target audience through data analysis. As a consequence this type of research takes the form of closed-ended

questions, which limits its ability to provide unique insights. It can help an organization better define and measure the significance of something about a group of respondents and the population they represent.

Data for the study were analyzed to determine the acceptability of the proposed Hands on Minds On instructional activities for Elementary Statistics for BSE Math II students.

Samples and Sampling Technique

A combination of purposive-convenience sampling was used in this study. Purposive because only experts and faculty teaching mathematics were utilized to ensure a wide and in-depth assessment of the acceptability of the proposed Hands On Minds On instructional activities for Elementary Statistics for BSE Math II students.

Research Instruments

The following instruments were used in the study.

Proposed Activity Worksheet

The proposed activity worksheet in statistics is an integrative skill activities aimed to improve the teaching and learning process in the tertiary level most especially for BSE Math II students.

Questionnaire

Another measure utilized to validate proposed Hands On Minds On instructional activities for Elementary Statistics for BSE Math II students was the assessment of a questionnaire which used the Likert's Scale to determine the acceptability of the Hands On Minds On instructional activities for Elementary Statistics for BSE Math II students as to clarity, usefulness, language and style, illustration, presentation, and suitability. The questionnaire was personally distributed, administered and retrieved by the researcher from school administrators and mathematics teachers.

Statistical Treatment

The researcher used the following statistical test to treat the data collected. The data is nominal. Descriptive statistics such as frequency, percentage, weighted mean, and t-test.

RESULTS AND DISCUSSIONS

Sub-Problem No.1. What are the least mastered skills of BSE Math II students in Statistics for the school year 2019-2020?

It can be observed in the Table 1 the eighteen (18) least mastered skills of students in Basic Statistics where they performed average. These least mastered skills are as follows: Mathematical Notations (MPS=62.30); Frequency Distributions (MPS=64.16); Graphical Presentation of Data (MPS=63.41); Measures of Central Tendency (Grouped and Ungrouped Data) (MPS=64.19); Measures of Dispersion (MPS =59.42); Measures of Relative Standing (MPS=64.32); Counting Techniques (MPS=63.82); Probability of an Events (MPS=62.37); Laws on Probability (MPS=60.72); Conditional Probability and Independent Events (MPS=63.43); The Concepts of Random Variables and Probability Distributions (MPS=64.21);

More on Discrete Probability Distributions (MPS=60.12); Sampling Procedure (MPS=63.12); Estimation of Mean, Variance, and Proportion for a Single Population (MPS=60.09); Statistical Hypothesis (MPS=64.12); Linear Correlation Analysis (MPS=60.32); Simple Linear Regression Analysis (MPS=64.12); and Residuals (MPS=63.09).

Table 1
Least Mastered Skills of BSE Math II Students in Elementary Statistics for the School Year 2019-2020

Least Mastered Skills	MPS	Interpretation
1. Mathematical Notations	62.30	Average
2. Frequency Distributions	64.16	Average
3. Graphical Presentation of Data	63.41	Average
4. Measures of Central Tendency (Grouped and Ungrouped Data)	64.19	Average
5. Measures of Dispersion	59.42	Average
6. Measures of Relative Standing	64.32	Average
7. Counting Techniques	63.82	Average
8. Probability of an Events	62.37	Average
9. Laws on Probability	60.72	Average
10. Conditional Probability and Independent Events	63.43	Average
11. The Concepts of Random Variables and Probability Distributions	64.21	Average
12. More on Discrete Probability Distributions	60.12	Average
13. Sampling Procedure	63.12	Average
14. Estimation of Mean, Variance, and Proportion for a Single Population	60.09	Average
15. Statistical Hypothesis	64.12	Average
16. Linear Correlation Analysis	60.32	Average
17. Simple Linear Regression Analysis	64.12	Average
18. Residuals	63.09	Average

Legend:

MPS	Descriptive Equivalent
96 – 100%	Mastered
86 – 95%	Closely Approximating Mastery
66 – 85%	Moving Towards Mastery
35 – 65%	Average
15 – 34%	Low
5 – 14%	Very Low
0 - 4%	Absolutely No Mastery

Sub-Problem No.2. Based on the findings, what instructional materials maybe developed?

Based on the findings, there is a need to develop an instructional material like Hand On Minds On instructional activities for Elementary BSE-Mathematics II students to offer the best means by which a faculty can provide direction in her students' daily search for new understanding and verifications. The best teachers trained in the latest teaching methods, well informed about facts and aware of the goals of education can fail in planning and implementing a course if she is not equipped with appropriate instructional materials.

The primary objective of the study is to provide Hands On Minds On instructional activities for Elementary BSE-Mathematics II students as learning/supplementary material to enhance mathematics competencies specifically in the field of Statistics. The developed Hands On Minds On instructional activities were arranged chronologically by topics was needed in teaching BSE-Mathematics II students.

Instructional materials such as activity worksheets were designed to master statistical concepts and acquire the skills needed for computation and problem solving. It provides activities, which jibed with the lessons given in the worksheets. The activities were presented quite different from those in the books. These activities helped developed the student's sense of appreciation in statistical skills.

Sub-Problem No.3. How acceptable is the Hands On Minds On instructional activities for Elementary BSE-Mathematics II students as assessed by the experts and faculty in terms of:

It can be seen in Table 2, the Hands On Minds On instructional activities for Elementary BSE-Mathematics II students was very acceptable to the respondents. All variables as indicators of acceptability were assessed as very acceptable, namely: usefulness with overall mean value of 4.26 rank 1; WM of 4.25 for language and style rank 3.5; WM of 4.25 for presentation rank 3.5; WM of 4.25 for illustration rank 3.5; WM of 4.25 for activity rank 3.5; WM of 4.24 for clarity rank 6.5; WM of 4.24 for evaluation rank 6.5; and WM of 4.21 for objectives rank 8.

The overall computed mean value of 4.24 for experts and mathematics faculty showed that the Hands On Minds On instructional activities for Elementary BSE-Mathematics II students are very acceptable.

Table 2
Acceptability of Hands On Minds On Instructional Activities
for Elementary BSE-Mathematics II Students

Variables	Experts		Mathematics Faculty		Overall Mean		Rank
	WM	VI	WM	VI	WM	VI	
1. Objectives	4.19	A	4.22	VA	4.21	VA	8
2. Clarity	4.23	VA	4.25	VA	4.24	VA	6.5
3. Language and Style	4.26	VA	4.25	VA	4.25	VA	3.5
4. Presentation	4.26	VA	4.25	VA	4.25	VA	3.5
5. Usefulness	4.24	VA	4.27	VA	4.26	VA	1
6. Evaluation	4.23	VA	4.25	VA	4.24	VA	6.5
7. Illustration	4.24	VA	4.25	VA	4.25	VA	3.5
8. Activities	4.24	VA	4.26	VA	4.25	VA	3.5
Overall Mean	4.24	VA	4.25	VA	4.24	VA	

Sub-Problem No.4. What is the performance of the BSE Math II students in the pre-test and post-test after the utilization of the Hands On Minds On instructional activities for Elementary BSE-Mathematics II students? Is there significant if any?

It can be seen in Table 3 that the mean scores of the students had increased from 21.52 to 41.32 which obtained a high performance from 71.52 or moving towards mastery to 41.32 interpreted as closely approximating mastery with a higher performance level in post-test than the pre-test.

Table 3
Result of the Pre-test and Post-test after Using
the Activity Worksheet in Basic Statistics

Pre-test		Verbal Interpretation	Post-test		Verbal Interpretation
Mean	MPS		Mean	MPS	
21.52	71.52	Moving Towards Mastery	41.32	91.32	Closely Approximating Mastery

MPS Descriptive Equivalent

96 – 100%	Mastered
86 – 95%	Closely Approximating Mastery
66 – 85%	Moving Towards Mastery
35 – 65%	Average
15 – 34%	Low
5 – 14%	Very Low
0 - 4%	Absolutely No Mastery

It can be deduced that the use of Hands On Minds On instructional activities for Elementary BSE-Mathematics II students had positive effect on learning mathematical skills in elementary Statistics.

Hulipas (2012) mentioned some solving strategies in dealing with mathematics word problem. She had also mentioned the focus on Mathematics, which is on computational skills that will help each learner in solving real-life problems.

Table 4 manifests the significant difference in the pre-test and post-test after using the Hands On Minds On instructional activities for Elementary BSE-Mathematics II students.

Table 17
Significant Difference in the Pre-test and Post-test Mean Score of the Students

Computed t-value	Critical value at .05	df	Interpretation	Decision
26.13	2.060	29	Significant	Reject H_0

The result manifested that the computed t-value of 26.13 with the degree of freedom of 29 is greater than the critical value of 2.060 at .05 level of significance which means there is a significant difference between the pre-test and post-test mean score of the students. Hence, the null hypothesis was rejected.

Tow (2011), in his findings that there was a significant change in the academic achievement and attitudes over the course of the year of sixth-grade students in the enrichment math pilot program.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

From the findings of this study, the following conclusions were drawn:

1. It appears that the performance level of BSE Math II students in Basic Statistics during the school year 2019-2020 was average.
2. A proposed Hands On Minds On instructional activity for Elementary BSE-Mathematics II was designed to enhance the mastery of the students in computation and problem solving in Statistics and likewise developed the sense of appreciation in statistical skills.
3. The developed Hands On Minds On instructional activity for Elementary BSE-Mathematics II were acceptable to the respondents with respect to the objectives, clarity, language and style, presentation, usefulness, evaluation, illustration and activities.
4. Apparently, the performance in mathematics of BSE Math II students exposed to Hands On Minds On instructional activities had improved and from moving towards mastery to closely approximating mastery. There was an increased level of performance of the students after using Hands On Minds On instructional activities in the pretest and posttest mean score. The level of performance of the student in posttest differs significantly as compared to the pretest.

Recommendations

From the conclusions drawn, the following recommendations are forwarded:

1. Teachers should exert more time and effort in teaching students to their students with proper motivation and encouragement.
2. The developed activity worksheets as instructional materials are suggested be used for secondary and tertiary level in Statistics subjects.
3. The Hands On Minds On instructional activities may be developed as a computer aided instructional material.
4. Teachers should utilize interactive teaching in Mathematics in the tertiary level.
5. Teachers should always enrich activities to students for further skills development.
6. School heads should always support the teachers on their exerted efforts by recommending the use of developed instructional materials.
7. The results of this study be published and disseminated to all concerned for information purpose and to elicit feedback.
8. Continuous validation of the learning materials should be conducted to determine its usefulness in instruction.

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TIME MANAGEMENT STRATEGIES OF SUPERVISORS AND MANAGERS IN SELECTED MANUFACTURING COMPANIES IN CARMONA CAVITE: INPUT TO STAFF DEVELOPMENT PLAN

*Josephine S. Tuvilla
Hernan M. Oliveros*

INTRODUCTION

Most of us start our careers as individual contributors, responsible only for our own work. Once we have become competent and developed expertise in the role, we may be considered suitable for promotion. The first step on the management ladder is the supervisor, team leader, or first line manager. This role requires the individual to develop new skills such as communication, problem-solving, managing people, time management skills, leadership, planning, motivation and delegation.

The ability to lead and manage people effectively is vital in the business today. We all know how demanding and challenging the responsibilities of management can be. Managers and supervisors are not only expected to manage their selves, but also to deal with the day-to-day working challenges and emotional demands of the rest of the people and teams they manage

One of the biggest challenges supervisors and managers face is managing their time. Because of the very nature of their job, supervisor and managers are often bombarded with competing demands on their time from staff, internal/external customers, management and their personal lives. Yet, the ability to identify and focus their attention on the most important tasks is often the difference between a successful or unsuccessful manager and supervisor. Consequently, as a supervisor or manager, the ability to successfully manage your time is one of the most important skill set you need to develop.

Time management is not very difficult as a concept, but It's surprisingly hard to do in practice. It requires the investment of a little time upfront to priorities and organizing yourself. Managing time means adapting to its passage in some appropriate, satisfying manner. The only way to manage time better is to spend time in appropriate way and consummates an exact amount.

Managing time to accomplish important objectives requires careful planning. Overwork is often the result of failure to delegate and establish proper priorities. Successful time management depends on more than a carefully planned system. It requires a positive action against the time wasters that threaten to destroy the plan through improved techniques

Time management is a skill that can elude many managers. As a manager you are responsible for your own time and how those you supervise spend theirs. Finding time to accomplish everything that's need to be done sometimes may seem impossible. But simple shifts in thinking can help you get a handle on your own time and use it more productively.

As a manager you may face a heavier workload than ever with responsibilities increasing and deadlines growing shorter. It may seem working overtime is the only way to get everything done.

Due to the hectic schedule of the managers and supervisors they encountered a lot of problems and the demand of their work especially in their time how they use the balance of it.

This research study was conducted to determine the time management strategies of supervisors and managers in selected manufacturing companies.

Statement of the Problem

1. What is the demographic profile of the respondents in terms of:
 - 1.1 Age;
 - 1.2 Sex;
 - 1.3 Civil Status;
 - 1.4 Length of Service; and
 - 1.5 Educational Attainment?
2. What are the time management strategies of supervisors and managers in selected manufacturing companies terms of:
 - 2.1 Task Accomplishment;
 - 2.2 Setting Priority; and
 - 2.3 Handling work Demands?
3. Is there significant relationship between the demographic profile and the time management strategies of supervisors and managers in selected manufacturing companies as to the above mentioned variables?
4. Based on findings, what staff development plan may be developed?

The descriptive method of research was used in order to identify the time management strategies of supervisors and managers using the survey questionnaire. The study involved 21 supervisors and managers in selected manufacturing companies in Carmona, Cavite and chi-square was used to determine relationship between the variables

METHODOLOGY

Research Design

Descriptive method of research was used by the researches in order to identify the time management strategies of supervisors and managers in selected companies. This method was supported by a survey questionnaire to explain the prevailing situation and information

RESULT AND DISCUSSION

A total of 21 or 64 percent of the total population were utilized as a samples and were involved as respondents. They were chosen by means of quota sampling based on the availability of the respondents during the conduct of the survey

Table 1 shows the population and samples used in the study. As Shown in the Table1, the population of the study comprised five (5) manufacturing companies namely: Daedong Urathane, Inc., The Fourth Dimension, EMAC, Industrial Gas Company, and Uni- Fab Metal Industry.

Table 1
Summary Distribution of Respondents by Company

Name of the company	Population	Sample	Percentage
Daedong Urathaine, Inc.	2	2	9.50
The Fourth Dimension	9	6	28.60
EMAC	7	4	19.00
Industrial Gas Company	8	5	23.80
Uni-Fab Metal Industry	8	4	19.00
Total	33	21	100.00

As show in Table 2, a total of 21 supervisors and managers from Selected manufacturing companies in Carmona, Cavite were chosen as a respondents of the study. Majority of the respondents came from the Fourth Dimension with 6 or 28.6 percent, followed by Industrial Gas Company with 5 or 23.8 percent, Uni-Fab Metal Industry and EMAC have 4 or 19.05 percent each, and Daedong Urathaine, Inc. has 2 or 9.5 percent.

Table 2
Respondents of the Study

Name of the company	Population	Percentage
Daedong Urathaine, Inc.	2	9.50
The Fourth Dimension	6	28.60
EMAC	4	19.05
Industrial Gas Company	5	23.80
Uni-Fab Metal Industry	4	19.05
Total	21	100.00

CONCLUSION AND RECOMMENDATION

Based on the findings of the study, the following conclusions are drawn

1. Managers and supervisors in selected companies are still young; majority of them are quite new and have shorter length of service, and have not taken advance or graduate studies.
2. Managers and supervisors always have varied time management strategies in terms of task accomplishment, setting priority, and handling work demands.
3. The Demographic profile of the respondents has nothing to do their management strategies. It does not affect in any way their task accomplishments, setting priority, handling work demands.
4. There is a need to formalize the time management strategies of managers and supervisors into a simple staff development plan.

In the light of findings and conclusions, the following recommendations were derived:

1. Managers and supervisors may pursue advance or graduate studies to enhance their skills and update their knowledge in order to improve further their task performance.
2. Maintaining their time management strategies can lead to more productivity among their employees/ subordinates.
3. The managers and supervisors may always supervise their employees for staff track progress.
4. Training program and other worthwhile activities that could enhance time management strategies may be included in the staff development for managers, supervisors and also their employees for implementation.
5. Further studies can be conducted to arrive at more conclusive findings on this topic.

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**PAGMAMAPA NG MGA PAGSASALING NG MGA GRADWADONG MAG-AARAL NG
UNIBERSIDAD NG PILIPINAS TUNGO SA PAGBUO NG REKOMENDASYONG
TALA NG PAGSASALIN SA EARIST**

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Esperanza Villena
Adrian Calimlim*

INTRODUKSYON

Noon pa man ay may ilan ng mga dalubwika na nagpakita ng inisyatibo hinggil sa pag-iintelektwalisa ng ating wikang pambansa. Isa na riyang ay si Dr. Bonifacio Sibayan (1985) na nagsagawa ng isang pagpaplanong pangwika. Layunin nang nasabing plano na magsilbing batayan o referensiya sa proseso ng intelektwalisasyon ng ating pambansang wika. Ang planong ito ay di lubusang naging matagumpay. Isa sa mga nakitang kahinaan nito ay ang kawalan ng importansya sa larang ng pagsasalin. Kaya naman sa susunod na taon, sa gaganaping pambansang kumperensiya ng pagpaplanong pangwika (na pangungunahan ng KWF at ilan pang mga institusyon), binigyang puwang na ang kahalagahan ng pagsasalin bilang tulay sa minimithing intelektwalisadong wikang Filipino. Isinama nila ang pagsasalin bilang isang mahalagang agenda na kanilang pag-uusapan.

Kaugnay nito, ayon nga kay Almario (2017) “kinakailangan sa gaganaping pagpupulong na ito ay mailatag ng bawat unibersidad ang kanilang mga pag-aaral sa pagsasalin nang sa gayon ay makita ang naging papel nila at magiging papel pa sa pagpapayabong ng Wikang Filipino.”

Sa tagpong ito pumapasok ang pananaliksik na ito, nilayon ng mga mananaliksik na maipakita ang kontribusyon ng Unibersidad ng Pilipinas (bilang isang nangungunang institusyon sa pag-iintelektwalisa ng wikang Filipino) sa larang ng pagsasalin. Ninanais ng mga mananaliksik na makabuo ng isang data based research ng mga pagsasalin sa unibersidad na ito na siyang magagamit nila sa gaganaping kumperensiya sa susunod na taon. Layon din ng mga mananaliksik na makabuo ng isang sistematikong listahan ng mga paksa na maaaring isalin ng mga mag-aaral na gradwado na kumukuha nang nasabing kurso.

MGA TIYAK NA LAYUNIN SA PAG-AARAL

Nilalayon ng pag-aaral na ito na:

1. Maitala ang mga naisagawang pag-aaral sa larang ng pagsasaling-wika sa UP.
2. Matukoy ang mga paksa ng pag-aaral na ukol sa pagsasalin na naisagawa sa UP.
3. Makabuo ng isang rekomendasyong listahan ng mga paksang maaaring isalin ng mga mag-aaral sa Filipino ng EARIST.

METODOLOHIYA

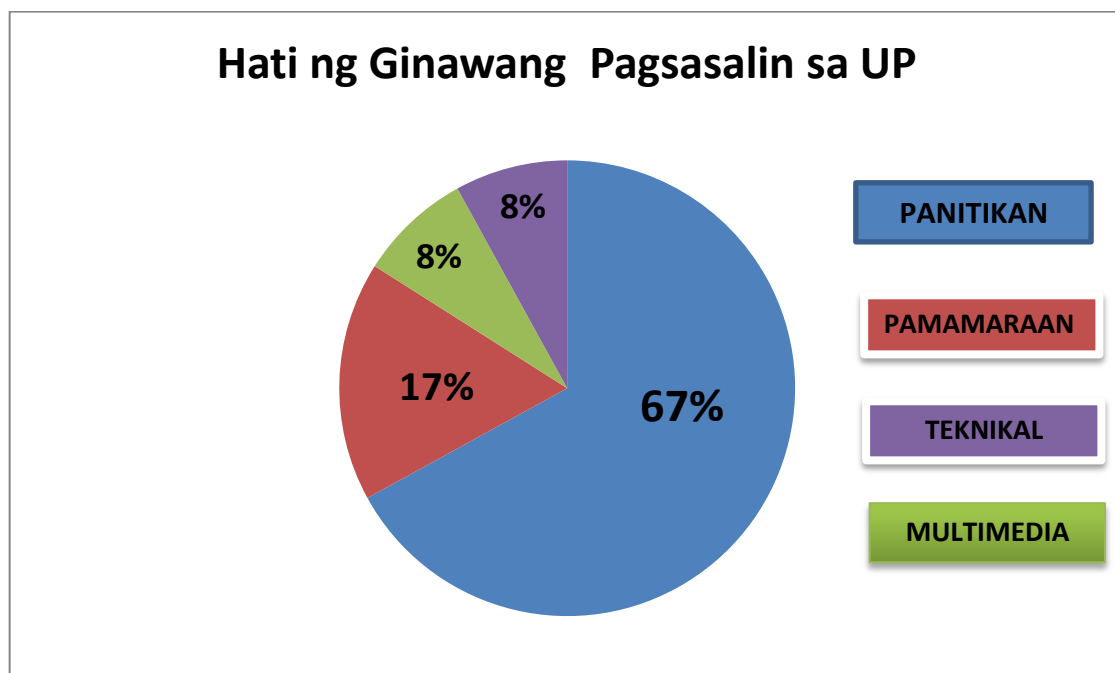
Ang mga mananaliksik ay gumamit ng isang deskriptibong pamamaraan upang ilarawan ang mga paksang namamayani sa larangan ng pagsasalin sa mga pananaliksik na naisagawa sa Unibersidad ng Pilipinas. Inihanay ng mga mananaliksik ang mga nagawang pananaliksik sa pamamagitan ng isang talahanayan batay sa mga sumusunod na detalye:

- (1) Taong Nailathala ang Pananaliksik
- (2) Pamagat at Mga Mananaliksik
- (3) Mga Layunin
- (4) Mga Ambag ng Pananaliksik

Taon	Pamagat	Mananaliksik	Paksa	Layunin	Mga Ambag
1987	Pagsasakatubo sa Pagsasalin: ang nilalaman at pamamaraan ng pagsasalin ng nobela sa panahon ng kolonyalismong Amerikano, 1912 – 1940	Lilia F. Antonio	Pamamaraan sa Pagsasalin - Pagsasakatubo	Mailahad ang naging pangunahing paksain at pamamaraan ng pagsasalin ng nobela sa panahon ng kolonyalismong Amerikano	Data ng mga ginawang pagsasalin ng nobela sa panahon ng kolonyalismong Amerikano
1990	Kasaysayang Bilang Panitikan: Pagsasalin at Ebalwasyon ng The Forest (Ang Gubat) ni William J. Pomeroy	Rogelo Sicat	Pagsasalin sa Panitikan (Ilocos Sur) SW: Ingles/Ilokano TW: Filipino	Maipakilala ang The Forest, ngayoy nasa Wikang Filipino bilang isang rekord na pang kasaysayan ng rebolusyon ng mga magsasaka, at pagpapakilala rin sa awtor bilang mahalagang manunulat ng kasaysayang at panitikan ng Pilipinas.	Naipakilala ang nobela ng The Forset bilang record ng kasaysayan sa rebolusyon ng mga magsasaka.
Abril, 1993	PANAGIYULOG: Tungo sa Pagbubuo ng Isang Teoryang sa Pagsasalin (Maikling Kwento Iloko sa Filipino)	Ofelia B. Jamilosa-Sillapan	Pagsasalin sa Panitikan (Ilocos Norte) SW: Ilokano TW: Filipino	Makabuo ng isang teorya ng pagsasalin sa Filipino mula sa sang katutubong wika sa Pilipinas.	Isang teorya na magiging lunsaran sa gagawing pagsasalin mula Ilokano tungo sa Filipino
Marso, 1998	Mapanuring Paglilimbag: Isang Pagsasalin at Pagsusuri ng Historia dela Insurrecion Filipina en Cavite ni Don Telesforo Canseco, 1987	Jose Rhommel B. Hernandez	Pagsasalin sa Panitikan SW- Kastila TW – Filipino	Maipakilala si Telesforo Canseco at ang kanyang naging gampaning papel sa rebolusyon ng Cavite	Ang kahalagahan ng Historia bilang batis sa pagtalunton sa kasaysayan ng rebolusyon ng mga Pilipino.
Mayo, 2004	Pagsusuri at Pagsasalin ng mga Sarswela ni Justiniano Nuyda, 11920-1928	Odessa N. Joson	Pagsasalin sa Panitikan (Bicol Region) SW: Bikolano TW: Filipino	Layunin nitong: Ano-ano at paano nagkaroon ng mga Kontradiksyon sa lipunang Bikolano noong 1920. Ano-ano ang mga magkasalungat magkakatunggaling senyal na nakapaloob sa dula? Ano-ano ang mga talinghagang lumtaw sa dula ni Nuyda na nagpapakia ng pagharap sa kontradik syon?	Maitawid ang panitikang Bikol sa mga mambabasa at maalil sa laylayan ng panitikan sa Filipino. Tinangkang ipasok sa mainstream ang wika at panitikang Bikol. Litaw na naipakita sa mga sarswela ang bahd ng impluwesnya ng Amerikano.
Okubre. 2005	"Pagbabalik sa Pinaghasikang Linang" Pagbuo ng Isang Modelo ng pagsasalang kultural batay sa sarsaritang pangkanayunan ni Manuel E. Arguilla	Florentino A. Iniego, Jr.	Pagsasalin sa Panitikan (Ilocos Sur) SW: Ingles TW: Filipino	Maisalin ang dalawang sarita ni MEA mula Wikang Ingles tungkol sa Wikang Filipino ambag sa pagtatanghal ng rehiyunal na panitikan sa pambasang panitikan. Matalakay ang pangangailangan malagpasan ang limitasyon ng wikang Ingles tungo sa mabisang paglalarawan ng buhay, dia at kulturang Iloko na matatagpuan sa mga akda ni MEA. Magpanukala ng isang modelo ng pagsasalang kultural na umaangkop sa paglalarawan ng buhay kultura at Wikang Iloko.	Isang ambag upang patunayan ang kakayahan ng wikang Filipino na pag-uugnay-ugnayin ang diberesidad ng buhay, wika, at kultura mula sa mga rehiyon tungo sa landasan ng pagbubuo ng pambasang panitikan. Isa itong paglingon at paglilikom sa mga nasimulang karanasan at panukala ng mga tagaasalin ng mga akdang rehiyunal.

Mayo, 2007	Mga Zarzuelang Pangasinan nina Pedro U. Sison na "Korang na Panaon" at Nazario D. Soriano na "Baliit" at "Calvariod Paraiso": ISang Pagsasalin	Rosalinda A. Mendigo	Pagsasalin sa Panitikan (Pangasinan) SW: Pangasinense TW: Filipino Pamamaraan: Social Semiotic	Isinalin mula sa wikang Pangasinense tungong wikang Filipino at pag-aralan at suriin ang mga nabanggit na zarzuela.	Naging daluyan ang saling teksto para sa diskurso ng pagpapanayam ng panitikang pambansa. Natukoy ang mahahalagang batayan at resulta ng pagkakaunawa ng bawat indibidwal sa zarzuela.
Oktubre, 2008	Ang Pagsasalin ng Agham Pampulitika Tungo sa Intelektwalisasyon ng Wikang Filipino	Ma. Norma Q. Tuazon	Pagsasaling Teknikal SW – Ingles TW – Filipino	Magsalin ng teksbuk ukol sa agham pampulitika na nasa anyong simple at madaling basahin	Salin ng mga teknikal na teksbuk sa Filipino

KINALABASAN NG PAG-AARAL



1. Maitala ang mga naisagawang pag-aaral sa larangan ng pagsasaling-wika sa UP.

Ang mga mananaliksik ay nakalikom ng 12 pag-aaral ukol sa pagsasalin na ginawa ng mga gradwadong mag-aaral. Makikita sa p. 4 – 13 ang kabuuang detalye ng mga pag-aaral na nalikom.

2. Matukoy ang mga paksa ng pag-aaral na ukol sa pagsasalin na naisagawa sa UP.

Sa ginawang paglikom ng mga mananaliksik, napag-alaman nila na ang karaniwang paksa ng pananaliksik ng mga gradwadong mag-aaral ay ang sumusunod:

- a. Ang kalimitang paksa ng pag-aaral ukol sa pagsasalang wika ay ang pagsasalin ng panitikan (Rehiyunal at Asyanong panitikan), multimedia (banyagang dramang pantelebisyon) at teknikal tulad ng sayantipikal na pag-aaral.
- b. Sa pamamaraan sa pagsasalin, kalimitang inilapat ang pragmatiko, dekonstruksyon, semantikal, hambingang salin at social semiotics na pamamaraan.
- c. Sa nalikom na salin, nasa ibaba ang ilang mga wikang ginamit bilang simulatong wika at tunguhing wika:
Simulaing Wika: Ilokano, Pngasinense, Kastila, Tsino, Ingles, Ibanag, Bikolano.
Tunguhing Wika: Filipino, Ingles.

3. Makabuo ng isang rekomendasyong listahan ng mga paksang maaaring isalin ng mga mag-aaral sa gradwadong antas.

Sa kabuuan, mayroong 15 pag-aaral ukol sa pagsasalin ang nalikom ng mga mananaliksik. 9 rito ay panitikan, 3 ay sa pamamaraan, 1 sa multimedia at 2 rin naman sa teknikal na aspeto. Kaugnay sa nalikom na pag-aaral na ito, naging batayan ito ng mga mananaliksik upang bumuo ng isang rekomendasyong listahan ng mga tiyak na paksa na na maaaring isalin ng mga gradwadong mag-aaral ng UP.

Nasa ibaba ang nabuong rekomendasyong listahan ng mga mananaliksik:

Tema ng Pananaliksik	Tiyak na Paksa
PANITIKAN	<p>Global na Panitikan: Amerika, England, France, Germany at iba pang mga bansa sa kanluranin.</p> <p>Uri ng Akda: Tula, Sanaysay, Epiko, Nobela, Dula, Maikling Kwento, Pabula, Alamat</p>
TEKNIKAL	<ul style="list-style-type: none"> • Mga Batayang Aklat sa Elementarya, Sekundarya, Tersarya ry na sa asignaturang Matematika, Agham, Bokasyunal at iba pang subjek na ang midyun ng pagsulat ay nasa Ingles. • Mga Sayantipikal at Matematikal na Pag-aaral. Hal: sa larang ng <i>Biology, Chemistry, Physics, Calculus</i> atbp. • Mga Teknikal at Bokasyunal na Pag-aaral: Hal: sa larang ng Kompyuter, Makina, at <i>Engineering</i> • At iba pang teknikal na teksto Hal: student handbook, journal, mga fill-up form ng kumpanya atbp.
MULTIMEDIA	<ul style="list-style-type: none"> • Mga rehiyunal na dramang panradyo at pantelebisyon • Mga Asyano at kanluraning dramang panradyo at pantelebisyon
PAMAMARAAN	<ul style="list-style-type: none"> • Komunikatibo • Idyomatiko • Teknikal • Malayang Salin

KONGKLUSYON

Batay sa kinalabasan ng pag-aaral, ang mga mananaliksik ay nakabuo ng kongklusyon na:

1. Bagamat may kursong “Pagsasalin” sa antas gradwado ng Unibersidad ng Pilipinas, kakaunti lamang ang mga pag-aaral na ukol sa pagsasalin ang ginagawa ng mga gradwadong mag-aaral nito.

2. Kalimitan na “Panitikan” ang paksa ng pagsasalin ng mga gradwadong mag-aaral, at ito’y nakapokus lamang sa rehiyunal at asyanong panitikan. Ang “Teknikal” at “Multimedia” naman ang siyang pinakamadalang na paksa na gawan ng pag-aaral na pagsasalin. Karaniwan namang Ingles at Filipino ang wikang ginagamit ng mga nagsasalin.

3. Ang nabuong rekomendasyong listahan ng mga mananaliksik ay nakabatay sa mga paksang hindi naging saklaw ng pag-aaral ng mga gradwadong mag-aaral sa Unibersidad ng Pilipinas.

REKOMENDASYON

1. Magbigay ang Unibersidad ng Pilipinas sa mga gradwadong mag-aaral ng tulong pinansyal upang maisakatuparan nila at mailathala ang anumang pag-aaral na nauukol sa pagsasalin.

2. Magkaroon ng kowta ng bilang ng mga pagsasalin na ang paksa ay “Panitikan”. Himukin ang mga gradwadong mag-aaral na magsalin ng isang panitikan gamit ang mga rehiyunal na wikang sinasalita sa ating bansa.

3. Maaari ring gumawa ng isang data based na nakapokus naman sa ibang erya ng Filipino tulad ng komunikatibo, kagamitang pampagtuturo, estuktura ng wika, atbp. Makatutulong ito upang makabuo ng mga rekomendasyong listahan ng mga paksa na maaaring gawan ng pag-aaral, na siyang magiging daan naman upang mapalawak pa ang kaalaman sa mga eryang nabanggit.

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